MONGOLIA HUMAN RESOURCE DEVELOPMENT AND EDUCATION REFORM PROJECT

MONGOLIA

SECTOR REVIEW

Prepared for the Government of Mongolia by
- The Ministry of Science and Education
- The Academy for Educational Development
- The School of Education, University of Pittsburgh
- DanEduc Consulting

Support for this activity was provided by the
Asian Development Bank with financial assistance from
The Japan Special Fund
21 December 1993

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Prepared by:

For the Government of Mongolia:

Dr. B. Enkhetuvshin, Director General, SciencE and Technology department, Ministry of Scienc and Education (MOSE) - PROJECT DIRECTOR
Ms. Ts. Undrakh, Division of External Relations and Cooperation, MOSE - PROJECT COORDINATOR
Mr. R. Bat-Erdene, Deputy Director, Postsecondary Education Department, MOSE - CHAIR, EDUCATION PLANNING AND POLICY TEAM
Mr. J. Sukhbaatar, Principal, College of Business and Commerce - CHAIR, ECONOMICS AND FINANCE TEAM
Dr. N. Begz, Director, Institute for Educational Development, MOSE - CHAIR, EDUCATIONAL MANAGEMENT TEAM
Dr. B. Jadamba, Vice Rector, Pedagogical University - CHAIR, BASIC AND SECONDARY EDUCATION TEAM
Dr. S. Davaa, Vice Rector, National University of Mongolia - CHAIR, HIGHER EDUCATION TEAM
Mr. J. Yura, Officer, Postsecondary Education Department, MOSE - CHAIR, VOCATIONAL - TECHNICAL AND NONFORMAL EDUCATION

Team Members:

Mr. R. Bandii, Deputy Director, Institute for Educational Development, MOSE
Mr. A. Batjargal, Officer, Economics and Social Welfare Department, MOSE
Mr. P. Batrinchin, Officer, Postsecondary Education Department, MOSE
Mr. Ch. Buyanjargal, Officer, Economics and Social Welfare Department, MOSE
Mr. P. Dorj, Deputy Director, Preschool and Secondary Education Department, MOSE
Mr. Ts. Gelegjamts, Deputy Director, Administration Department, MOSE
Mr. S. Pseepil, Methodologist, Research Center, Pedagogical University
Mr. J. Tseveendorj, Officer, Economics and Social Welfare Department, MOSE
Mr. D. Vanchigsuren, Senior Researcher, Institute for Educational Development, MOSE

For the Academy for Education Development:

Dr. D. M. Windham, Distinguished Service Professor, State University of New York at Albany (TEAM LEADER)
Dr. M. Bray, Head, Department of Education, University of Hong Kong
Dr. L. J. Kenneke, Professor of Professional Technical Education, Oregon State University
Dr. W. A. Stuart, Dean Emeritus, Rutgers University

For DanEduc Consulting:

Dr. S. Spaulding, Professor of Administrative and Policy Studies and of International and Development Education, University of Pittsburgh

For the School of Education, University of Pittsburgh:

Dr. J. C. Weidman, Professor of Higher Education and of Sociology, University of Pittsburgh

Project Staff:

Ms. B. Oyumaa, Coordinator of Interpreters
Ms. D. Enkhtsetseg, Secretary and Interpreter
Ms. N. Aligirmaa, Interpreter
Ms. B. Mandirguya, Interpreter

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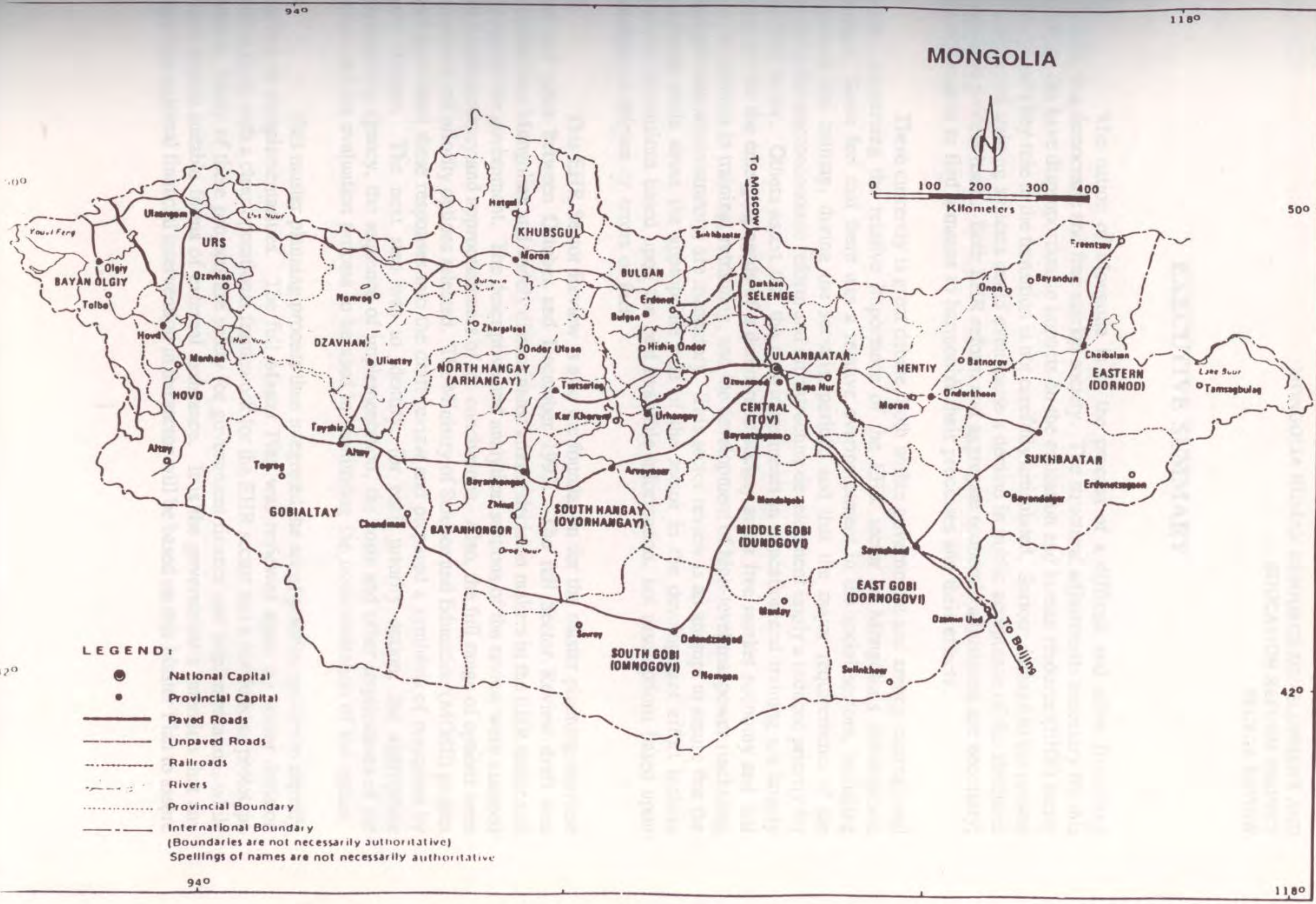
LIST OF ABBREVIATIONS AND ACRONYMS

ACCU	Asian Culture Center for UNESCO
ADB	Asian Development Bank
CMEA	Council for Mutual Economic Assistance
DANIDA	Danish Institute for Development Assistance
EHR	Education and Human Resources
GDP	Gross Domestic Product
GNP	Gross National Product
HERC	Higher Education Reform Commission
IAMD	Institute for Administration and Management Development
IMF	International Monetary Fund
K-10	Kindergarten through grade 10
MLPP	Ministry of Labor and Population Policy
MOF	Ministry of Finance
MOH	Ministry of Health
MOSE	Ministry of Science and Education
MPRP	Mongolian People's Revolutionary Party
MTI	Ministry of Trade and Industry
NCC	National Children's Center
NDB	National Development Board
NFE	Nonformal Education
NPA	National Program of Action
NUM	National University of Mongolia
PPAU	Planning/Policy Analysis Unit
PRC	People's Republic of China
Tg	Tugrug
TPC	Training and Production Center
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
USSR	Union of Soviet Socialist Republics
VSO	Volunteers in Service Overseas
VTE	Vocational-Technical Education


MONGOLIA
0 100 200 300 400
Kilometers
To Moscow
To Beijing
ULAANBAATAR
BAYAN OLGIY
URS
HOVD
GOBIALTAY
DZAVHAN
KHUBSGUL
BULGAN
SELENGE
NORTH HANGAY (ARHANGAY)
SOUTH HANGAY (OVORHANGAY)
BAYANHONGOR
CENTRAL (TOV)
MIDDLE GOBI (DUNDGOVI)
SOUTH GOBI (OMNOGOVI)
EAST GOBI (DORNOGOVI)
HENTIY
SUKHBAATAR
EASTERN (DORNOD)
Choibalsan
Ulaangom
Olgiy
Hovd
Altay
Moron
Bulgan
Erdenet
Darkhan
Sukhbaatar
Tsetserleg
Arvayheer
Mandalgobi
Dalandzadgad
Sayndsand
Baruun Urt
Ondorkhaan
Uliastay
Bayanhongor
Dzamyn Ud
LEGEND:
National Capital
Provincial Capital
Paved Roads
Unpaved Roads
Railroads
Rivers
Provincial Boundary
International Boundary
(Boundaries are not necessarily authoritative)
Spellings of names are not necessarily authoritative
94°
118°
50°
42°

MONGOLIA EDUCATION AND HUMAN RESOURCE SECTOR REVIEW

EXECUTIVE SUMMARY

1. The nation of Mongolia is in the process of a difficult and often frustrating transition to a democratic and free market society. The structural adjustments that are a necessary part of this transition can have disproportionate impacts on the education and human resource (EHR) sector if the sector's key role in the transition is not carefully articulated. Serious damage to the present education and training systems could even cause a decline in the public acceptance of the structural adjustment process itself. Both EHR reform and aggregate economic adjustment are necessary; the challenge is to find a means to harmonize their processes and their effects.

2. There currently is great debate, both within government and among international donors, concerning the relative importance of the EHR sector in Mongolia's development strategy. Some feel that there was a relative overinvestment in the social sectors, including education and training, during the socialist period, and that the major requirements of the transition for macroeconomic reform and infrastructure development imply a reduced priority for the EHR sector. Others assert that the past investments in education and training are largely irrelevant for the emerging needs of a democratic society and a free market economy and that new investments in training, retraining, and the development of high level manpower (including managers and administrators) are mandatory. This sector review is an attempt to assure that the judgments made about the appropriate role of the sector in the development effort are reasoned conclusions based upon the best available information, not assumptions based upon unsupported opinion or errors of fact.

3. This EHR Sector Review is also the foundation for a master planning exercise that took place between October and December, 1993. The full Sector Review draft was translated into Mongolian and widely disseminated among decision makers in the EHR sector and throughout the government. The descriptive and analytical sections of the review will be assessed for factual accuracy and the appropriateness of the conclusions. Also, the full range of options were considered and priority options selected. The Ministry of Science and Education (MOSE) project staff assimilated these responses to the draft review and prepared a synthesis of responses by early October. The next step was to identify, for each priority option, the appropriate implementing agency, the sequence of implementation, the costs and other implications of the option, and the evaluation process to be used in monitoring the implementation of the option.

4. This master planning process then integrated the set of priority Options to identify where conflicts or complementarities may exist. The full Master Plan was reviewed again by senior decision makers

along with a clear operational framework for the EHR sector and a portfolio of prototype projects. Many of these projects are solely for government finance and implementation while some may require suitable forms of external assistance. It is the government's intention that any significant external financial intervention in the sector will be based on this Master Plan to assure the best fit between external interests and Mongolia's own identified priorities The major goal of the Master Plan exercise was to promote a program of EHR reform, defined in terms of Mongolia's priorities, rather than an uncoordinated set of subsector interventions that may not reflect the priorities and interests of the government and people of Mongolia. To assure full collaboration with the external assistance community, all concerned external agencies were invited to contribute to the assessment of options and the selection of priorities.

5. The Mongolian EHR structure includes a kindergarten for children from age 3-8 followed by a 6-2-2 structure of primary, middle, and general secondary education. Primary and middle education together are referred to as basic education and the grades 1-8 are "compulsory" but may be satisfied through a combination of formal and nonformal means. Vocational-technical education occurs primarily following grades 8, 9, and 10 but exists at earlier and later levels. Higher education includes the eight university-level institutions, two colleges authorized to award baccalaureate degrees, and a set of postsecondary colleges, most of which are being brought under the management of individual universities.

6. For 1991-92, the number of students (and institutions) at the kindergarten and the primary to general secondary levels were 85,671 (806) and 369,100 (679) respectively. For the same year, the number of students in public higher education totaled 13,400 in seven universities (excluding the Military University) and two colleges. Total baccalaureate enrollment in all higher education was 16,917. Vocational-technical education enrollments at the secondary education level equalled 11,685 in 28 institutions and 8,703 in 14 institutions at the postsecondary level.

7. The following text provides the key issues and options organized by the sector review's three contextual topics of policy and planning, economics and finance, and educational management, and of the three EHR subsectors defined for the sector review: (1) kindergarten, primary, middle (basic) and general secondary education; (2) higher education; and (3) vocational-technical and nonformal education.

KEY ISSUES AND OPTIONS

POLICY AND PLANNING

- Government decision makers need to recognize that priorities must be established and difficult decisions made. It is not possible to maintain all of the present EHR system. Explicit choices are necessary regarding which levels and forms of the EHR system to preserve and at what standards of access and quality.

- The need for EHR reform is not solely or even primarily financial in origin but the current financial crisis emphasizes the need for reform. Mongolia's EHR system has basic structural, curricular, personnel, and managerial problems that must be dealt with to prepare the nation for a democratic society and a free market economy.

- Planning activities must focus more on strategic objectives (with specifics as to control, participation, and funding - how much and from whom?) and monitoring and evaluation of the implementation process. Vague policy or planning pronouncements, and those that are unaffordable, should be avoided in favor of practical and realizable objectives.

- The Ministry of Science and Education is shifting from an implementing agency to a policy analysis, monitoring, and regulating authority. Structures and personnel need to be adapted to this new role.

- Formerly, EHR planning was designed to meet the requirements of central planning; there was a high degree of detail, assured funding, and little need for adaptation once the plan was approved. In the new environment, planning must deal with greater uncertainty, little assurance of funding, and a dramatic need for adaptability. The planning process and the participants in it require new skills and attitudes to deal with this change.

- Policy making and planning must become proactive rather than reactive and policy should not be an implicit result of funding decisions; rather, funding decisions should reflect stated policy priorities.

- MOSE authority in the past was closely linked to financial and legal responsibility; much of the financial authority has been lost because of decentralization of responsibility for basic education and general and vocational secondary education to the aimags (provinces) and the increased autonomy of higher education institutions. Legal authority also has been modified and the MOSE will need to rely increasingly on its intellectual authority - its ability to provide useful information, other services, and advice - to exercise continued influence within the EHR sector.

- The Government of Mongolia, through international agreements and its own policy statements, is committed to a reduction in the numbers of administrative and support staff at all levels of the EMR system. The two guidelines in this effort are to remove unnecessary personnel and to improve the quality of administrative personnel while reducing the total numbers and controlling the proportion of the budget allocated to administrative and support services.

- A Policy Analysis/Planning Unit is needed in the MOSE to formalize its new service role within government; this unit should be attached to the Vice Minister's office, and work with existing

departments and sub-units to provide the Minister, the Minister's Council, and the Khural (parliament) with information and advice concerning EHR policy options *at all levels of the system*.

ECONOMICS AND FINANCE

- The loss of the massive subsidization (totaling as much as 30% of GDP) from the former Soviet Union has caused a major contraction in public resources at the same time that the collapse of the communist trading bloc has ended Mongolia's preferential trade arrangements. These economic difficulties have occurred simultaneously with Mongolia's attempts to introduce democracy and the market system.

- Mongolia's former capital-intensive development strategy created a substantial misinvestment in unmaintainable and often irrelevant production enterprises while failing to create the necessary communication and transportation infrastructure for development of the substantial economic assets Mongolia does have in minerals, tourism, and food production.

- Inflation and unemployment are creating political and psychological as well as financial problems for the economic transition.

- The easier stage of privatization is over and the majority of the remaining public companies scheduled for privatization are either unprofitable or will require huge investments to make them self-sufficient. It is questionable if adequate investment funds, domestic and foreign, will be forthcoming in the immediate future to allow significant privatization gains except in service areas such as education and health where the government's own commitment to privatization is least clear.

- National fiscal capacity is constrained by the loss of foreign subsides and the former dependence on taxes levied on state enterprises; new taxes and collection systems are only being developed and the recession has reduced their ability generate necessary revenues. Cost containment rather than revenue enhancement is the more realistic short-term option for government.

- In 1990, recurrent expenditures were 78 percent of the government budget; since that time this proportion has increased to over 90 percent as investments in capital have been sacrificed to pay recurrent costs. Government salaries are relatively low but heating costs and other utilities take up a disproportionate share of budgets. Similarly, for education and training, teacher costs are low (29-42%) but utility costs relatively high (15-34%).

- The shares of total government expenditure (and per-student expenditures) in 1992 were: kindergarten - 21 percent (tg 5,094); basic and general secondary - 55 percent (tg 2,035); vocational

secondary - 7 percent (tg 9,333); higher education - 16 percent (tg 12,954). The proportion and the unit costs for kindergarten are unusually high.

- Population increase will create a 29 percent expansion of the 0-16 age cohort over the next 15 years. Even if currently reduced participation rates continue, this population growth will cause an increase in the need for school resources.

- Additional EHR resources need to be generated by encouraging private education alternatives at all levels, promoting institutional income generation through production enterprises, initiating fee systems in postsecondary education, promoting private and community partnerships with educational institutions, and requiring students and families to bear a larger share of operational costs. All of these activities will require careful implementation and monitoring to minimize potential inequities and to protect basic social interests.

- Cost-reduction efforts, should include closing or otherwise reducing the scale of existing institutions; reducing or eliminating public kindergartens; increasing the efficiency of utility generation, delivery, and use; encouraging local innovations (schools in *gers*, community maintenance projects); creating more 1-4 schools to limit needs for dormitories; rationalizing staffing levels and patterns; and investigating nontraditional delivery systems to provide equivalent EHR opportunities at less cost.

EDUCATIONAL MANAGEMENT

- The nature of the demands for management and for management training are changing because of the shift from the command economy and toward more democratic and participatory decision structures.

- The Education Law of 1991 defines administrative structures and responsibilities; the main characteristics are the attempt to merge science and education, decentralization of administrative and financial authority to *aimags*, increased autonomy in higher education, and authorization of private schooling.

- Decentralization has been introduced without a clear agreement as to the division of authority and responsibility between the MOSE and local authorities, and inadequate consideration has been given to the administrative capacity of the local officials who now have such major educational responsibilities.

- Traditional administrative structures continue to dominate new formal and informal advisory bodies (e.g. Commission on Higher Education Reform or Council of Rectors) even when the latter represent more qualified or more representative groups. The government needs to create conditions where better use is made of

such private or quasi-public organizations. Also, such organizations should be allowed to organize and operate without government approval or supervision.

- MOSE personnel and responsibilities have changed while its internal structure has remained the same; a better fit of personnel and structure to new responsibilities is needed. A comprehensive management audit is needed of the MOSE's roles, personnel, and structures.

- Personnel management is constrained by low salaries (and low salary ranges) and lack of opportunities and incentives for professional development.

- Information availability in basic EHR statistics and financial data is good but not closely tied to decision makers' needs and not readily available for use in policy analysis.

- Financial control is detailed and systematic, but not subject to independent audit.

- Training institutions for management are emerging, most notably the Institute for Administration and Management Development (IAMD); however, a lack of cooperation and coordination appears to exist among the institutions in this area and the IAMD could play a potentially valuable leadership role.

- Consideration should be given to reducing the number of higher educational institutions to make better use of management talent and to reduce program redundancies.

- Managers at all levels need training in making decisions under financial constraints. Managers must understand that the failure to make decisions is an implicit decision to accept the consequences of inaction.

BASIC AND GENERAL SECONDARY EDUCATION

- Mongolia has had one of the most equitable education systems in terms of gender, ethnic, and locational (urban-rural or regional) standards.

- The intended role of government in education has been confused by general uncertainty about the responsibilities of the government for social sectors in a democratic, free enterprise society. Official pronouncements of EHR goals and objectives are inconsistent with policy actions and financial decisions.

- Dropout rates have increased from 4 percent in 1988-89 to almost 22 percent in 1992-93 with those in rural schools (especially males) being the more common dropouts. The causes appear to be improved economic opportunities resulting from privatization of herds, skepticism about the relevance of

education, and perceptions of increasingly poor quality in the schools.

- The financial crisis and inflation have caused many schools to exhaust their January-December fiscal year budget by June and substantial new allocations are needed before they can open in September. Kindergartens, boarding facilities, and grades 9 and 10 are the major places where cuts are being made.

- The teaching staff is diminishing and many of the more qualified teachers are leaving for better opportunities. New teacher supply is inadequate to meet the requirements for qualified teachers, and rural schools will have the least qualified teachers.

- The new 1991 curriculum has not always been implemented effectively but does attempt to increase local relevance while retaining the core of subjects necessary for preparation for postsecondary education.

- Introduction of the local script requirement has placed special demands on education at a time of financial and other crises. Teacher training and new textbook development and dissemination have been dominated by this one topic; the implementation of Mongol script needs to be carefully planned to avoid disruption of other educational activities; UNESCO, Japan, and other countries have promised support for textbook design, production, and dissemination.

- Textbook production and distribution is constrained by shortages of paper and finance as well as an inadequate distribution infrastructure. A comprehensive textbook policy is needed that identifies priorities, assigns detailed responsibility for tasks, and encourages greater use of private alternatives in materials design, production, and dissemination.

- Facilities are deteriorating and equipment is often not available or is nonfunctioning. Maintenance is totally inadequate and in most schools there is no budget for repairs.

- Private institutions of primary, middle, and general secondary education should be encouraged and basic standards of personnel and facilities should be established for their operation. These standards should be the same as used in the management of public institutions. Students graduating from private schools should have equal rights to transfer to public schools and to proceed to higher education.

- A major new program of nonformal and continuing education should be developed to provide learning opportunities to dropouts and others who leave school prior to completion of grade 8. In addition, nontraditional means of delivering formal education should be explored. For example, underused schools in rural areas might be closed, with single-classroom, multi-grade schools,

perhaps located in traditional *gers*, replacing them. Also, "family schools" for nomads could be encouraged; these schools, with or without formal teachers, would move with the families and use the advantage of the education of the parents combined with special home-study materials.

- More inservice and preservice training should be provided for school and local government administrators in the area of educational management. In addition, teachers should receive training in educational guidance to allow them to help students and their families prepare for the new opportunities of the market-based society.

HIGHER EDUCATION

- In the last three years, higher education (defined to include only institutions granting baccalaureate or higher degrees) has changed from a single, public, comprehensive university to a set of eight specialized university-level institutions complemented by colleges emphasizing technology, art, economics and business. The National University of Mongolia is the only institution that has maintained programs across the traditional curriculum. An increasing number of private higher education institutions are now being opened.

- Two major organizational trends in this same period are the attempts to merge research and teaching (by bringing formerly independent research institutes within the new universities) and the placing of postsecondary "colleges" under the control of the universities.

- The degree structure is shifting from a Soviet model to one of B.A., M.A., Ph.D., with the existing Doctor of Science degree being retained as an advanced degree 2 1/2 to 3 years beyond the Ph.D. No standardization of these degrees in length of study or curriculum content exists and there is some confusion about the equivalency of these new degrees with the old degrees.

- The major financial changes occurring in higher education are the elimination of student stipends (commonly about one-third of the total budget and for several institutions the single largest budget item) and the introduction of tuition fees. The tuition fees are intended to cover the variable costs associated with instruction; a State Foundation for Training is being established to provide loans for students sponsored by future employers or identified by the National Development Board (NDB) as part of future manpower requirements.

- Simultaneous with the encouragement of market forces in higher education through the introduction of fees, the system continues to operate under a manpower planning model that is a vestige of the old command economy. Places in public higher educational institutions have been allocated based on the NDB's

projections of manpower demand and employer sponsorship. Even with tuition fees, some programs will not admit fee-paying students who do not qualify under this allocation system. It appears that for some program areas, such as foreign language, the NDB estimates are artificially low; this encourages students to seek private higher education alternatives.

- Higher education enrollments peaked in 1985 at 18,141 and by 1993 fallen to 16,917 (the Agriculture University suffered the great contraction in enrollment). In 1985, another 6,110 Mongolians were higher education programs in other countries; in 1993, only 41 new students were admitted abroad. Future enrollments may be curtailed by the removal of stipends and introduction of fees, but currently, private demand for higher education remains strong. The more serious constraint on enrollment will continue to be the NDB's reduced estimates of manpower demand; even if formal quotas are eliminated, this will mean fewer students who qualify for government loans for their higher education. Criteria other than manpower demand (such as financial need) should be considered for loan eligibility.

- Higher education teachers are predominantly male, over 40 years of age, and were trained under the previous social system. The needs for specific retraining and for general staff development (especially in areas such as economics, law, and social science) are substantial but are unlikely to be satisfied in the short run because of inadequate finance and the lack of an institutional capacity in Mongolia to conduct such training.

- The higher education institutions offer over 100 specializations at the baccalaureate level. These are often excessively narrow and frequently are not appropriate for the current employment market. However, an increased emphasis is now being placed on such specializations as management, commerce, economics and accounting to respond to new market requirements.

- Higher education facilities are old, often in poor repair, and budgets for maintenance and renovation are totally inadequate. Equipment, especially computers and laboratory devices, is scarce, often outdated, and frequently nonfunctioning.

- Salaries are low and represent only 35 percent of the variable budget; per-student costs in 1992 ranged from Tg 11,926 at the Pedagogical University to Tg 38,119 at the National University's Pedagogical Institute at Khovd (these costs are approximately 60 percent higher now because of wage and other increases).

- Institutions are able to calculate detailed cost budgets by program but there is little evidence that this or any other institutional research data are used systematically in institutional planning.

- The four key areas of concern are teacher qualifications; the quality of facilities, laboratories, and equipment; the lack of library resources (over two-thirds of library collections are textbooks); and organizational structures that are fragmented and not well coordinated. Merging of institutions and privatization are alternatives worthy of consideration both as a means of reducing government expenditures and as a way to increase the effectiveness of instructional and research activities.

- The Academy of Science's reluctance to merge some of its institutes has led to the formation of the Institute of Technology; because these potential instructors are primarily researchers, an obvious alternative is to unite this institute with the Technical University or some other institution to offer graduate degree programs.

- Quality in the private system needs to be monitored by a joint public and private organization; the organization's role should be more to provide potential students with information about the institutions, not a strict regulatory authority.

- Fewer but better trained and better financed researchers would increase the internal efficiency of higher education and promote the external relevance of higher education's research effort.

VOCATIONAL-TECHNICAL AND NONFORMAL EDUCATION

- Nonformal, adult, and continuing education is not yet well developed in Mongolia. In contrast, the vocational-technical education (VTE) system has a long tradition of support under the command economy. The VTE structure consists of Training Production Centers (TPCs) for students from all grade levels; "step" schools preparing operatives, technicians, and semi-professionals from graduates of grades 8, 9, and 10; and VTE schools and colleges preparing technicians and semi-professionals, also from graduates of grades 8, 9, and 10.

- The traditions of the planned economy remain a strong influence in the VTE subsector. Manpower projections as a basis of enrollments, excessively narrow specializations, and a lack of emphasis on the adaptability needed to fit graduates for the free market are all signs of the difficulty the sector faces in this period of transition.

- Thirty-two TPCs and step schools existed in 1993. Enrollments have declined from 29,067 in 1990 to 11,685 in 1992 because of reduced student interest and intake limits imposed by the NDB. In 1990, 2,636 VTE students were enrolled in other countries (almost exclusively the Soviet Union and Eastern Europe); for 1992 this number was only 194.

- VTE teachers have declined from 3,077 in 1990 to 1,206 in 1992. Teachers are predominantly male, 30-50 years old, and not trained to prepare students for free market employment. Many of the best teachers appear to be leaving for better paying employment in the private sector.

- The VTE curriculum is still dominated by orientation to heavy industry rather than the service or commercial sectors. General education receives less attention in favor of highly specialized skills. The curriculum's desired focus on practice rather than theory is not realizable because of lack of equipment and supplies.

- VTE facilities are now dramatically underused relative to student capacity, but there is no indication of an insufficient number of VTE graduates in general. Excessive specialization in training may have reduced the ability of graduates to adapt to market demand. Facilities are in poor repair and equipment is old and often irrelevant for current skill needs.

- Administrative staff serve both as educational managers and as links to employers and training opportunities in the business enterprises. New forms of training administrators are needed to produce VTE managers who can organize training programs, initiate and maintain income generation activities, and promote the placement of graduates through identification of skill requirements and linking graduates to employers.

- Some TPCs and step schools have been successful in income generation activities. Innovation and flexibility in this regard should be encouraged; such activities provide financial support, orient student attitudes toward market needs, and develop entrepreneurial skills.

- Five critical internal efficiency needs are raising teacher quality, improving instructional methods, increasing the availability of teaching materials, upgrading facilities and equipment, and providing qualification testing of student achievement. The major external efficiency issue is the questionable relevance of VTE training to the skill needs of the labor market. Consolidation of training sites would lower costs and allow retention of better teachers if part of the savings is allocated to better salaries.

- The nonformal, adult, and continuing education system needs to evolve as a complement to general schooling and to formal VTE programs. It should serve as a special resource for rural children and adults and as a source of experimentation and innovation.

- A National Training Policy is needed to identify needs, how they can be met, and responsibilities for financial and managerial authority. This policy should clarify the appropriate role for private training institutions and the government's encouragement of on-the-job and nonformal training alternatives. Also, a

decision is required as to whether market forces or manpower planning will dictate future development of this subsector.

- Content of courses and of programs need to be made more relevant to the emerging manpower needs of the economy. Equipment and teaching materials must be available and suitable. For these changes to occur, a further contraction in the size of the VTE sector will be necessary.

- New partnerships are necessary between the public training sector and the private employment sector. Government should not attempt to monopolize VTE training; it should encourage on-the-job training through sharing of teachers and facilities and through joint activities between VTE programs and private companies. Facilities closed through consolidation of the VTE system should be available for use by private VTE schools.

8. This EHR Sector Review was the first step in the establishment of an integrated program of reform. During the development of the HER Master Plan, the options presented here were ranked by priority and the necessary implementation steps were identified. A major benefit of Mongolia developing this program of reform is that the government will be better able to use its own resources and will be in a stronger position to make use of any forthcoming foreign assistance. The ultimate beneficiaries of the Sector Review and the Master Plan will be the people of Mongolia - the students, families, employers, and communities. The goal of all educational analysis and planning should be the improvement of their lives and their futures.

CHAPTER 1

INTRODUCTION, CONTEXT, AND OVERVIEW

1. The nation of Mongolia is in the process of a difficult and often frustrating transition to a democratic and free market society. The structural adjustments that are a necessary part of this transition can have disproportionate impacts on the education and human resource (EHR) sector if the sector's key role in the transition is not carefully articulated. Serious damage to the present education and training systems could even cause a decline in the public acceptance of the structural adjustment process itself. Both EHR reform and aggregate economic adjustment are necessary; the challenge is to find a means to harmonize their processes and their effects.

2. There currently is great debate, both within government and among international donors, concerning the relative importance of the EHR sector in Mongolia's development strategy. Some feel that the social sectors, including education and training, were relatively overinvested in during the socialist period, and that the major requirements of the transition for macroeconomic reform and infrastructure development imply a reduced priority for the EHR sector. Others assert that the past investments in education and training are largely irrelevant for the emerging needs of a democratic society and a free market economy and that new investments in training, retraining, and the development of high level manpower (including managers and administrators) are mandatory. This sector review is an attempt to assure that the judgements made about the appropriate role of the sector in the development effort are reasoned conclusions based upon the best available information, not assumptions based upon unsupported opinion or errors of fact.

3. This EHR Sector Review is also the foundation for a master planning exercise that took place between October and December, 1993. The full Sector Review draft was translated into Mongolian and widely disseminated among decision makers in the EHR sector and throughout government. The descriptive and analytical sections of the review were assessed for factual accuracy and the appropriateness of the conclusions. Also, the full range of options were considered and priority options selected. The Ministry of Science and Education (MOSE) project staff assimilated these responses to the draft review and prepared a synthesis of responses by early October. The next step was to identify, for each priority option, the appropriate implementing agency, the sequence of implementation, the costs and other implications of the option, and the evaluation process to be used in monitoring the implementation of the option.

4. This master planning process then integrated the set of priority options to identify conflicts or complementarities. The full Master Plan was reviewed again by senior decision makers along with a

clear operational framework for the EHR sector and a portfolio of prototype projects. Many of these projects are solely for government finance and implementation while others require suitable forms of external assistance. It is the government's intention that any significant external financial intervention in the sector will be based on this Master Plan to assure the best fit between external interests and Mongolia's own identified priorities. The major goal of the master plan exercise was to promote a program of EHR reform, defined in terms of Mongolia's priorities, rather than an uncoordinated set of subsector interventions that may not reflect the priorities and interests of the government and people of Mongolia. To assure full collaboration with the external assistance community, all concerned external agencies will be invited to contribute to the assessment of options and the selection of priorities.

INTRODUCTION

5. All HER sector work has two primary purposes. The first is to assess the nature and magnitude of the opportunities and constraints that face the *systems* (and institutions) that provide education and training. The second is to assist the government, the private sector, and individuals in establishing priorities within a resource-constrained environment (like that which characterizes Mongolia today). The emphasis on a systems orientation is critical to the issues-oriented methodology of this sector analysis. All major EHR activities in Mongolia are included in the review to allow for the identification of complementarities and redundancies. Some of these interrelationships are obvious: one cannot reform primary education without understanding the derived requirements this will impose on the teacher training and other higher education programs to produce the appropriate quantity and quality of teachers and administrators. Other relationships are less obvious. For example, reduced retention of students in the secondary school cycle can result in the future not just in lower levels of demand for teacher training graduates but in a reduced adaptability in the general work force because of lower levels of educational attainment.

6. Another system aspect of the EHR sector review is that it views the EHR activities in the context of the current political, economic, and social environments in which they operate. In addition, the history and culture of a country is part of what must be understood before one can comprehend the complexities of the present educational

transition. Specifically, this sector review will concentrate upon the policy\planning context within the political system, the capacity for financing and for employment of graduates within the economy, and the management structures and incentives within the organizational system.

7. In addition to its analytical contribution, a major purpose of the EHR sector review is to identify options for exploiting the identified opportunities and for dealing with the identified constraints. The result of the analytical efforts is to clarify what can be documented, what can be inferred, and what remains to be done to establish an appropriate information base to inform and enhance government and private decision making about EHR concerns. Alternative goals and strategies will be proposed from which government, and its domestic and external partners in the EHR sector, can make concrete recommendations for policy reform, modification of education practice, new directions in information and research activities, and identification of complementary interventions by international assistance agencies. For the Mongolia EHR sector review, a follow-up activity, scheduled for the end of 1993, will focus on the need to convert the review's options into an educational master plan and a portfolio of EHR sector project proposals. Given the rapid changes occurring in the EHR system, independently and in reaction to the changes in the transitional economy, it is important that the awareness of the available alternatives be achieved in sufficient time to allow effective remedial action to be taken. The fact that the last three years have seen a dramatic contraction in education and training participation and an increasing threat to the existing quality of some programs suggests that the scheduling of this review is particularly well-timed.

8. This chapter consists of five main sections:

- Introduction
- The Mongolian Context for EHR Development and Reform
- The Environment for Policy and Planning
- Chapter Summaries
- Summary of Issues and Options.

This introduction will continue with a brief description of the nature of the EHR review and will present the sequence of topics and issues. Next, the key conceptual concepts used in the review will be defined and their use explained. The succeeding section deals with the methodological approach of the sector review which views the demand and public justification of EHR support as derived from the ability of EHR activities to encourage improvements in larger societal concerns such as the economy, politics, social change, etc. The Introduction concludes with a discussion of the potential benefits that may be expected from the EHR review.

9. The second section of this chapter, on the Mongolian context, looks at specific areas of background information necessary, especially for those unfamiliar with Mongolia, to understand the current situation in which the EHR reform is occurring. The geographical, historical, socio-cultural, political, and economic contexts are discussed briefly.

10. The third part of this chapter includes an examination of the means by which education and training plans are initiated, reviewed, approved, and implemented. In the same section, the EHR policy development structure will be assessed in terms of the major participants and their roles.

11. Part four of this chapter presents a summary review of the major points in the five topical chapters. The status characteristics, major issues, and options from the economic and financial analysis, educational management, and EHR subsector chapters are highlighted.

12. Chapter 1 concludes by listing of the major conclusions of the Review and identifying the key subsector options for Mongolia to take into account as it continues to reform its education and training activities. The reform of the EHR sector must consider both the immediate need to establish priorities to respond to the continuing economic difficulties and the longer term need to prepare Mongolian children, youth, and adults for the needs of the society and economy of the next century. It is in this balanced context that the sector review options were selected and are now presented.

The Nature of the EHR Sector Review

The subsequent chapters of this Review are as follows:

2 - Economic and Financial Analysis
3 - Educational Management
4 - Pre-School, Primary, Middle, and General Secondary Education
5 - Higher Education
6 - Vocational-Technical and Nonformal Education.

The structure of this chapter was described above. Chapter 2 details the economic and financial context of the EHR activities in Mongolia. Topics will include the current Mongolian economy, national fiscal capacity, manpower conditions, and the costs and benefits of EHR expenditures. Chapter 3 reviews the context for educational management. The discussion emphasizes management structures and systems in Mongolia, issues of organizational effectiveness, personnel, information availability and effectiveness, administrative and financial control systems, and the Mongolian institutional capacity for management training.

13. Chapters 4, 5, and 6 deal respectively with the EHR subsectors of kindergarten to grade 10 (K-10) education, higher education, and vocational-technical and nonformal education. Each of the three EHR subsector chapters is divided into three major sections: Status, Analysis, and Options. The Status section discusses these issues:

- Trends in Enrollments and Number of Institutions
- Teachers
- Curriculum and Instructional Materials
- Administration
- Facilities and Equipment
- Costs and Financing
- Evaluation of Quality and Effectiveness

In the analysis section each subsector will be examined in terms of:

- Current and Projected Needs
- Existing Policies
- Existing Plans
- Constraints on Reform and Improvement
- Specific Analytical Topics (equity, internal efficiency, and external efficiency).

The subsector chapters conclude by presenting issues-oriented options for reform and improvement of the subsector given the needs, existing policies and plans, and the nature of constraints faced by EHR institutions and systems.

Basic Concepts

14. Three major sets of analytical concepts are used in the summary analysis of the individual EHR subsectors and of the overall sector. These are **equity, internal and external effectiveness, and internal and external efficiency**. *Equity* refers to judgements about the fairness with which EHR opportunities are provided to individuals and groups. The major equity issue for Mongolia appears to be the inequality in access and quality between the urban and rural areas and among the "aimags" (provinces). This equity gap may well be increasing as a result of the financial constraints imposed on education and training as part of the requirements of budgetary reform in response to the aggregate economic recession. Without proper policy safeguards, the reforms in the EHR sector (for example, the reduction in upper secondary grades in many rural schools and the imposition of boarding payments for one-half of food costs) may be expected to aggravate these existing urban-rural inequalities. Also, variation among rural areas is a topic worthy of detailed examination as are income and social class differences. The latter two inequities are more difficult to document given the limited availability of Mongolian statistics on educational participation and achievement by income or social class.

15. A special equity concern in many societies is gender equity;

in terms of educational access and retention the Mongolian system has an enviable record. However, it is necessary to determine whether achievement or program selection (especially in vocational and technical areas) represent a systematic pattern of inequality for women. Finally, the employment opportunities for women will be examined to determine if the gender equity apparent in the EHR system is translated into equitable employment opportunities for female graduates.

16. Equity assessments will be made in terms of participation but also as measured by access to facilities, teacher quality, and availability and use of instructional materials. Where possible, indicators of funding per student will be provided. A special topic will be the equity of access to pre-primary education. This has been a commonly available alternative in Mongolia but now, because of fiscal reductions, may become more restricted and increasingly limited to urban and more advantaged families.

17. The "effectiveness" of education refers to how well the EHR institutions and systems achieve their own established goals. *Internal effectiveness* refers to the success of the EHR activity in achieving its immediate educational output goals. Such goals include cognitive achievement (reading, mathematics, reasoning ability, etc.), and noncognitive achievement (including both psychomotor <physical> skills and affective change <modification of attitudes, values, and behaviors>). *External effectiveness* refers to the longer-term outcomes of the EHR activity in terms of economic, socio-cultural, political, institutional, and environmental impacts.

18. The internal effectiveness of educational projects can involve a wide range of criteria. While cognitive achievement is often the most common internal effectiveness criterion (and the only one measured by most standardized tests), certain EHR activities may be concerned with effectiveness as measured solely by access, retention, and graduation (attainment measures) or by changes in one of the areas of noncognitive development. Another form of educational effectiveness measure is the aforementioned concept of equity. This criterion may be incorporated within effectiveness analysis by defining a desired effect of an EHR activity as being the achievement of some specified level of equity in learning, attainment, and noncognitive development among individuals and groups.

19. Internal benefits are those directly produced by the activities of an educational program or the desired "secondary results" of the program. Examples of the former are found in activities that produce direct benefits to learners in the cognitive or noncognitive areas. Examples of the latter can be found in activities such as school construction and teacher training programs. The direct effects of the programs simply may be more buildings or increased numbers of teachers and/or better trained teachers. However, there may be no broader educational effectiveness directly produced in such activities unless these outputs are then used properly. The eventual internal effectiveness is dependent upon the program outputs (new\better schools or teachers) contributing to the levels or the equity of learning

attainment, cognitive achievement, or noncognitive development. In such situations the justification for the initial EHR activity is always a derived justification based upon the anticipation that the immediate effects of the EHR activity will increase the desired educational outputs in other programs.

20. The concept of external effectiveness is based on the belief that the educational outputs produced by EHR programs will themselves produce impacts on the larger society. A program can be internally effective and still have no positive external effects. For example, an educational activity could be very effective (even cost-effective) at producing a certain form of learning achievement for participants. However, if there is no beneficial economic, socio-cultural, political, institutional, or environmental impact from such cognitive achievement, the project has no external effectiveness. For example, even if a program produces machinists inexpensively, there still must be a need for machinists in the immediate or future market, or some other beneficial effect from this training, before the training can be considered externally effective. A program can be externally effective only if it is internally effective; however, internal effectiveness does not assure external effectiveness. Internal effectiveness is thus a necessary but insufficient condition for external effectiveness.

21. The basic analytical structure proposed here for the EHR sector review is efficiency analysis. Efficiency refers to the least-cost means of achieving a specified objective or the maximization of objectives given a specified level of costs. Efficiency is the most generic of all EHR criteria. It includes costs and benefits and the monetary and nonmonetary components of each. Internal efficiency refers to the least-cost production of attainment levels or cognitive or noncognitive changes in participants and can be related to changes in inputs (measures of resource availability) and processes (measures of resource use) when it is not possible to measure outputs directly. External efficiency encompasses the least-cost production of the full range of educational impacts: economic, socio-cultural, political, institutional, and environmental. While the time and data limitations on this review do not allow for extensive calculations of efficiency indicators, the efficiency criterion will inform all of the analysis which forms the basis for identification of issues and selection of policy and practice options.

The Derived Demand for EHR Investments

22. Increasingly, policy analysts and project designers and planners have been under pressure to justify investments in education and training, not in terms of direct educational outputs, but rather by means of the effects of the educational outputs on larger societal outcomes such as economic performance (employment, wages, and productivity), social change (attitudes, values, and inclusion of disadvantaged populations), or political development (values, participation, and an informed acceptance of political legitimacy). In the terminology discussed above, there has been a shift from a concern with internal efficiency (the production of educational effects

relative to costs) to external efficiency (the production of societal effects relative to costs).

23. Some advocates of EHR programs have seen this shift as a threat to financial support for education. Such individuals and groups oppose any challenge to the concept of education (or at least basic education) as a foundational human right. Such concerns are largely misplaced; in fact, greater evidence of the ability of EHR activities to promote larger societal purposes can protect the sector from erosion of present funding and serve as a basis of larger funding when the aggregate economic conditions permit. One must recognize that EHR programs and projects increasingly are in a very competitive situation, both relative to other social sector activities (notably health and nutritional concerns) and to larger societal initiatives in the political, economic, institutional, and environmental domains. To provide evidence of an EHR activity's ability to facilitate development in any one of these domains -- to be an instrumentality rather than an end in and of itself -- is to strengthen the EHR sector's ability to serve its more traditional functions of individual development and social inclusion.

24. The list of potential economic benefits from EHR activities can be quite extensive. The most critical would appear to be the following: increased employment and earnings, enhanced general productivity, improved consumption behavior, facilitation of cost reduction or revenue enhancement in the private sector, improved fiscal capacity (through increased revenue and/or reduced demands on social services), and promotion of intergenerational effects in terms of better social, ethical, and economic attitudes, motivation, and behavior among children, youth, and adults.

25. The *political* domain's *effects* can include specific political values and attitudes as well as more general changes in the way individuals or groups participate in the political process, development of a belief in democratic structures, adaptation to a rule of law, and evidence of an acceptance of the political legitimacy of the existing system. The last two effects can be critical in creating a level of political stability sufficient to allow economic and other effects to occur. Other political effects include identification with the nation and development of common beliefs. All of these effects will be valued differently by different individuals or groups. In fact, political effects are rarely objectively bad or good; the classification of a political effect basically depends upon an individual's own political values and goals.

26. *Social effects* relate primarily to the impact of EHR activities on group status or mobility and collective welfare. The extent to which social inclusion (opportunities for the poor, the handicapped, and other disadvantaged groups) and participation are encouraged by Mongolia will determine the value of these benefits. A belief in the possibility of individual and group mobility can be an important determinant of social (and thereby national) peace and stability. Education and training are powerful vehicles for promoting such increased inclusion, participation, and mobility.

27. *Cultural effects* include the transmission of values, beliefs, and traditions within society. At this time of a shift in Mongolia to a democratic and market based society, the question of values becomes an even more critical component of the EHR curriculum. Too often, individuals confuse free markets with the end of personal responsibility and democracy with the end of legitimate functions of the central and local governments. It is a key responsibility of the EHR system to help promote the values and understandings that will help both government and individuals fulfil their responsibilities under the new Mongolian society.

28. The role of language is an especially critical area of EHR impacts on the culture. The acceptance or encouragement of specific languages and other cultural forms (such as the traditional Mongolian script) is, again, a topic that lends itself to both subjective and objective debate.

29. The effect of EHR activities on the institutional domain has not been as closely studied as, for example, economic, political, or social impacts. The major forms of institutional effects include improvement of institutional structures, enhancement of personnel capacities (not by training but by creating organizational structures that facilitate the use and further development of these capacities), encouragement of cooperation and coordination among development-related agencies or institutions, expanding policy dialogue and promoting an environment for administrative reform, and strengthening informational resources and utilization to promote better decision making.

30. Finally, recent years have seen an increased focus on environmental effects of EHR activities. Even with this recent emphasis, this remains the least discussed domain of EHR effects. There are three major forms of environmental effects: the promotion of environmental consciousness and action; the changes in energy utilization resulting from EHR programs; and the heightened demands on community facilities (e.g. roads, water, sewerage) because of EHR activities. It is important to note that the energy and community facility effects can be negative; these concerns speak to the need to design EHR activities to minimize these potential "costs" while promoting other positive effects, including instruction that alerts students or trainees to critical environmental issues.

Potential Benefits of the EHR Sector Review

31. Any EHR sector review's description of the status of the sector and its identification and analysis of key issues and options is dependent upon the availability and quality of the information base and the willingness of EHR administrators and practitioners to share their expertise and insights. When, as with this review, the work is conducted in collaboration with individuals from outside the society, local counterparts and experts must play an important role in identifying errors of fact or inference and in questioning the applicability and results of the analysis. An EHR sector review will

rarely identify for local experts a lot of issues of which they have not already been aware. What it can do is to bring together, in a systematic structure, much of the information that many different individuals already know and present it in a single document.

32. Only rarely does an EHR sector review resolve major questions of policy; however, it can assist in defining and clarifying these issues so that the debate about them can proceed more efficiently. An effective EHR sector review helps to separate fact from opinion and data from inference. It promotes data-based discussion while clarifying the limits of data and the requirement for judgement and dialogue.

33. The comprehensiveness of the EHR sector review is one of its strongest assets. The review analyses the EHR system as a set of subsectors, each of which is responsible for promoting broad sectoral objectives. By emphasizing the complementary of subsector activities, the EHR review can help promote greater systemic efficiency and prevent the sector from devolving into a fragmented confederation of competing subsectors that fail to fulfil their responsibility to promote the larger developmental interests of the society.

34. A special benefit exists for the Mongolian EHR sector review because of its timing. The nation is in the process of a difficult and often frustrating transition to a democratic and free market society. The structural adjustments that are a necessary part of this transition can have disproportionate impacts on the EHR sector if the sector's key role in the transition is not carefully articulated. Serious damage to the present education and training systems can cause a decline in the public acceptance of the structural adjustment. Both EHR reform and aggregate economic adjustment are necessary; the challenge is to find a means to harmonize their processes and their effects. Education, with health, is the most visible symbol of government's reality to the common citizen. A dramatic reduction in these educational services can lead to a disaffection for the larger reforms of which these reductions may be a necessary part. The government must plan and communicate the EHR transition with the same care taken with the macroeconomic reforms. The public must be informed why the changes are necessary, what alternative safeguards are being implemented, and how long the reform process is expected to take. Such "social marketing" of the reform is especially necessary in Mongolia where the memories of a strong, well-financed EHR system are very fresh.

THE MONGOLIAN CONTEXT FOR EHR DEVELOPMENT AND REFORM

35. In this section the geographical, historical, socio-cultural, and political contexts for EHR activities in Mongolia will be presented. The economic context is not presented here because a full discussion of economic and financial issues is presented in the later summary of Chapter 2. This section will provide only brief general information on the other contexts; later chapters will deal in more

detail with how these contexts impinge on the operation of the economic and management systems and on the three EHR subsectors considered here.

Geography

36. The nation of Mongolia is landlocked between China in the south and east and Russia in the north. The country includes almost 1.6 million square kilometers in area; with a population of only 2.2 million, this yields an extremely low population density of approximately 1.3 persons per square kilometer.

37. The three major regions of Mongolia are the southern desert (the Gobi), the central steppes, and the northern forested zone (only about 10 percent of the landmass). While largely arid, the middle region of the Gobi is able to produce sufficient grass for the grazing of livestock (including some horses but primarily sheep, camels, and goats). The steppes consist largely of rolling grasslands and it is here that the raising of the horses, for which Mongolia has been famed since the early 13th Century, are raised. With an elevation that averages 1580 meters (the highest peak, Altai Nuruu, is 4734 meters high and has a permanent glacier), Mongolia is one of the highest countries in the world. The lowest areas are to the south and east. This cursory summary, however, disguises the substantial variation that exists within each region, often over an area of only a few square kilometers.

38. Mongolia rests on the same approximate latitude as Switzerland, Hungary, and central North America. However, its altitude, its distance from any sea or ocean, its size, and its internal variety make it a truly unique geographical zone. This uniqueness is reflected in its weather and climate, both of which are subject to great extremes. Five climate zones exist; from north to south these are the humid, moderately humid, moderately arid, arid, and dry zones. The same general zones will have a normal summer pattern of temperatures respectively of very cold, cold, temperate cold, temperate warm, and warm. Again, these "patterns" do not properly suggest the large variations that exist because of locational differences of contour, structure, and altitude. Also, within one location, the variation in temperature and humidity within one day can often be substantial.

39. Mongolia is a country blessed by extensive deposits of mineral resources. Deposits of ferrous, non-ferrous, rare, precious, and lighter metals are all being prospected. Unfortunately, the transportation and energy constraints of the present infrastructure greatly limit efficient exploitation of these resources. In economic value, the most important economic minerals are copper, molybdenum, fluorite, coal, gold, and rare elements (e.g. beryllium, lithium, and zirconium). Mongolia has no significant deposits of oil and the coal deposits are largely brown and coking coal (which can pose environmental problems).

History

40. By the time the Mongolian nation came to the dramatic attention of Europe in the early 13th Century, it already had a long and noteworthy history. The original settlers of the Gobi region have been traced through archaeological findings to approximately 200,000 years ago. Chinese manuscripts from the 4th and 5th Century BC refer to the peoples living in what is now Mongolia. The horsemanship which was to serve the Mongolians so well under Chingis Khan was already evident to the Chinese who fought recurring battles against them. The Great Wall (built to keep out the feared Mongolian invaders) failed to restrain a Mongolian invasion at about 200 BC that reached to the Yellow River before it was turned back.

41. For the next 900 years the internal situation within Mongolia underwent frequent change as tribal unions and nomadic states failed to create a lasting stability. The Ugyurs and Tang Chinese invaded Mongolia in 744 AD and the Ugyurs controlled Mongolia (including the Inner Mongolia region now part of China) until displaced in 840 AD by the Kirghiz. By the beginning of the 10th Century, the Kitans (Mongolians from an area now part of northeastern China) had established control in Mongolia. The Kitans were in power until 1122 AD when the Jurchen (precursors to the Manchu dynasty), allied with the Chinese, defeated them.

42. During these recurrent exchanges of control, the Mongolians themselves continued as little more than a set of clans which were more concerned with differences with each other than with the external ruler of the moment. With the birth of Chingis Khan (the title means "universal king" - his birth name was Temujin) in 1162, Mongolia began a new direction. By the age of twenty, Temujin had survived the internal clan warfare of his time to become head of the Borjigin Mongol clan and, seven years later, was named Khan of the Hamag Mongol.

43. Through a process of well articulated administrative and military procedures to promote loyalty and effectiveness, Temujin advanced to a position where, in 1206, he was recognized by the title of Chingis Khan. By the time of his death the Mongol Empire reached from the Caspian Sea in the West to the city of Beijing (established by the Mongolians as a capital). Chingis Khan's son Ogedei attempted to continue the empire's expansion in the west but his death in 1241 led to a retreat from Poland, Hungary, and Moravia to the Volga. Chingis Khan's grandson, Kublai Khan, eventually came to power in the east and focussed his attention on conquering the Chinese. He became the first emperor of China's Yuan dynasty and ruled until 1294. During the Yuan dynasty period, the extent of the empire was greater than that of any other nation in history. However, following the death of Kublai Khan, the empire fragmented quickly and the Yuan dynasty itself was replaced in 1368.

44. The next five and one-half centuries saw Mongolia dominated by internal dissension and external influence, especially that of the Manchu. A nationalist spirit continued, however, and in 1912 with the success of the Chinese rebellion against the Manchu, the Mongolian

people, who in 1911 had issued their own declaration of independence, attempted to institute a theocratic government. Unfortunately, the Chinese refused to recognize this. Until the Russian Revolution of 1917 the Mongolians were without an ally and caught between Chinese, Japanese, and Tsarist expansionist policies. The Bolsheviks reversed the Tsarist policies and, in return for assistance in fighting White Russian forces that had fled into Mongolia, became an advocate for Mongolian independence and sovereignty.

45. On 11 July 1921 the People's Government of Mongolia was declared. A single party, the Mongolian People's Party, was instituted and held power until 1990. On 26 November 1924 the Mongolian People's Republic was declared and Mongolia became the world's second communist country. While Mongolians suffered the purges and terrors that reflected the Stalinist period in the Soviet Union, it gained economically and socially from its close ties with the Soviet Union. In 1939, when Japanese forces invaded eastern Mongolia, a joint Soviet-Mongolian force defeated them. The ties to the new socialist states of Eastern Europe following World War II enabled Mongolia to revive its economy after 1945 and to begin expansion of health and education services. The eventual Sino-Soviet tensions increased Mongolia's strategic importance to the Soviets and led to the receipt of substantial economic and technical assistance.

46. With the onset of perestroika and glasnost in 1984, a period of challenge began for Mongolia's political and economic structures. Having been shielded by their patron from the worst effects of the command economy structure, the next seven years were to see the loss of trade relationships, cultural associations, and the recognition that a system that had appeared to work so well was in fact almost totally dependent on external support to continue. With the fall of the Soviet Union in 1991, that external support disappeared and the bureaucratic and financial inefficiency of the command system became graphically clear.

47. As was noted above, this history is well known to Mongolians who take justified pride in their nation's past. Those new to Mongolia must be aware, however, that to many Mongolians some of the events of the last few years are much less clear. The command system was not abandoned because of a long period of declining effectiveness as was the case in the Soviet Union; rather, there was an abrupt transition from a command system that appeared to work to a nascent market system with emerging democratic institutions that cannot provide all the services people became accustomed to under the earlier society. In the EHR sector this manifests itself as a reminiscence of "how things were before." The necessity for reform, as well as the manner of it, will need to be explained to the population if there is to be a successful transition to the new Mongolian society.

Socio-Cultural Context

48. The Mongolian population in China (approximately 3.5 million) and in Russia (.5 million) substantially exceeds the 2.2 million

Mongolians now living within Mongolia's recognized borders. Within Mongolia itself, 20 different ethnic groups exist as well as substantial but unmeasured numbers of individuals of mixed ethnicity. The Halhs constitute slightly in excess of three-fourths of the total population. The next largest ethnic group is the Kazakh (5.3%) followed by the Dorvod (2.8%) and Bayad (1.9%). A small Chinese-Mongolian population exists.

49. Table 1-1 presents the current demographic statistics for Mongolia by gender, location, and age group for 1989, 1990, and 1991 (with total and gender values available for mid-1992). Table 1-2 provides frequency distributions for the data in Table 1-1. For example, the percent female and the percent urban have remained stable since 1989 at 51.1 percent and 56.0 percent respectively. The more interesting patterns of change over time occur in the data for age groups.

50. Mongolia has a very young population. In 1989, children under 14 totaled 855,200 or 41.9 percent of the total. Under the socialist society Mongolian families were provided financial subsidies and incentives to have children. Childless families were assessed additional taxes. The result was a high population growth rate and the above evidence of a youth dominated population. The pro-birth incentives have now been abandoned and births per thousand have dropped from 36.5 to 33.1 just between 1989 and 1991. As Table 1-1 indicates, both urban and rural births are now declining; however, once the current under-14 age cohort reaches child bearing age another substantial population increase may occur. The legality and use of contraception may help contain this, especially in urban areas. However, in rural areas the privatization of herds has increased the economic value of children as providers of inexpensive labor and this may encourage the continuation of large families there.

51. Tables 1-3 and 1-4 present projections of the Mongolian population. In Table 1-3 the data is for end-of-year totals and mid-year averages, for both all people and for citizens only (the latter are about 98.5 percent of the total). Other indices listed are for births per 1000, deaths per 1000, and the average increase. The years covered are 1991 to 1996. Over this time period the population is expected to increase 278,900 or 12.75 percent of the 1991 level. The number of Mongolian citizens is projected to increase by 268,300 or 12.37 percent over the same period. Births per 1000 are anticipated to decline from 33.0 to 28.9 while deaths per 1000 drop slightly from 8.8 to 8.4. These projections suggest a decline in the average annual population increase from 2.4 to 2.0. While these projected declines may not be fully realized (the assumptions appear optimistic even given the effects of the economic recession), it does appear that aggregate population growth will moderate until the currently large youth cohort reaches the child bearing years.

52. Table 1-4 provides longer term projections of population (1995, 2000, 2005), both in 1000s and in relative size between each of the five year periods. The under 16 age group is expected to grow at a slowing rate (15.3% for 1990-1995 to 7.7% for 2000-2005) while females

(age 16-55) will also slow in growth rate but remain higher than for males (16-60). The gap between female and male population growth rates will, in fact, expand over the projected period. Older females will continue to outnumber older males but the latter will be increasing at a faster rate over the fifteen year period covered in the table.

53. Much of the culture and tradition of the Mongolian population originates in the lifestyle of the "ard" or herdsmen. The ubiquitous gers used by the herders have become the residence of choice for many Mongolians. These collapsible tents of felt and canvas are wonderfully adapted to an environment where wood and bricks are scarce and mobility is valued. The latter characteristic is a product of the nomadism encouraged by the dependence on herding and the harsh and variable climate. The horse remains a very powerful symbol of the strength and independence valued by the Mongolian culture.

54. The Mongolian language is an ancient language and is part of the Mongolian group of the Altaic family. The modern form of the Mongolian language developed after the 1921 revolution and was based on the Halh dialect. The written form of the language has undergone many changes and evolutions. It is one of the oldest written languages in the world. The "old" Mongolian script, now being reintroduced into schools and government use, is believed by some scholars to have originated in borrowings from the Sogdians around 1000 AD. The script is written from the top downwards and from left to right and is composed of 26 letters. This script is sometimes referred to as Ugyur script based on the belief that the Mongolians borrowed the script from the Ugyur who themselves had earlier borrowed it from the Sogdians.

55. In 1941 a Cyrillic script was introduced consisting of 35 letters, two of which are added to the Russian Cyrillic to account for unique Mongolian language sounds. While this shift was rationalized as necessary to facilitate the assimilation of modern foreign words, this justification is not accepted by most linguists. Following the political changes of 1990, Old Mongolian script is making a return. This has posed problems for those parents and professionals who grew up in the period when the Cyrillic script was the only one taught and used.
To deal with this problem, adult education activities will be an important part of the implementation program for the script.

56. The most common religion in Mongolia is Lamaism (the Yellow Sect of Tibetan Buddhism). Lamaism evolved from Mahayana Buddhism in Tibet in the 7th Century and recognizes the supremacy of the Dalai Lama. Lamaism replaced shamanism in Mongolia during the 16th Century. Initially, the 1921 government did little to discourage religion in Mongolia. However, in 1924 the government prevented the naming of a new religious leader and followed in 1929 by seizing some church properties. The harassment continued until 1937 when a deadly purge began against the monasteries. Religious worship remained officially outlawed until 1990. Currently, Mongolia is undergoing a modest religious revival.

57. The only significantly large religious minority is the

Muslims who number approximately five percent of the population. These are primarily Kazakhs living in Mongolia's far west; they are members of the Sunni Muslim faith.

58. Both sport and art are important parts of Mongolian life. Horseback riding, wrestling, archery, and modern international games such as football or basketball are popular for both participation and for spectators. Music, dancing, and painting dominate the art scene with examples in each area of traditional and modern forms.

Politics

59. Mongolia is in the midst of a transition from single-party rule to an energetic multi-party democracy. However, the results of the 1992 elections provided the Mongolian People's Revolutionary Party (MPRP - the former Communist party) with all but five positions in the parliament (Great Khural). This reflects the aggregate ambivalence in Mongolia to the changes of recent years and the reluctance to identify the cause of the current economic problems with the policies of the pre-democratic government. In fact, some Mongolians appear to blame the reforms for the economic difficulties; a failure to separate concurrency from causality.

60. During the pre-democratic period of the MPRP's leadership, the party served both as a political and administrative body. Membership in the party carried political and social advantages; as a result, membership in the MPRP did not necessarily imply acceptance of the official ideology of the party. Since 1990 the MPRP has lost some members but the large majority remain and the party leadership has redefined the party's position so that its policy on the reform is not much different than that of the other parties. The MPRP's candidates for the Khural in 1992 were popular and well known individuals and this helped greatly in their campaigns. Internally, the MPRP contains a wide variety of political orientations and it makes no attempt to project a single narrow ideological position.

61. From 1924 until 1990 no contested elections were held in Mongolia. A ten person politburo was appointed by the MPRP's Central Committee which itself was "elected" at the National Party Congresses held once every five years. The politburo shared authority along with a Council of Ministers (over 50 ministries existed); the single most important authority, however, was the Secretary-General of the MPRP. This political structure was heavily influenced by the Soviet Union which oversaw the acceptability of key officials and which provided large numbers of consultants and technicians who served in critical technocratic and administrative positions. In addition to the loss of trade and subsidies, the demise of the Soviet empire also cost Mongolia a serious reduction in well-trained and experienced technicians and managers.

62. With the acceptance of the new Constitution in 1992, along with guarantees of personal and political rights, the legislative structure of the government was reorganized from a bi-cameral to a uni-

cameral system. Now, the Great Khural has 76 seats (down from a cumbersome but more participatory 430), and is the sole source of legislation. Under the previous system, it was possible for the Council of Ministers to enact "Cabinet laws" by decree. The members of the Khural serve a four year term and elect the Prime Minister who is the senior administrative and political figure in the government. The Khural has a set of standing committees (e.g. the Standing Committee on Education, Science, and Culture) and also has the authority to establish ad hoc units (such as the Higher Education Reform Commission) which are of a quasi-official status only. The "Cabinet Law" of 1993 (not to be confused with the previous administrative edict system called Cabinet laws) attempts to define the rights and responsibilities of each of the 15 ministries created under the new Constitution.

63. A president is elected by direct popular vote in the year following the elections to the Great Khural. The position of President is largely ceremonial but is presently occupied by the former head of the MPRP who ran as an "opposition" candidate. His election, however, may be as much a result of conservatism, i.e. a desire to stay with a known personality, as of any desire to oppose the majority party.

64. Local government consists of 18 aimags and of individual somons (counties) within each aimag. There are over 350 somons (new somons are being organized at the present time; for example, from the former state farms) which are themselves divided into "bags" (over 1000 exist at present) which consist of 50-400 families each. While approximately one-half of Mongolia's population is involved in agriculture, and 20 percent are classified as nomads, the somon and bag system allows for each family to be identified and tracked as to general, and sometimes very specific, location. The people within each somon elect deputies who represent them in electing the aimag governor and mayors. Ulaanbaatar, Edernet, Darkhan, and Choir among Mongolia's cities are defined as autonomous municipalities and do not belong to any aimag. These municipalities have mayors who are considered to be of equal status with aimag governors.

65. Government financial regulations give great power to the aimag officials to reallocate funds delivered to them directly from the Ministry of Finance. In the past, funds came to the local areas under the categorical control of the financing ministry (Education, Health, Agriculture, etc.). The new system has effectively removed the Ministry of Science and Education from any financial control of K-10 education at the local level. The result is that many local aimags are ignoring government guidelines of 20 percent spending on education and reallocating to infrastructure and other expenditures. Whether this is good or bad depends on one's attitudes about localization of control and one's faith in the ability and experience of local officials to make decisions that appropriately consider national and long term priorities. In return for greater local authority, aimags are expected to generate and manage their own finances, primarily through retaining local collection of national taxes; to date, this self-sufficiency has been realized only in the large cities and a few relatively advantaged aimags.

66. The political situation appears remarkably stable for a young democracy facing such a difficult economic environment. Ten political parties exist; in addition to the MPRP these are (officially, all precede their name with "Mongolian"):

- Social Democratic Party
- National Democratic Party
- Green Party
- Religion Democratic Party
- People's Party
- United Party of Herders and Farmers
- United Party of Private Owners
- Party of Independence
- Bourgeois Party

In the 1992 elections, the National Democratic Party won four seats and the Social Democrats one. Since the election the former National Progress Party and the National Renaissance Party were merged with the National Democrats. The major challenge to the MPRP is to reconcile the agreements on reform negotiated with the International Monetary Fund and other international agencies with the conservatism of some of its own party cadres and of the rural populations who are the primary base for the party's support. The opposition parties (led by the National Democrats and Social Democrats) are attempting to reduce the fragmentation that hurt them in the last parliamentary elections and to agree on coalition candidates. If this can be done, the MPRP will find itself more seriously challenged than was the case in 1992. The cultural tradition of rule by consensus provides the opposition parties with more influence than their numbers alone would suggest.

THE ENVIRONMENT FOR POLICY AND PLANNING

EHR Structures

67. Figure 1-1 presents a description of the Mongolian system of schools and institutions from preschool (kindergarten) to postgraduate levels. (For comparison Figure 1-2 indicates the structure as it existed in 1990; this latter table does not indicate levels of participation, however.) The structure of education at each level will be reviewed in some detail in the individual subsector chapters. The structure of EHR activity in Mongolia is both ambiguous and evolving. It is ambiguous because it often is difficult to distinguish general academic education (kindergarten and grades 1-10) from certain specialized vocational and technical programs which include content also found in grades 6-10. Similarly, at the postsecondary level it has become difficult to classify with ease the distinctions between universities and training institutes which often overlap in sequence and curriculum coverage. The grade 1 to 10 system is evolving in that the education system is changing from a 4-4-2 to a 6-2-2 structure, the Ministry of Science and Education is attempting to merge the formerly independent research institutes with the higher education institutions responsible for teaching in the same subject areas, and the erosion of

enrollments and the closing of 9th and 10th grade programs in many schools reshape the face of Mongolian Education.

68. Figure 1-1 suggests high initial participation rates in elementary school; however, dropout rates are increasing for these grades and the near universal participation that has existed in education through literacy and numeracy will no longer be the case unless nontraditional means for delivering formal education, or nonformal alternatives, are found. In rural areas, attrition is increasing rapidly in lower secondary (grades 7-8) and upper secondary. For lower secondary, this appears to be the result of an increased skepticism on the part of students and parents about the potential benefits as school quality declines and the privatization of herds makes the immediate labor of these youth even more valuable to their families. These same factors are aggravated at the upper secondary level by the closing of many grades 9-10 which means the students who wish to continue must go to more distant locations and use boarding facilities. Coming simultaneously with these other disincentives, the new proposed requirement that families provide one-half of all meat for dormitory students could be expected to further reduce the number of upper secondary students.

69. The decline in some vocational-technical programs may be attributed to the reduced job opportunities perceived by many potential students. Parallel reductions in enrollments have not yet been seen in the higher education (baccalaureate degree granting institutions) subsector. Even with the proposed imposition of tuition in Fall 1993, applications remain high; however, the true market test will come when students actually have to pay fees (the tuition proposal has already been postponed once from 1992 to 1993).

70. The enrollment picture is one of sharp contraction at the K-10 educational level, enrollment fluctuation at the vocational-technical levels, and relative stability at the higher education institutions. As later discussion in the subsector chapters will indicate, the greatest decline in educational attainment is occurring among rural males. These conditions of enrollments and concern with maintaining the quality of education will condition the discussion of EHR policy and planning which follows here.

Goals and Structures for Policy and Planning

71. Under a command society, detailed policy decisions are made at the top of an implementing hierarchy and then successive layers of the bureaucracy are expected to design and enact plans to see that these policy decisions are translated into reality. Prior to the onset of reforms in 1991 in Mongolia, this was the case for education. Decisions were made at the ministry level or above and it was the job of central and local staff to see that these decisions were planned and implemented. Although this system often failed to function effectively (inadequately trained staff, communication and transportation difficulties, and the difficulty of imposing rigid rules within a very heterogenous set of local environments were common constraints faced),

the record of EHR implementation is largely a positive one. Whether this former system of policy\planning could have succeeded under the new demands of the market economy and enhanced local participation in decision making is debatable; what is certain is that the changes of the last three years have totally reshaped the responsibilities of the education ministry (now the Ministry of Science and Education - MOSE) from that of an implementing agency to one whose goals and objectives need careful discussion before any major structural reform or large scale retraining of personnel takes place.

72. The government's macroeconomic policy is to stop the economic decline and to stabilize economic conditions within the next two years taking into consideration the real situation within Mongolia, the peculiarities of the transition period to the market economy, and the nature of the external environments that affect Mongolian economic success. The national priorities are to be improved infrastructures for food and other agricultural production, mining, and the processing and industrial production activities. Education is to be recognized as a "social treasure." Children will have a primary education at government supported schools and all citizens under 17 will be provided with an opportunity for basic education.

73. Planning goals for education include the reform of the education system by revision and modification of its content and training methods to meet the social needs and individual interests and talents of learners. Universal education in Mongolian script will be organized. The qualifications, working conditions, and living conditions of teachers will be improved. Vocational-technical education will be upgraded to the requirements of the market economy and instructional methods will be raised to international standards. Higher education improvements will be designed to ensure the integration of the institution's research, teaching, and production activities.

74. The macroeconomic plan's educational concerns extend to the encouragement of individuals, institutions, companies, and other enterprises to create or finance educational activities and institutions. The Government will have the responsibility for assisting low income families with the cost of textbooks and other instructional materials. Also meals in kindergartens and summer camps will be provided. These policies will need to be translated into specific plans and, as with all such intentions, these plans will be realized only to the extent that adequate funding exists for the EHR sector.

75. As part of the economic transition reform and of agreements between the Government of Mongolia and the International Monetary Fund, the National Development Board is charged with the responsibility for developing policies and plans to protect the social infrastructure during the period of the transition economy. As part of this process a concept paper on "Development of Social Infrastructures" has been drafted. This document identifies education as "the origin of the nation's future and of social development." It goes on to identify education's purposes as:

- establishing basic and secondary education and vocational education content according to world experience and Mongolia's specific development context;

- creating a reliable system of educational finance to meet citizens' needs;

- providing conditions for equal development of all educational institutions regardless of their form (public or private) of management;

- improving the capacity of educational institutions to engage in independent activities; and

- defining the direction of educational administration and of education-scientific-industrial linkages.

76. These fine goals for education will be realized, of course, only to the extent that actual plans of implementation can be designed and financed. While the social infrastructure paper has several vague proposals for achievement of these goals (e.g. improvement of the mental potential of society), the concept paper does offer several very specific policy directions. These include:

- to provide primary education to all children under 17 years old through secondary schools, and other formal and nonformal means;

- to provide basic education free of charge;

- to encourage payment for vocational and higher education costs by the future employers of the graduates;

- to promote the transition to the principle that schools should provide part of their own financing, especially through enterprise development;

- to render social assistance to the children without parents and from economically disadvantaged families to permit them to benefit from education;

- to link more closely the activities of schools and economic enterprises; and

- to create the legal mechanisms (including reduction of taxes) for encouraging individuals, organizations, and companies to provide financial support to educational institutions.

These proposals have not all been implemented (the last - for tax deductibility of educational contributions - has in fact failed to win sufficient support in the Khural), but they do provide a framework for maintaining a focus on education while making the shift to an EHR system more closely linked to economic requirements of the market and individual responsibility for a greater share of educational costs

beyond the basic education level. The less certain issue is whether the MOSE in its evolving shift from an EHR delivery agency to a policy-accreditation-monitoring agency can play a role in assuring that social interests in education and training are protected even as economic and political needs are being served.

77. Figure 1-3 presents a depiction of the legislative and executive process by which educational law is enacted. The Great Khural is at the top of the process and is supported in its work by the activities of the standing committees (of which the Standing Committee on Education, Science, and Culture is the primary one dealing with educational policy). The Cabinet of Government Ministers includes the heads of the 15 ministries and interacts with the standing committees concerning proposed legislation.

78. The MOSE should be, of course, the key ministry responsible for policy in the area of education and training. The ability of the MOSE to fulfil this role and the willingness of the Council of Government Ministers and the Great Khural to respond to it positively has not yet been determined. In theory, the MOSE should serve as a nexus where information and opinions from other Ministries are collected and assimilated. The Ministry of Labor and Population Policy is an important agency in this regard but any ministry may make a contribution on EHR issues related to their sector or the needs of their own staff.

79. The MOSE should also serve as the primary conduit between individual institutions and the higher levels of the policy making process. There may be difficulties in serving this role if the shift to local control of K-10 education reduces the ministry's knowledge of and concern with this level of education. Also, in many countries, the postsecondary vocational-technical and higher education institutions are often not satisfied to have the ministry represent their view. In Mongolia this may mean the Universities and Colleges Rector's Council, the Council of Vocational and Specialized Secondary Schools, or the Association n of Private Institutions may prefer or even demand a direct role in approaching the Khural or the Council of Government Ministers about EHR policy. Finally, the MOSE also should be a link between the private sector and quasi-public organizations (such as the Commission on Higher Education Reform) on the one hand and the legislative and executive agencies on the other. The pending question is what can the MOSE do for these various institutions or groups that they cannot do for themselves.

80. As to planning responsibilities, the future role of the MOSE is equally unclear. Prior to 1991 the planning officials prepared a draft educational plan which was submitted to the State Commission for Economic and Social Development. The State Commission reviewed the plan, requested clarifications and details, and then combined the education plan with those from other sector ministries. From this process emerged the five-year plans which were submitted to the Khural for further debate and approval. Once approved these five year plans had the force of law. Modifications could be proposed during the development of the five-year plan but the planning cycle emphasized the

importance of the approved plan.

81. The education ministry received from the state commission an approved sector plan which had separate sections on basic education and postsecondary education (including vocational-technical at all levels and higher education). The approved education sector plan included recommended budget allocations as well as suggested indicators by which the plan's implementation could be monitored. Institutions and aimags could make plan proposals to the ministry and the ministry was responsible for informing the institutions and aimags of the plan's conditions.

82. In November 1990 the bill "Concept on the Mongolian Educational Development" was approved totally reforming the role of the ministry in the delivery and regulation of the EHR sector. The ministry's former power to direct educational development was further reduced by the passage of the "Educational Law" of 1991. Article 3 of the law states that "education will be under the state sponsorship and control" and Article 13 says "the state authorities shall establish a basic policy on educational issues and the Government implements it." However, this sponsorship, control, and implementation authority does not flow primarily through the MOSE as would be the case in many countries. Rather, Article 7 gives individual institutions the right to regulate the granting of educational certificates and Article 13 goes on to say that "Government agencies in charge of education in cities or rural places will be responsible for managing of educational matters."

83. Figure 1-4 summarizes the relationships between the MOSE and the various local authorities now responsible for EHR activities. Authority and control of the kindergarten and general secondary programs flows from the MOSE, through the cities and aimags to the somon, district, and bag levels. Financing comes from the cities and aimags and can include locally generated revenue in addition to the funds provided by the Ministry of Finance for EHR activities. For postsecondary schools, authority, control, and finance come more directly from the MOSE although cities and aimags are again expected to produce local revenue support for these institutions.

84. Until June 1993 there were MOSE staff posted to the city and aimag level. As many as 6 to 8 persons were responsible for science and education issues depending on the size of the city or aimag. Now a Department of Social Policy exists - with three staff in most cases - which is responsible for health, nutrition, population, and a variety of other social concerns in addition to science and education. Thus, concomitant with the localization of EHR responsibility was the reduction of its relative importance at the local level in terms of staffing and financial support.

85. The general authorities at the city\aimag, somon, and district and lower levels are responsible to:

- outline policy on education for all, in-service and pre-service training, and coordinate activities for implementing policy;

- establish kindergartens and general secondary schools and to modify or close them; and

- appoint school principals and discharge them.

The general duties of these same authorities are to:

- finance kindergarten and general secondary schools (as well as professional schools if located in the city or aimag);

- organize actions that will provide compulsory basic education for all; and

- institute local acts, laws, regulations and to implement the monitoring and evaluation activities and be responsive to central authorities.

Obviously, this creates both serious new responsibilities and new opportunities for local governments. What has not yet been determined is whether any (or all) local governments have the financial, technical, and management skill to fulfil this new role.

86. Article 14 does designate the MOSE as the supervisory agency for issues of postsecondary education and Article 15 says the ministry will approve the model of regulation of educational activities. The MOSE is also granted responsibility for the authorization of new institutions (Article 17) and to register and terminate educational establishments (Article 18). However, even where rights are clearly established for the MOSE, enabling legislation will be needed to clarify these roles and adequate funding will have to be forthcoming for the MOSE to fulfil its planning role. The Cabinet Law of 1993 makes clear the responsibilities of the Minister of Science and Education (e.g. authority over the State Foundation for Training and the Nuclear Energy Commission, determining school establishments, setting the number of teachers, etc.) but does not help define the planning\administrative role of the Ministry of Education and Science.

87. Figure 1-5 presents a model of the MOSE's administrative structure. The Minister of Science and Education is supported by a single Deputy Minister (a second has been proposed to the Khural but not yet approved). Currently, the Deputy Minister is responsible for five departments and one division (Foreign Relations and Cooperation). Three of the departments are related to subsectors (Pre-School and General Secondary Education Department, Postsecondary Education Department, and the Science and Technology Policy Department) and two to Ministry management (the Administration Department and the Economics and Social Welfare Department). The first three departments are headed by Directors General while the second two are led by Directors.

88. The Minister is assisted by the Minister's Council. This body consists of the Minister, the Vice Minister, the three Directors General, the Directors of the Administration and the Economic and Social Welfare departments, the Scientific Secretary of the Academy of

Sciences, and the Rector of the National University. Two "advising" members of the Council are the Director of the Institute for Educational Development and the Rector of the State Pedagogical Institute; the secretary to the Council is the Deputy Director of the Administration Department. Within the MOSE the Council acts as an advisory body to the Minister on policy and planning issues.

89. Five quasi-autonomous agencies report to the Minister:

- The State Inspectorate Board
- Supreme Council for Certification of Degrees
- Nuclear Energy Commission
- State Foundation for Training
- Science and Technology Foundation.

These five units are referred to collectively as the "substructure" of the Ministry to reflect the lack of direct control and supervision that exists.

90. Only one formally designated planning officer remains in the MOSE and is located in the Economics and Social Welfare Department. The planning function of the MOSE is so reduced that this role may be adequately filled by this single person. There is no ongoing reporting to the National Development Board (the successor institution to the State Commission). Planning unfortunately appears to be identified with collectivist procedures of the command economy and is not assigned a priority position. In its place, the various units of the MOSE seem to be emphasizing a policy role for the Ministry. Unfortunately, the training and experience of the MOSE does not prepare it for such a role.

91. For policy, and policy analysis must precede policy formulation, to become a central organizing activity of the MOSE, there would need to be a minor reorganization and a rather more major investment in retraining. The personnel in the individual departments or subunits are often quite competent and consistently are knowledgeable about their specialized area of concern. What they often lack, however, is an ability to see their area's policy concerns within the context of the EHR sector or the constraints and opportunities of the larger social and economic transition. Also, they often have little if any training in the basic skill areas of policy analysis such as evaluation, economics and finance, planning and implementation, statistics, or forecasting.

92. For the MOSE to develop a policy analysis capacity in a short period of time (3-5 years) would require two types of training. First, general training on the nature of policy analysis could be combined with debates about current policy issues in the EHR sector. The goal would be to increase general staff awareness of the policy analysis function and the types of data, other information, and forms of analyses that are used. Second, specialized training will be necessary in the skill areas mentioned above.

93. To realize the benefits of this training a minor

organizational change would be required. Policy analysis is an activity which requires the authority to obtain the necessary information and the status to have its conclusions considered seriously. Since many will perceive policy analysis as potentially threatening for their programs (because it asks questions about costs and effects), it can not operate effectively as a unit on the same hierarchial level as the other units of the Ministry. It needs to be situated at the Director General level or above; within the MOSE the most effective placement would appear to be as part of the Vice-Minister's office. From this level the policy analysts would be able to review the proposals of the five major departments and also assist the Administrative Department in serving as a secretariat to the Minister's Council.

94. Given the need to contain current Ministry staffing levels, the proposed Planning and Policy Analysis Unit (PPAU) probably should not exceed three persons initially. The three skill groups for these individuals might be (1) economics and finance, (2) planning and implementation, and (3) statistics and forecasting; these are the special topics most likely to be needed in the current and anticipated EHR policy discussions. It is important to remember that this PPAU is expected to rely on the personnel in the individual operational units or education and training institutions for the details about the policy issues. They are to provide technical expertise in the analysis of the data and information provided and to identify and evaluate options for the Ministry. The PAU would not be a policy-<u>making</u> body; its sole function would be to inform and clarify policy debates for senior Ministry officials.

95. The policy and planning relationships and responsibilities discussed here are still evolving and much remains to be defined. Some of the role definition will come about as part of legislation or regulation. However, in every country the role of an education ministry ultimately is defined by what it wants to do (its goals and objectives) and what it is capable of doing (the skills of its staff and the effectiveness of its administrative structure). This review, and the following EHR master plan exercise, should help in identifying the MOSE's strategic and long term objectives, its need for new and\or upgraded staff, and the structural alternatives that should be considered to improve the MOSE's organizational effectiveness.

External Assistance to the EHR Sector

96. A key determinant of EHR success in the next decade will be Mongolia's ability to recruit external assistance and to use that assistance wisely. Since the loss of large scale investments by the Soviets and East Europeans the EHR sector has struggled to become more self sufficient. While Mongolia has received substantial foreign assistance during the last four years, most of this has been directed to macroeconomic management, infrastructure, and development of a market system. All of these activities have the potential to benefit education and training activities in the long run but more immediately the EHR sector will require greater amounts of financial and technical

assistance than has been forthcoming so far.

97. Mongolia is an active member of several international organizations involved in education, and has subscribed to the Basic Education for All program recommended by various donor and financing agencies at the Jomtien, Thailand meeting in March, 1990. In addition, it has agreements with a number of bilateral programs to provide help to the K-10 education area, most notably Danish International Development Assistance (DANIDA) which has supported efforts to modernize the curriculum, upgrade teacher education, improve educational materials, and improve the quality of life of nomadic families through distance education for nomadic women (through a UNESCO funds-in-trust project). The Danish assistance authorities have indicated willingness to continue help in basic education. This has been supplemented by the help of the Japanese in printing and publishing. The World Bank has done a study on Mongolia's education expenditures and has issued a brief summary assessment of Mongolia's education sector but has not otherwise indicated whether it intends to be involved in the education sector.

98. The University of Pittsburgh in the United States has an agreement with the Mongolian government to collaborate in higher education reform issues, some of which relate to the preparation of personnel for the school systems. This agreement has led to a United States Information Agency-financed exchange of Ministry of Education and higher education officials, including the Rector and Vice Rector of the Pedagogical University, with University of Pittsburgh faculty and administrators to explore educational policy and reform issues.

99. UNESCO, UNICEF, the Asian Cultural Centre for UNESCO, and others have sponsored seminars, workshops and planning studies. UNESCO has facilitated visits by short-term experts under UNESCO's regular program to examine needs in the training of educational administrators. UNESCO's Regional Office for Asia and the Pacific in Bangkok encourages participation of Mongolia in the Asian Program of Educational Innovation and Development. Also, the Asia and South Pacific Bureau of Education, located in Bangkok, has a two-year program of cooperation with Mongolia, and it is sponsoring a seminar and workshop on adult education in Mongolia. The Japanese Embassy has an ongoing program of scholarship support to sponsor both degree studies and educational visits to Japan. Presently, approximately 25 individuals per year receive such support. A number of groups, including the Peace Corps of the United States, the United Nations Volunteers, the Voluntary Services Overseas (VSO), the British Embassy, and a number of teams associated with religious organizations, have become involved in helping various institutions in Mongolia improve their English-language programs. The Bell Educational Trust in Cambridge, England, has drafted six student books and teachers' guides for teaching English at grades 5-10.

16. A number of other organizations are involved in education and training activities in sectors other than education. For instance, WHO and other organizations are sponsoring projects to strengthen health education in Mongolia, provide managerial training for health

professionals, and develop learning materials in the health area. Various projects also exist or are in the planning stage to train or otherwise reach agricultural and livestock breeders with new information and training. USAID support of training is focussed on the needs of the National Development Board, The Privatization Commission, and other macroeconomic and private sector agencies.

100. Pledges for external financial assistance total over $880 million for the 1991-93 time period with the largest support scheduled for 1992 (approximately $383 million of this is for budget support). Japan, the Russian Federation, and the United States are the largest bilateral contributors but 11 other countries pledged more than $1 million for the three-year period. Among the multilaterals, the Asian Development Bank, The International monetary Fund, and the World Bank lead in support.

The following countries and agencies are identified as providing support in the category of "human resource development." It should be understood, however, that this grossly underestimates the actual education and training provided by external agencies because much of their EHR support comes via projects identified with other sectors.

Asian Development Bank	EHR Sector Study and Master Plan
Australia	Distance Education Study
	Scholarships and Training
China	Laboratory Equipment for Education
Denmark	Gobi Women's Project (UNESCO)
	Primary/Secondary Education
European Community	Maastricht Seminar
Germany	Scholarships and Training
India	Cultural Exchange
Japan	Cultural Exchange
	Library Eqpt.- Mongolian Univ.
	Language Lab - Mongolian Univ.
	Personal Computers for Education
	Trainees and Equipment
New Zealand	Mongolia Study Awards
Non-Governmental Orgs.	Save the Children's Fund
UNESCO	TA Programme
UNIFEM	Advancement of Mongolian Women
Sweden	Short Term Training
UNDP	Management Education
United Kingdom	Business English Teaching
	Secondary English Readers

101. An important question that remains to be answered is Mongolia's absorptive capacity for additional external assistance to the EHR sector. The capacity question has two aspects: the management ability to plan and implement the projects and their following activities and the financial ability to sustain project activities once external assistance ends. Mongolia will need to work closely with the assistance agencies to assure that the investment in the EHR sector is in line with its own priorities. Of course, a major goal of this sector review (and of the subsequent master planning activity) is to

help define those priorities and the appropriate roles for external support.

CHAPTER SUMMARIES

Economic and Financial Analysis

102. Mongolia's development into a 20th Century state took place entirely under the auspices of a control economy. Mongolia began the 20th Century as an impoverished feudal state surrounded by threatening neighbors. From 1921 to 1940 was a period of political consolidation and the economy of Mongolia remained largely agrarian and unorganized. Between 1940 and 1960 the abolition of private property, the collectivization of herding and agriculture, and the introduction of central planning all shifted Mongolia into a contemporary socialist state. Planning was a mature reality by 1948 and the central planning system continued to operate until 1990.

103. However, the beginnings of economic reform can be traced to 1986 with a change in the leadership of the MPRP and the concomitant political and economic reforms taking place in the Soviet Union. A variety of reforms instituted between 1986 and 19990 actually promoted greater system efficiency; these included simplification of the central government, improving the profitability of public enterprises through more competitive pricing, and reducing the number of items subject to central planning. The economy remained highly sensitive to the success of the animal husbandry sector which accounts for 60 percent of gross agricultural output. Agriculture, which in the 1950s produced over 60 percent of National Income, now produces only 20 percent. To appreciate its importance, however, one must understand that the sector has a substantial amount of production that fails to enter into official National Income statistics; the sector still provides direct employment for over one-half of Mongolia's population.

104. The present economic crisis has resulted from convergence of three factors. First, Mongolia's capital-intensive, import-dependent, centrally-planned economy became incapable of generating self-sustained growth. Second, external capital flows from the Soviet Union, which had accounted for up to 32 percent of GDP, began to decline and ceased entirely in 1990. Third, the collapse of the Communist block's trade network in 1991 resulted in severe dislocations in Mongolia's external trade, of which over 90 percent had been with the USSR. The seriousness of the situation underlined the need for tight monetary and fiscal policies to effect the necessary reductions in both consumption and investment. This task was complicated by the simultaneous need to restructure macroeconomic policies and institutions for the transition to a market economy.

105. Throughout the 1980s the industrial sector was the largest component of the economy, followed by agriculture, non-material services, and transport. Since 1990 the industrial sector has declined in absolute size. However, since other sectors (and especially

services) declined even more, the proportion of GDP generated by industry actually rose to 41.7 percent. In absolute size, the sector grew by less than 1 percent in 1990, and contracted by 12 percent in 1991 due to lack of foreign exchange and disruption of trade with the Soviet Union.

106. In 1990 agriculture contributed 20.2 percent of GDP. Considering that Mongolia has so much land, this might have been considered a small proportion, though the figure was partly the result of a restrictive definition. As a share of GDP, agriculture increased between 1990 and 1992 (to 34.5 percent). As in the industrial sector, however, this was not a reflection of greatly increased output. Rather it indicated that other sectors, and particularly services, had declined dramatically exaggerating the relative importance of the agricultural sector.

107. Table 1-5 presents a set of indicators of general economic progress for Mongolia for the period 1990 -1992 (the Mongolian fiscal year is January 1 - December 31). These summary data reflect the seriousness of Mongolia's economic problems and the special difficulties of implementing the economic reform program. As Table 1-5 indicates Gross National Product (GNP) per capita has shrunk from $407.0 to 299.2 over the 1990 - 1992 period. Real (adjusted for inflation) Gross Domestic Product (GDP) growth dropped in each of these three years as, of course, did real GDP per capita. Because of expenditure controls required as part of the government's transition policy agreements with the IMF and other international agencies, the deficit as a percent of GDP has been reduced. This has necessitated harsh expenditure cuts given the large drop in GDP.

108. The inflation rate listed in Table 1-5 is difficult to translate because the dramatic "formal" devaluation that occurred with the floating of the Tugrug in fact only recognized the devaluation that had existed already in the informal market. Actually, the performance of the Tugrug in the time since devaluation in May, 1993 has been relatively strong. However, there is no disguising the reality of the inflation for many urban dwellers, especially those who are dependent upon government salaries for support of their families.

109. The other data in Table 1-5 depict an economy struggling to deal with external dependence for goods and international reserves while internally the sectoral growth adjusts to the new market realities of Mongolia. The current accounts deficit has been reduced (indicating improved balance of international obligations) and exports continue to rise as a percent of GDP. Both are positive indicators but the first may reflect the reality that Mongolians are finding it increasingly difficult to obtain hard currency to finance imports. Also, with large declines in GDP, it is easier for exports as a percentage of GDP to increase. The debt service ratio (the percent of export revenue used to pay principle and interest on foreign debt) has declined in part because some debts currently are not being serviced.

110. Since 1991, market reform has continued by stages. In June 1991 gasoline prices were raised fourfold; in October 1991, 18 of the 35 categories with fixed prices were also liberalized. Plans were laid

to deal with most of the remaining 17 categories and to reduce the number of rationed items. By mid-1993 the only remaining rationed items were meat in urban areas and flour throughout the country. The government maintained ceiling and floor prices on some commodities, though had plans to phase out even these measures. Visible inflation was further fuelled by the government's monetary policy. Currency in circulation, the main determinant of base money in Mongolia, grew by an average of 12.8 percent per annum in 1985-90 and by 128.3 percent in 1991. While some increase in money supply was necessary to accommodate the 1991 price adjustments, inflationary pressures were exacerbated by the rapid growth in credit to state enterprises and the private sector.

111. As a result of these activities and pressures, inflation in 1992 exceeded 400 percent. Inflation remained high in the first part of 1993, slowed significantly during the second quarter, but was then again given a major hike by devaluation at the end of May. The current projection for inflation in 1993 is about 290 percent. Monetary policy was tightened during the first quarter of 1993. with the Mongol Bank's lending rates raised to 10-25 percent per month (which was positive in real terms), reserve requirements increased by 42 percent over the level at the end of 1992, and a minimum deposit rate of four percent per month introduced. It is hoped that by the end of 1993 the worst will be over, and that by 1995 prices will be fairly stable.

112. Privatization has been the centerpiece of the government's economic reform strategy since 1990. A stock exchange was opened in 1992 for trading in large companies. To support the private sector, Parliament has considered amendments to the company law, together with anti-monopoly and land laws. The amendments aim to protect shareholders and define the scope of activities of enterprise management and boards.

113. The groups hardest hit by the economic crisis are those in the monetary sector. A large part of Mongolia's rural population is engaged in herding and less influenced by the monetary sector. One 1991 study of herders found that only 70.5 percent of total income came in the form of cash. At that time the herders were working in cooperatives on a lease basis. Since that study was conducted, ownership of most animals has been privatized, and the proportion of total income received in cash has fallen. A significant proportion of trade with and among herders is by barter rather than by cash.

114. The economic crisis has severely damaged national fiscal capacity. The major problems have been loss of revenue from the Soviet Union and decline in aggregate economic activity. Other problems have been that exemptions from taxation have been excessive, and outlays on a number of large projects initiated during the 1980s have had to be maintained. Until the end of 1988, budgetary deficits were fully financed by the Soviet Union; now the government is expected to be self-sustaining although some budget support has been received from international assistance agencies. Traditionally, the main sources (90 percent) of taxation revenue have been turnover taxes and profit taxes on state enterprises and cooperatives. However, a 1991 taxation law reformed the system. The main sources of revenue increase in 1991 were the

turnover tax on petroleum, excise duties, and a windfall gains tax on enterprise inventories. Taxes on personal incomes also became more prominent than before. A taxation reform implemented in early 1993 included a 10 percent sales tax on domestic production and imports, reduction in the scope of customs duty exemptions, reduction in the number of corporate income tax rates from seven to four, and modification of the definition of taxable income to allow deduction of wages and depreciation. To rationalize public sector investment, a rolling three-year program has been prepared with World Bank assistance beginning in 1993.

115. Mongolia's relatively large state budget has been absorbed mostly by current expenditures(78 percent of total expenditures or 52 percent of GDP) during 1980-90. Within current expenditures, the largest item (44 percent) was devoted to social and cultural expenses, which included free food, social security payments, pensions, subsidies, and transfers to households and public establishments. As a result of 1990 changes in the laws on pensions and social security, and the cost-of-living adjustment following the doubling of prices, budgetary payments on this subcategory rose sharply in 1991.

116. Capital expenditures absorbed about 17 percent of total budgetary outlays (or about 10 percent of GDP) in 1975-86. Their share increased rapidly after 1986 because of the government's increased emphasis on housing, education and health facilities, reaching a peak of 23.3 per cent of budgetary expenditures (15.5 per cent of GDP) in 1989. However, with deepening economic crisis and declining public revenue, capital expenditures were cut to 19 per cent of the total in 1990 and 10 per cent in 1991. Further cuts in 1992 and 1993 have been necessitated not only by fiscal crisis but also by shortage of construction materials. One result is that construction of many school buildings commenced in 1989 remains uncompleted.

117. Local governments have begun to exercise a greater fiscal role, particularly on the expenditure side. Local governments are permitted to raise their own taxes from informal markets, hunting, etc., though the scale of revenue which can be gained from such taxes is limited. Much more important is that, although the central government still holds most powers of taxation, local governments have been given increasing responsibility for collecting and using these taxes. In the first half of the 1980s, local governments received about 30 percent of budgetary revenues, but in the second half their share increased to 53 per cent. The increase was the result of a new policy to allow local governments to retain a greater proportion of profits taxes generated by state enterprises in their districts.

118. Government figures show a 1991 budget deficit of Tg 2,688.3 million. Initial figures published in 1993 using preliminary data for 1992 showed a budget that was in balance and a 1993 budget with a surplus. However, these figures were later substantially revised. The two sets of figures are worth noting not only for their intrinsic importance but also to show the difficulties of making budget projections during this time of economic crisis.

119. Expenditures by government have been higher and revenues lower than originally anticipated, giving a deficit of Tg 2,400.0 million in 1992 and an even larger projected deficit of Tg 7,032.5 in 1993. One estimate prepared by the Mongolian authorities in conjunction with the International Monetary Fund and the World Bank identifies a fiscal deficit which was projected to rise from 11 percent of GDP at the end of 1992 to 19 percent in 1993-94, reflecting the effects of exchange rate changes on transactions denominated in foreign currencies and the expected trajectory of disbursements for donor-financed investments.

120. Mongolia has a fairly high labor force participation rate due to the state's historical commitment to provide jobs for everyone, the high level of educational development, and the interest of women in employment. The total labor force has approximately one million people; and it includes approximately 52 per cent of the female population of working age.

121. During the period 1970-90, about three quarters of the labor force was employed in the material sectors. The agriculture sector has become less important over time, but it still employed 29.3 percent of the total in 1990. Industry became proportionately more important, raising its percentage from 15.5 to 19.0. As a subsistence agricultural economy and then a centrally-planned command economy, Mongolia had not previously experienced open unemployment. Until the collapse of the socialist regime, the state found or created employment for every school leaver and graduate. Frictional unemployment existed while workers were in transition from one job to another, but no more than 2 percent of the labor force was affected by frictional unemployment at any one time. The recent economic crisis has abruptly altered this situation. On 1 June 1993, 55,300 able-bodied people were registered at the labor market, were actively seeking jobs, and were considered unemployed. This contrasts with just 10,300 in 1990. The total unemployment rate had risen from 1.2 percent in 1989 to 5.4 percent in 1992. While this figure might appear modest compared with that of many other countries, both industrialized and less developed, in Mongolia its impact was felt particularly keenly because of the abruptness of the change.

122. It seems likely that in the short term unemployment will rise further. Privatization will make enterprises more conscious of labor-utilization rates, and even the government is less willing to tolerate 'make-work' positions than it was. The government released some 3,000 workers in the early 1990s, and the Ministry of Education, for example, was cut from over 100 employees to half that size. The challenge for the authorities, moreover, is not only to find jobs for those displaced by economic restructuring but also to cater for new entrants to the labor market. The number of persons of working age is expected to increase by 174,500 (17.4%) between 1990 and 1995, by 186,100 (15.8%) between 1995 and 2000, and by a further 219,500 (16.1%) between 2000 and 2005.

123. Education was allocated 2.5 percent of the 1993 central government budget, 46.4 percent of the local government budget, and 15.2 percent

of the total government budget. This was a decrease from the previous year, when education had been allocated 19.7 per cent of the total government budget. However, the figure was more similar to the proportions of the 1980s. It appears that educational expenditure increased as a proportion of the total because it was less easy to make abrupt cuts since teachers' salaries still had to be paid and schools heated. The proportion of GNP budgeted for education in 1993 was only half that allocated in 1992. It was also lower than the average in the 1980s.

124. The following data present information on the distribution of government expenditure on education by level between 1990 and 1992. Kindergartens were consistently allocated about 20 percent of the total, and primary, middle, and general secondary education received about 55 percent. The proportion allocated to vocational institutions moved from 14.8 percent in 1990 down to 4.1 percent in 1991 and then back up to 6.8 percent in 1992. However, this seems to have been more due to reclassification of institutions than to a substantive change. The reclassification was also responsible for part of the fluctuation in allocations to postsecondary colleges and universities. Allocations to postsecondary colleges and to universities also fluctuated but not by so large an amount.

125. Some information on unit costs, obtained simply by dividing the government expenditures on each sector by total enrollments, is presented below. It must be stressed that this information is very approximate. It aggregates institutions of many different types and locations; and it also divides expenditure data categorized by the 1992 financial year (which commenced in January 1992) by enrollment data for the 1991/92 school year (which commenced in September 1991). Nevertheless, the figures do provide an indication of the order of magnitude.

- Kindergarten	Tg	5,944
- Primary, middle, & general secondary education	Tg	2,035
- Vocational schools	Tg	9,333
- Postsecondary colleges	Tg	14,204
- Universities	Tg	12,954

126. Although presently small, the emergence of the private sector education is of considerable significance. Non-government investment in education also includes parental expenditure on books, bus fares and, especially at the postsecondary level, fees. Details on recent introduction of fees for higher education, and the scale and implications of these fees, are presented in the summary of Chapter 5 on higher education.

127. At the level of K-10 education, some contributions of food are made by parents for children in boarding schools. Recent initiatives have also emphasized income-generating activities, especially by technical/vocational schools but also by institutions of other types. The authorities may need to examine ways to increase the scope for cost-recovery, income generation and parental and/or community contributions.

128. A critical question at the present time is the nature of private benefits from EHR activities given the public sector salary scale. One striking feature of this salary scale, given the recent rate of inflation, is the low total amount being paid at each level. Indeed in mid-1993, even with the 1,500 tugrug supplement, salaries even of the highest-paid workers were inadequate for basic living expenses. For example, rents increased markedly during the year, with a typical apartment in Ulaanbaatar increasing from 800 to 3,500 tugrugs per month.

129. Although 1993 incomes on the official salary scale were inadequate even to make ends meet, tertiary institutions were charging annual fees commonly in the region of 20-30,000 tugrugs, and appeared to have no shortage of applicants willing to pay the fees. The question then arising is why applicants were willing to pay such high fees when it appeared that the rate of return would be low and possibly even negative. The answer to this question is multi-faceted. First, many graduates aspire to work in the private sector, where salaries are commonly three to four times those in the public sector. Second, traditions are maintained from the past when higher education had been free of charge and had been desirable because it did lead to higher incomes and enhanced social status. Finally, opportunity costs are low since job applicants without higher education qualifications have a much reduced chance of finding employment.

130. However, the transitions of the early 1990s may also introduce and exacerbate various social inequalities. It is important to note that the introduction of tertiary education fees may discriminate against families which have little contact with the cash economy, particularly those outside Ulaanbaatar, and those who operate within the cash economy but who are poor. The transitions may also have implications for gender disparities. Mongolia is unusual in global terms in having higher female than male enrollment rates in most tertiary courses. It will be important to monitor the impact of the financing and other reforms on enrollments by gender.

131. Education is also an investment for society. When individuals gain the benefits of education but do not pay the full costs of education because it is highly subsidized, then social rates of return may not be as high as private rates of return. In Mongolia the scale of subsidy has in the past approached 100 percent, but is now being decreased especially in higher education. Also, income taxes have been introduced, even though they remain at a very low level. The move towards market mechanisms is leading to a convergence of private and social rates of return.

132. The collapse of the Soviet Union and the termination of these inflows has created a crisis for education as much as for other sectors. Although Mongolia is with some success transforming itself into a capitalist society and is attracting resources from international organizations and bilateral donors, it seems unlikely that the new flow of resources will be able to match the that which used to come from the Soviet Union, at least in the short and medium

run. In the budgetary crisis, the education sector may be particularly vulnerable. Policy-makers may wish to give priority to sectors likely to bring rapid economic returns, and may consider the education system less worthy of priority. While such a policy would be understandable, it could have serious implications. Mongolia currently has a strong education system, of which the nation can be proud. The benefits from this education system are both economic and social, and are long-term as well as short-term. It would be a grave mistake to withdraw so many resources from the education system that it suffered permanent damage, especially if that damage subsequently required more resources to rectify the EHR system than were saved in the first place.

133. Nevertheless, the budgetary crisis clearly does require urgent action to generate more resources for the education sector and to reduce costs. Beginning with the total availability of resources, a great deal depends, of course, on the nature of the economy. If the economy recovers and strengthens, then more resources will become available for all sectors, including education. At the same time, resources for particular projects can be solicited from external agencies and bilateral donors.

134. In keeping with its general philosophy of privatization, the government is encouraging the development of private educational institutions. These are most obvious at the postsecondary level, but may also develop at lower levels. To the government the advantage of these institutions is that they release pressure on the public purse. However, they also raise questions of equity and perhaps quality, and the implications of such policies should be considered carefully in advance. The government is also encouraging educational institutions to secure their own ways to generate resources. This may be relatively easy for vocational institutions and for universities, though is more difficult for kindergartens, primary and secondary schools. The ways that institutions currently raise revenue range from renting out of facilities to managing flocks of sheep. One guideline which has been proposed for institutions at the level of K-10 education is self-generated revenue to cover 10 percent of total expenditures. Clearly this is easier to achieve for institutions of some types and in some locations than for others. It is essential for the authorities to monitor the scale and nature of revenue-raising activities, and also to identify the impact of these activities on the educational goals of the institutions. There could be a danger in some cases of revenue-generation becoming such a prominent goal that it occurs at the expense of educational goals.

135. Specifically in higher education, the government has announced a policy through which all institutions are required to charge fees to cover at least their salary costs. The authorities have announced that loans will be available for impoverished students, though the details of implementation remain to be worked out satisfactorily. It will be essential also to monitor the impact of the fee-charging policy. It will be especially important to identify its impact on social and gender equity, and on the balance of courses offered within particular institutions and the higher education sector as a whole.

136. In the old system, enterprises also commonly made contributions to the operation of educational institutions. The advent of emphasis on profits brings a danger that contributions of this type will disappear. However, the government could encourage maintenance of such contributions first through general publicity of the need, and second through exemptions or reductions in taxation for such contributions. Another way to raise resources would be to ask parents and the community as a whole to shoulder a greater burden. One striking feature of the 1992 budget for kindergartens was that food consumed 33.1 percent of the total. The government subsequently asked parents to pay for half of kindergarten food costs. This seems very reasonable given that parents would still have to pay for their children's food if the children were not in kindergarten. Indeed there may be a case for asking parents to pay more than half the cost. There has also been discussion of parental contributions to food in boarding institutions at the level of general education. The authorities have proposed that parents would be asked at least to contribute half of the meat consumed by boarding students. Both the philosophy and the practicalities of this matter are now being reviewed in some detail in debates within the Khural. The financial basis of the whole education system is in crisis, and it might seem reasonable at least to ask parents to help provide food for their children. In many other countries, moreover, contributions by parents and community members go far beyond modest assistance with food and include help with construction and maintenance of school facilities. It might be possible to harness resources not only for this purpose but also for assistance with resources for heating and other needs.

137. Generation of additional resources should be accompanied by efforts to reduce costs. One way to do this is to close either parts of institutions or whole institutions. There have been discussions of closure of Grades 9 and 10 in some schools, and scope may exist for rationalization, especially in higher education. Once again, these matters have to be addressed carefully because they have long-term as well as short-term implications. Given that heating consumes so large a proportion of total expenditure in Mongolia, that sub-sector would seem to deserve particularly close attention. Many institutions have been constructed with large rooms, draughty windows and high ceilings, and are thus very inefficient users of heat. The centralized system of heating in the cities, in which consumers have neither the incentive nor the mechanism to conserve on heat, also needs reform.

138. In the short run the government will not be in a position to propose wholesale redesign of school buildings. However, an investment in such redesign might pay major long-term dividends. The education authorities could also propose and support mechanisms to reform the systems of centralized heating. Other possible ways to conserve on heating include adjustment of the school calendar to reduce the amount of school-time in the winter, and the use of gers instead of brick buildings.

139. In the thrust to reduce costs, however, it is again important to sound warnings about false economies. Salaries are so low that staff retrenchment will not generate large savings. However, that situation

will change if general civil service reform should raise salaries significantly in real terms. The budget for textbooks has been reduced to the minimum. International experience indicates that textbooks and instructional materials can be a highly cost-effective investment in the quality of education, and the Mongolian authorities would be unwise to neglect the necessary resources to make the large fixed expense of EHR activities worthwhile.

Educational Management

140. At the time of the withdrawal of Soviet support for the Mongolian administrative structure, few Mongolians had experience in ministerial or institutional administration and virtually no Mongolians had been trained in management functions. At present, except for short courses, there are few systematic programs for the training of educational administrators in the country. To keep a well-endowed educational system from deteriorating, and to design a national system for human resource development which is based on that system, the management capacities of all government ministries, especially the Ministry of Science and Education, and all educational institutions must be strengthened and improved.

141. The basic principles guiding the reform of Mongolian education and establishing the new systems of administration and management are set out in the Education Act of 1991. Additional plans, regulations, and reform goals are reflected in numerous Ministerial Executive Orders which have been and continue to be issued periodically by the Minister of Science and Education. For example, with regard to higher education, an order issued in May, 1992 and entitled Statutes of Universities outlines a new classification of degrees. A July, 1992 order entitled Finance of Higher Education sets forth new regulations governing the allocation of resources. This order confirms the direction that reforms have been taking. They acknowledge the fact that the government will no longer supply full support for institutions of higher education. They direct the establishment of a tuition and student loan program. They re-confirm the policy of academic freedom allowing colleges, institutes, and universities to plan their own academic programs and to seek funding for research and service activities from both public and private sources.

142. The Ministry of Science and Education is central to the entire EHR reform effort. At present its operating plans for the immediate future reflect a mix not only of the provisions of the new Constitution, Parliamentary laws, and Ministerial policy statements and directives but also the numerous existing regulations and administrative procedures which have been inherited and which were a part of the former administrative bureaucracy. While many of them are currently under review, they remain in force until new management structures and systems can be designed and put in place, and new educational plans can be developed. The Ministry's plans also reflect the recommendations of a series of consultant reports which provide guidelines based on considerable educational and administrative experience in developed countries.

143. While many factors affect management structure generally - size and expanse of the system, types of educational program, students to be served, and available resources - the re-organizing process should develop from a clear-cut conception of the educational system's new revised mission. For this to happen, the organizational structure of that system needs to be rooted in analysis and planning. Furthermore, both management structures and management systems in the Ministry and in the schools, colleges, and universities must develop from the planning process. Under the former command system of education, there was little need for ministerial and institutional planning, especially master planning, because the entire process was centralized and all goals and objectives were prescribed. Now, however, the Ministry of Science and Education must face the perplexing problems of defining new goals for the nation's educational system and also deal with the difficulties produced by the distinctive nature of the organization that it has inherited. Two additional factors that will influence the organizational structure of both the Ministry and Mongolia's educational institutions, now and in the future, are the identification and training of needed personnel and the establishment of clear lines of authority and accountability.

144. Mongolia's educational system is undergoing dramatic organizational change. Decentralized management has been delegated to the aimags; greater autonomy has been mandated for the colleges and universities; and private institutions are being authorized at all levels. Leading the education reform movement is the Ministry of Science and Education. New responsibilities are being assumed; others are being moved from one department to another; still others are being transferred to ministries and agencies outside the Ministry of Science and Education.

145. Having been granted greater freedom, independence, and autonomy, the universities of Mongolia also have undertaken initiatives to introduce a number of fundamental educational reforms. However, like the Ministry of Science and Education, the basic structure of Mongolian universities, though somewhat changed, has remained intact. The organizational structure that exists in the universities is departmentalized by function and uses departmental categories which can be easily defined, delegated, and controlled - academic studies, research, planning, teaching faculties, etc.

146. In the pre-democratic period, research and teaching functions were placed in separate institutions. Beginning in 1990, as a part of educational reform, the separation of research and teaching has begun to dissolve. Many of the centers and institutes of the Academy of Sciences, for example, are being moved into the universities, and the number of institutes is being reduced. Not all separately funded institutes and centers affiliated with the Academy of Science are expected to move into the universities, nor should they. Policies need to be developed which will rationalize the roles of the Academy, each of the centers and institutes, and all the universities, and define the appropriate relationships that should exist among them.

147. An overall review of the structure of Mongolia's education establishment indicates that, in accordance with new parliamentary laws and ministerial directives, certain major sources of power and authority have been transferred or are being shifted from central ministerial managers to local and institutional managers. In higher education, even policy formation is currently divided between the Ministry of Science and Education and the individual universities. Moreover, the universities appear to be gaining increasing autonomy.

148. In the kindergarten, primary, and secondary school system, management authority and much decision-making power have been effectively transferred to the aimags and city districts. All policy formation, however, has been retained in the Ministry of Science and Education. As noted above, the individual responsibilities in each of the MOSE professional departments have been carefully re-defined to emphasize the Ministry's policy-making role. At the same time, the ability of the aimags to manage and administer their own local school systems varies greatly. Most are still relying heavily on the Ministry.

149. As for the organizational effectiveness of the Ministry of Science and Education, too short a time has passed to make any definitive assessments. Government ministries and educational institutions have goals which are complex and difficult to clarify. Moreover, there are few and generally poor measures of the achievement of goals and objectives. Nevertheless, as noted above, the Ministry has been very busy adjusting the details of its organization and redefining the responsibilities and duties of its departments in response to the changes in government policy. Also, some re-organization is still going on.

150. The Ministry of Science and Education is now organized primarily as an agency for policy implementation, facilitation, and enforcement. All evidence points to the fact that in general its record in the administration of its responsibilities is very good. Furthermore, it has demonstrated an ability to reorganize itself promptly to accommodate new demands and new requirements. However, as the Ministry undertakes increasing responsibilities as a policy-making agency, its organization and management structure may need to be reviewed. New mechanisms may be required for redefining the role of the MOSE, setting new goals and objectives, introducing strategic and master planning, and establishing new linkages with other governmental agencies and the public.

151. Personnel management is an area of special concern in the EHR sector because of the reduced levels of staffing faced by many activities. Good personnel management involves, first of all, the recruitment and selection of qualified people for available positions. This process becomes central to the performance of any agency, department, office, school, or university. It begins with planning and forecasting. For Mongolia in the past, this has meant centralized planning and top-down management. Now, however, in a freer labor market, planning has become (or, more accurately, will gradually become) a matter of separate ministerial, institutional, and local analysis. Like other aspects of decentralization, personnel management

has been transferred to the universities and to the aimags. All personnel forecasting, including the planning which is conducted by the Ministry, should take into consideration such factors as mission, goals, new program plans, reorganization requirements, retrenchment imperatives, economic assumptions, availability of qualified candidates, competing market demands, and promotion/retirement schedules. In times of no growth, financial crisis, and cut-backs such as the nation is going through at the present time, good planning is even more important simply because priorities must be set.

152. Nearly all administrative jobs in the MOSE and in the schools and universities require a certain amount of on-the-job training which is provided to all new hires. In addition, if short courses (e.g. two-three week seminars) can be arranged, new employees will be released to attend them. Generally speaking, there is a felt-need and a wide-spread demand for short- and long-term courses in management at all levels.

153. To cope with the financial crisis, expedite educational reform, and plan for the future, the Ministry of Science and Education must have an accurate picture of present conditions and past performance. Fortunately, a basic centralized information system has been in existence for many years which enables the Ministry to assess its financial condition and to measure the degree to which it has been meeting goals which were established by the former Ministry of Education and the State Board of Science and Education. Two sets of data are collected - statistical and financial - and both sets are used for monitoring, evaluation, management, and planning purposes.

154. The data which are gathered for each period are not trivial. For kindergartens, for example, the September questionnaire asks for such important information as: student enrollments, number of classes; age and gender of students; expenditure on food paid by parents; capacity of buildings; condition of facilities; numbers of staff and teachers; educational level of teachers/head teacher; and job activities of administrators. Similar detailed information is requested on primary and secondary schools. For the universities, the September questionnaire asks for such information as: student enrollments by course, subject, aimag, age, gender, and expenditure sponsor; faculty totals by level of teaching, years of experience, age, sex, educational level, and specialization (science, art, technical, medicine, agriculture, and social science); and faculty "benefits" - housing, released time for research, language capacity, part-time/full-time. The information requested about administrators and research specialists is comparable to that required concerning faculty members.

155. The second major set of data which is routinely collected is financial information Exclusive of the regular accounting reports required of all educational institutions, certain statistical information is gathered systematically on separate standard forms by the MOSE's Department of Economics and Social Welfare at the end of each year from all aimags and cities, and all the public and private universities. Included are such data as: number of buildings, salaries of faculty and staff, physical assets, annual financial

expenses, and profits from enterprises. For planning purposes, the Department also collects its own statistics on student admissions, promotion, and graduation rates and makes projections - current, mid-term (1991-1996), and long-range (1991-2000). It is also responsible for preparing numerous special evaluation reports which are normally transmitted from the MOSE to the MOF.

156. In the past, it has been difficult for the MOSE to merge its statistical and financial information for purposes of analysis and planning. Beginning in 1993, however, with the assistance of computers, a combined data base was created which will enable the Ministry to describe and assess the economic base for the nation's education system at all levels. Utilizing combined information concerning students, facilities, and costs, experimental outputs are now being generated on such measures of management efficiency as cost per square foot per student. At present, such reports are special reports prepared for internal use only. In a year or two, the Ministry expects to produce a standard annual report using the combined data.

157. Accounting for expenses is rigorous and begins at the lowest level of government: quarterly reports are sent from the somons to the aimags to the Minister of Finance where summaries are prepared and forwarded to the Cabinet/Great Khural and the Ministry of Science and Education. Based on these reports, comparisons, evaluations, and budget changes are made. In addition, there emerges the budget request for the next year, the so-called Planning Budget. MOSE also receives all the quarterly expense reports from the universities. This quarterly reporting is extremely important because it is on these occasions that the schools, colleges, and universities are held to a strict accounting by the MOSE, and adjustments in program, personnel, supplies, maintenance, etc. are made. By this process, too, certain longer range objectives can be achieved.

158. The speed of change in Mongolia's economy and government places a premium on the need for administrators and managers who have the skills to operate effectively in new, market-oriented organizations. Many MOSE officers, together with college and university administrators and faculty members, as well as aimag officials and school principals, are all engaged in the management of a process which is ushering a new socio-economic system. At all levels in the education system, administrators find themselves without the knowledge and management skills to deal with the new responsibilities they are being called upon to perform, such as policy formation and public accountability. They also need a better understanding of the obligations which accompany the freedom that individuals and enterprises enjoy in a market-oriented society. For most Mongolian educators, these changes mean quite simply having to perform their jobs with obsolete management skills. Such shortcomings need to be remedied though a major in-service retraining effort, and a program of intensive training (in Mongolia and abroad) for key administrators in the MOSE, universities, and schools. In addition, institutional programs for the preparation of new career-oriented administrators need to be established in the universities and elsewhere.

159. Currently, general management training is centered in the Institute of Administration and Management Development, The Economics Institute of the National University of Mongolia, the Economics College, and the College of Commerce and Business. The training of school administrators in the Pedagogical University has apparently not been a very important part of the mission of this institution. There is no systematic program for either the pre-service or in-service training of school principals, vice principals, head teachers, etc. at kindergarten, primary, or secondary levels. The University has dedicated itself almost wholly to the training of teachers for the education system at all levels and in all specializations. However, under the former government administration, the Ministry of Education provided compulsory three-month training programs for all principals. Under the present Ministry of Science and Education, in-service seminars were regularly one day per month for administrators. Recently, all of these in-service training activities have been transferred from the MOSE to the Pedagogical University.

160. A number of options should perhaps be considered by the Ministry of Education and others in the Government to strengthen the nation's capacities to manage, consolidate, and sustain its reforms. First, consideration should be given to conducting a comprehensive review of the organization of the Ministry of Science and Education to ascertain whether or not its overall structure provides the most efficient, effective, and flexible utilization of talent, expertise, and resources to achieve the new policies which the Government has set (and continues to set) for the educational system of the country.

161. Second, the organizational problems of higher education appear to be severe. The disassembly of the Mongolian State University during the transition from a socialist state to a free, market-oriented society has fragmented higher education in ways that are proving detrimental to all postsecondary institutions, especially the universities. Mongolia is too small a country, with too fragile an economic base, to support all of the separate universities, centers, institutes, and colleges that emerged from the break-up of the former Mongolian State University. Resources are too scarce to permit institutions to squander them on duplicating faculties, administrations, laboratories, classrooms, teaching materials, and other facilities and supplies. Consolidation is badly needed and, in a number of areas, has already begun.

162. Third, there is no more economically and educationally significant challenge facing Mongolian educators than having to cope with shrinking and exhausted budgets, rising inflationary costs, deteriorating buildings and equipment, and severe shortages of textbooks, teaching materials, and supplies. Furthermore, enrollments are dropping, teachers are leaving the profession, and some kindergartens are being forced to close. At the very least, the facilities and personnel planning capabilities of the Ministry need to be strengthened in order to recommend economies, priorities,cost savings, consolidations, and control measures to the aimags and local schools.

163. Fourth, the lack of the management skills which are required to implement and sustain the government's new reform policies in education is widely recognized. It is voiced openly in the departments of the Ministry of Science and Education and it is expressed repeatedly in the schools and aimags. Among university rectors, it is a matter of great concern. There is general agreement that if institutional capacities for management training were strengthened, they will be in high demand because the need is so great and pervasive in both public and private sectors. Moreover, there is an eagerness to learn about strategic planning, policy-making, and the delegation of authority; also, how to build team work, turn policy into practice, and exercise leadership, Three major areas are in need of development and support: pre-service, career-oriented management education (mainly in the universities, centers, and institutes); in-service management training (conducted by Mongolian mentors, visiting professors, and experienced professionals); and management study abroad (in such countries as the U.S., Canada, Europe, U.K., and Australia). The sustainability of Mongolia's educational reforms and the quality of its educational system will depend, in large part, upon the effectiveness of its management systems and the calibre of its individual administrators and managers. Based on these criteria, with prompt and adequate assistance, there is reason to be optimistic about the future of Mongolian education.

164. Fifth, the Ministry of Science and Education would be well advised to initiate a planning process for developing a massive fund-raising program to meet the country's urgent financial needs of Mongolia's educational system. This process, included as a part of the scheduled master-planning effort to be initiated in the fall, would identify priority needs which are most closely tied to the socio-economic reform policies of the government and to national development. The outcome would be a kind of blueprint guiding requests and proposals for outside funding of education by international donor organizations, foreign governments, and other potential contributors. Among those critical needs in the area of educational management are the following:

- Fielding a task force of consultant/advisors to assist and train key administrators at local community levels and in institutions offering management training programs.

- Support for facilitating the unification and consolidation of higher education in Mongolia.

- Assistance to the universities for implementing policies calling for faculties and faculty members to combine teaching and research activities.

- Direct support for the improvement of the nation's institutional capacity for management training, especially in public administration and school administration.

- Support for the establishment of a centralized Management Information System serving the informational and data

processing needs of the MOSE, local school boards, and the universities.

- Assistance in the establishment of institutional linkages with management counterparts in North America, Europe, and other democratic, market-oriented countries.

Pre-School, Primary, Middle, and General Secondary Education

165. The current system of kindergarten through grade 10 (K-10) education in Mongolia began with the organization of the first primary school with 40 pupils in 1921 and the first kindergarten in 1930; since then a comprehensive system of education from kindergarten through graduate study has evolved, including vocational, postsecondary, adult evening and correspondence education programs, and boarding schools for nomadic children. This EHR system has made Mongolia an almost completely literate society (estimates suggest over 96 percent literacy, defined as percent of persons 10 or more years of age who have completed at least three years of schooling) and well over three-quarters of the young people had eight years of education as of the early 90's. Part of this achievement was made possible by having boarding facilities at about two-thirds of the formal K-10 education establishments in the country.

166. The government, the legislature, the aimags and the somons are all concerned with improving the quality of education and adapting education to the needs of the new economic and social environment. The predominant issue, however, is how to finance K-10 education in the future. Current policy is to decentralize education to the aimags and the somons and to encourage these local and regional authorities to finance as much of K-10 education as possible. Most aimags and somons can not fully support the schools which now exist and many ten-year schools are being reduced to eight-year schools; also, some aimags are eliminating the boarding facilities for nomadic and rural children. Drop-out rates are increasing each year and the education system is in danger of serious contraction and quality deterioration without some kind of transition financing. Despite the heroic efforts of many local leaders and school officials, the resources are simply not being provided to keep the present system at a reasonable level of efficiency and effectiveness.

167. The Mongolian Constitution, adopted in 1992, establishes, in paragraph 7 of article 15, the "right to education." This paragraph further states that the "State shall provide basic general education free. Citizens may establish and run private schools if they meet the requirements of the State." Other articles guarantee equal rights for all who are citizens or who are legally resident in Mongolia and guarantee freedom of speech, religion and political affiliation. Article 5 recognizes Mongolia as a "multi-structured economy" which "shall recognize all forms of public and private ownership and shall protect the right of the owner by law."

168. The 1991 Education Law, in turn, gives basic principles of

education which are consistent with the later (1992) constitution. This law confirms that there shall be compulsory basic education (defined as eight years of schooling, or six years of primary and two years of middle education). Secondary education consists of the final two years of the ten-year school plus some vocational schools that offer vocational training beginning at the ninth year. The law suggests that schools will have practice sites in business and industry in order to give students on-the-job experiences as part of their education. It further stipulates that children may elect to leave school after basic education at grade eight and to continue later, either in formal schools or in non-formal and adult education programs. The law transfers considerable authority to local provincial and town administrations to make decisions concerning the schools and suggests that it is basically their responsibility to finance the schools and the dormitories for nomadic children.

169. The government has interpreted the Constitution and the Education Law of 1991 as encouraging dramatic reform of the education sector in order to prepare children and young people for the new form of democracy and for the market economy. This has led to an emphasis on higher education reform, considered necessary to prepare the new specialists required for the new social, political and economic order, and on reform of the general education curriculum and teacher training programs to prepare the next generation for life in the new Mongolia.

170. Shortly following the passage of the Education Law of 1991, the then Ministry of Education (now Ministry of Science and Education) issued the new curriculum for the ten year secondary education program. This curriculum was to come into effect gradually over several years in order to give the government time to prepare both teaching materials and teachers for the new program. The program eliminates most of the ideological emphases of earlier programs, introduces English, Russian and occasionally other languages as second languages beginning in grade five, and offers local schools the option of adapting up to 25 percent of the curriculum to the needs of the region or locality. In the past, all students had to take the same program with no electives and no options for aimags, somons, or local schools to modify the program in any way. The program was closely patterned after that in the then Soviet Union, though there were some adaptations to the Mongolian context.

171. In the new curriculum, introduced since 1991, there will be greater diversification of studies. Primary emphasis might be placed during the next several years on updating the texts and teaching materials in all subjects, while moderating the emphasis on immediate adoption of the Mongolian script at all levels and in all subjects. Until recently, the eight-year (incomplete) and ten-year (complete) secondary education were rigid and fixed as were the variety of vocational school options after grades eight and ten. Now, there will be greater diversification of studies so that students have more options to choose courses; more flexible vocational skills options; identification of individual skills and interests rather than having everyone take the same program; and no option for purely academic studies (all students will do pre-vocational and vocational work along

with academic subjects, etc.) In 1991 and 1992 respectively the first and second levels of the new content were introduced and in each subsequent year successive levels will be added.

172. The Ministry of Science and Education has also set certain goals and drafted a National Program of Action as part of the World Basic Education for All program initiated at the Jomtien conference in 1990. The draft plan of action for Basic Education for All fed into inter-ministerial deliberations during 1992 and 1993 which led to a "National Program of Action (NPA) for the Development of Children in the 1990's". A draft program, combining input from the various Ministries, was discussed during 1992 and a final plan was issued in May, 1992. This was approved by the Prime Minister on May 27, 1993, and now represents official government policy. The plan is comprehensive, covering needs of children and women in Mongolia, and lists major and supporting goals in women's health and education, food and nutrition, child health, water and sanitation, basic education, and needs of children in especially difficult circumstances. The NPA is significant in that it is the only officially sanctioned set of priorities which involve all government ministries and organizations and a number of private organizations and which deal with the overall needs of children and women. As the education sector is examined, the NPA targets must be considered in the context of the entire education sector.

173. The Education Law of 1991 describes pre-school education as serving children from birth to three years (nursery schools) and from three to eight years (kindergartens). General secondary schools include primary education (the first six grades of schooling), middle (years seven and eight), followed by secondary education (years nine and ten). Young people enter school at the age of eight (occasionally seven). From grades one to four, each grade group generally has one teacher plus a music teacher and a physical education teacher. From grade five onward, subject teachers have a classroom which students move to when they take that subject. The school operates six days a week, six hours a day (usually five hours for grades 1 to 4) from Monday through Friday and five hours on Saturday. The students are in school for about 180 days a year and if the rather intensive curriculum is taken into consideration, the ten-year school is probably the equivalent in academic content to a 12-year school in the United States. Levels of achievement, of course, may vary from school to school, and there is clearly some differentiation between urban and rural schools.

174. Recent patterns of enrollment suggest problems of maintaining past participation rates. Although initial enrollment in grade one in the fall of 1992 was somewhat higher than 1991 (51.9 thousand versus 49.2 thousand), it was still some 5,000 less than in 1990 (51.9 thousand against 57.1 thousand). Enrollment in kindergarten and in grades 4-8 and grades 9-10 dropped off roughly ten percent per year from 1990 through 1992. Even more dramatic is the drop in enrollment in boarding schools from about 75,000 in 1985 to less than half that, or 35,368, in 1992. The boarding schools are one of the primary reasons for Mongolia's high literacy rate.

175. During 1993-94, families sending children to the boarding facilities may have to contribute the meat necessary for meals. This could be a burden for many families and it may contribute to the school dropout rate. Also during the past two years, most schools with boarding facilities faced financial problems related to energy and heating costs and many closed their boarding dormitories in order to keep the secondary school operational. The increasing unavailability of boarding facilities in K-10 education facilities could cause the illiteracy rate among rural children to rise rapidly. The percentage of cumulative dropout began to accelerate in the 1990-1991 school year and became increasingly serious in the 1992-1993 school year. Only a cumulative average of 4 percent of all children 8-15 had dropped out of school in 1988-1989; on September 25, 1992, school principals reported that a cumulative average of 18.6 percent had dropped out. The 1992-1993 school year was particularly significant in terms of the accelerating dropout rate of children 8-11, primarily in rural areas but to some extent in urban areas. By September 25, 1992, a cumulative total of 15.8 percent had dropped out; by December 25, 1992, the total had risen to 21.8 percent. Over-all cumulative averages similarly are rising dramatically. As of September 25, 1992, a cumulative total of 18.6 percent of children 8-15 had been to school but dropped out somewhere along the line before completing compulsory schooling. This total rose to 21.8 percent by December 25, 1993.

176. The education system is well supplied with qualified teachers, though there are increasing reports that many qualified teachers are leaving the profession to find more remunerative jobs. For the first time in recent years there was a decline in number of teachers in the school system in the school year 1992-3. Primary class teachers (grades 1-3) declined from 6230 in 1991-2 to 6105 in the later year. In 1991-2 there were a total of 14251 middle and secondary school teachers (grades 4 through 10) as compared to the 1992-3 total of 13276. The vast majority of teachers are female; slightly more than 90 percent at the grades 1-3 level and slightly over 72 percent average at all levels. Two-thirds of all teachers have a higher education degree; most of the rest have specialized pedagogical training at the secondary level, and a small number (nine percent) have only secondary education.

177. Most of the current teachers obviously were trained and entered into service before the dramatic reforms since 1990. Accordingly, the sizable changes in goals and in curriculum which have occurred during the past three years have required attention to in-service teacher training. The Institute for Curriculum and Methodology under the Pedagogical University is charged with conducting such activity. Before March 1993, the Institute handled only in-service training. Since that time curriculum development and research functions (earlier in the Ministry of Science and Education) were added to the Institute at that time. This is fortuitous in that the same organization is now in charge of developing new curriculum and teaching materials for the schools, doing research on drop-outs, and training teachers to handle the new curriculum and materials.

178. The local administrative structure (in aimags, somons, bags, and schools) is not large and most administrators are experienced teachers who have learned their management skills by working in schools. Local school principals work with the elected officials and administrative officers of the somon and aimag in negotiating budgets and in obtaining permission to expend funds on major capital investment projects. The job of these principals includes reporting three times a year to the Ministry, finding ways of keeping the school building repaired and facilities operating, paying for the heating and electricity, and assuring that the teachers perform their duties. Principals in rural schools are faced with the additional problem of managing dormitories (including food service, laundry, etc.)

179. Regular visits of aimag education officers to the somons have been reduced or virtually eliminated in some aimags. Data collection activities continue, however, and the system of tracking students and teachers appears to be well developed, with substantial statistical information available at the Ministry of Science and Education on virtually every aspect of the school system. In November, 1991, an Education Inspectorate, nominally independent but reporting to the Ministry of Science and Education, was established; this inspectorate has one inspector in each aimag and in each of the four cities which function as aimags (Ulaanbaatar, Darkhan, Erdenet, and Choir).

180. The previous system of school and classroom structure is now in transition. Formerly, the children in the first three grades had an integrated curriculum; after that, they took subjects in classrooms set up for each subject. In the new system, most schools have converted to a four-year primary program with an integrated classroom through the fourth grade. In the past each of these rooms at the fifth grade onward has had the equipment and teaching resources necessary for that subject. Biology, chemistry, physics, and mathematics classrooms, for instance, are expected to have the required laboratories or equipment for those subjects. However, no equipment or materials of any consequence have been acquired by most schools for the past three years. Most equipment purchased in the past tends to be laboratory equipment not always suitable for teaching purposes. Many schools have some audiovisual equipment, but most is idle for lack of projection bulbs, up-to-date material and supplies; chemistry labs have a scarcity of chemicals and experimental equipment is often not operational for lack of parts or lack of repair facilities. Few textbooks exist although many school libraries have multiple copies of older textbooks which can be borrowed by students.

181. As was noted above, both the Education Law of 1991 and the current Constitution of Mongolia mandate the provision of free basic education. This is currently interpreted to mean education through the eighth grade, which is also the "compulsory" level. However, no enforcement of this educational level is mandated and the law explicitly recognizes that the compulsory level may be attained in a combination of formal and nonformal schooling. The Education Law of 1991 also stipulates that the State (national government) will help finance education, but that there should be participation by aimag and somon authorities. The law also stipulates that budgets for individual

schools and institutions will be based on per student cost as set by the government. In practice, only Ulaanbaatar and a few reasonably wealthy aimags and somons contribute significantly to the budget for elementary, middle and secondary schools. These school generally estimate their needs and send a budget via the somon to the aimag which sends a consolidated estimate to the Ministry of Finance. The Ministry of Finance, in turn, allocates the funds back down the line, to the aimags, which, in turn, pass it on to the somons and the schools.

182. There have been no national studies of learning achievement and thus it is difficult to compare Mongolia's academic accomplishments with those in other countries. However, historically the system has been patterned after a reasonably rigorous Soviet system and the products of the Mongolian system have competed favorably for progression into higher studies in the former Soviet Union and Eastern Europe. Further, the system historically has benefitted from a well-trained cadre of teachers. Although there has been little formal training of educational administrators (principals and supervisors), most appear to be well aware of their responsibilities and, on the whole, creative in attempting to shape a school environment conducive to good teacher morale and student achievement. At the same time, quality may be deteriorating in many schools because of a number of factors. First, the curriculum is undergoing radical transformation and many schools and teachers are not prepared for the new curriculum. Texts and teaching materials for many subjects in the new curriculum are scarce or nonexistent (except for some materials for introducing the traditional Mongolian script), and teachers and students use the texts published before the curriculum reform. Many of these texts are kept in the library and loaned to students, and even these are wearing out. Some of these texts in standard subjects may be satisfactory, but texts introducing content on the new social, political and economic context of Mongolia are nonexistent or are in very short supply.

183. In addition, there is an apparent policy to close certain low-enrollment ninth and tenth grades of schools in somons in the eighteen aimags, apparently with the idea of keeping open a limited number of ten-year schools, primarily in the capitals of the aimags. Already in rural somons, there are limited numbers of children in ninth and tenth grades (and these are mostly girls, often as many as 90 percent). With the closing of these grades, even fewer eighth-grade leavers will be willing to travel the distances required to attend to ninth and tenth grades in the capitals. At the lower end of the system, some kindergartens in less wealthy areas are closing, leaving rural children especially vulnerable in that they may have no pre-school opportunities at all.

184. One can make a case that the former high levels of educational opportunity in Mongolia were well suited to the externally subsidized socialist economy but that some downward adjustment is needed in the current economic crisis. However, if the system is allowed to deteriorate much more than it has during the past three years (and especially during the past year), it may reach the point where it will take many years to reconstruct it to an acceptable level of quality, effectiveness and efficiency. Priority, then, must be

given to maintaining a certain minimum level of basic education services. Beyond that, priorities must be set as to which elements of the system will be maintained at high quality. If all elements are allowed to deteriorate, none will be effective or efficient. Whatever priorities are selected, they must be realistic in the current social, economic and political environment. It would probably do little good to try to enforce compulsory formal education among the rural populations who feel that they need their children to manage recently privatized herds. It might make sense, however, to turn over some of the teaching and other resources becoming redundant with diminished school enrollments to other purposes. One such purpose might be a nonformal education program designed to be convenient for school drop-outs.

185. Current official policy seems to assume that former levels of education will be maintained, and there are numerous declarations at international conferences that Mongolia supports Education for All goals which suggest gradually increasing enrollments through the year 2000. Actually, Mongolia is regressing on virtually every Education for All goal, including adult literacy, enrollments in kindergartens, primary school, middle school and secondary school. It would be appropriate for the government to articulate its EHR transition policy publicly so that parents, teachers, students, the business community and others in the Mongolian society fully understand what is happening. Further, it would be appropriate for the government to articulate a policy of basic support levels below which it does not intend to let the education sector descend. If the aimags and somons were to be assured of enough financial support to continue a smaller system at high quality, these communities might regain confidence in the government's long term commitment to the educational system.

186. If a government-wide policy on nonformal education were to be adopted, resources for the development, testing, and reproduction of nonformal education materials for the various programs could be concentrated in one center to serve all programs; field agents of the various ministries could help one another in meeting their various goals; underemployed and unemployed school teachers could help manage evening and weekend programs in school facilities; many different kinds of education and training resources could be made available to those missed by the reduced formal education structure. Other policy issues which must be resolved include that of teachers' salaries. This issue is related to the overall problems of civil servant salaries, however, and must be resolved in concert with the broader public service issues.

187. Textbook manufacture and distribution is another area in need of policy formulation. Various options are being discussed for building up Ministry of Science and Education printing facilities; for strengthening the government printing press to handle textbook work better; for encouraging the private sector to handle textbook printing and publishing. Lack of a specific long-term policy on textbook manufacture and distribution is serious in that textbook production, manufacture and distribution is an industrial enterprise requiring careful management and professional skills if it is to be done efficiently and effectively.

188. Under the present structure of responsibility in the education system, the Ministry of Science and Education is increasingly a policy body and less and less in charge of direct administration of the school system. Clearly, one of its major tasks in the short term will be to design and articulate policies for the development and support of the education sector which will be understood by the various communities in Mongolia. Although the National Plan of Action for Education for All and the National Programme of Action for the Development of Children in the 1990✍s outline specific goals, neither the Ministry of Science and Education nor the government and legislature have set clear priorities as to what must come first and what may be postponed. Priorities in a field such as education, involving so many social, economic and political interests, are not easy to establish. In an era of severe resource constraints, however, some priorities must be made clear so that quality can be preserved in elements of the system, while those elements of lesser priority can be reduced.

189. As these priorities are set, alternative strategies for reaching young people and adults with appropriate education and training must be examined. Not only will certain elements of the current system need to be trimmed, but innovative approaches must be found to achieve priority goals using new approaches. What is needed is a national plan of action for nonformal education, geared toward remediating some of the negative effects of contracting the formal education system, and geared toward supplementing the formal education system in meeting priority goals. For instance, the trend of some families (especially rural families) to withdraw children from school (and the tendency for some to be pushed out because of closure of boarding facilities and the upper grades of some schools) will create a large number of semi-literate and undereducated young people. Nonformal education programs, then should be developed focused on how to reach these young people with appropriate educational opportunity in a cost-efficient manner.

190. Mongolia has had remarkable success in assuring equity in terms of access to education on the part of both boys and girls and both urban and rural populations. Until recently, enrollment in early primary education (grades one through three) was well above 90 percent in both urban and rural communities and among both boys and girls; enrollment rates are now dropping, especially among rural males. Of course, even in the earlier situation, the quality of education was not the same in all regions. Equity issues will increasingly be concerned with differences between numbers of students who continue in urban versus rural areas, and differences in the numbers of boys and girls who continue in the two areas. In the Mongolian context, it may be appropriate, as rural herds are privatized, for families to take their young men and women out of school earlier than before. However, nontraditional means of reaching these young people with quality educational opportunities must be found.

191. The categories of major educational expenditures are

dramatically different in Mongolia from other countries in that heating and energy take up a sizable portion of the budget. Teachers, in turn, take up less than half the budget, in part because of low salaries. There appears to be a reasonably high ratio of staff to teachers - roughly one to one in K-10 education. These staff are low-paid people necessary for the upkeep of the buildings and grounds, cooks and other help for the boarding facilities (kitchens, dining halls, dormitories, laundry), and accountants and other administrative support personnel. Actual school administration is a fairly small budget item.

192. There appears to be a somewhat lower student-teacher ratio than in many countries. Such ratios are reported to be around 20 or so to a teacher in K-10 education in Ulaanbaatar. In rural areas, lower ratios are often a result of low population density in areas served by the school. In Ulaanbaatar, however, there may be options of consolidating schools if a higher student-teacher ratio is sought. Many schools, of course, have classrooms of limited capacity, so this option should be approached with caution. No fees are charged at any level of K-10 education, but kindergartens are now charging half the cost of food to the parents. Parents are expected to buy their children's texts, and this can be a sizable portion of their salaries if several children are in school. Most schools appear to have multiple copies of texts in the library for loan to students, and this should be encouraged; otherwise it is possible that the cost of textbooks, even if they are more available, could contribute to the drop-out rate.

193. To some degree, the education system is still producing the kinds of people required under the social, political, and economic structures prior to 1990. Although there is much more time in the curriculum for practical arts (pre-vocational) and the local authorities are encouraged to adapt up to a third or so of the curriculum to local needs, many teachers and administrators are not clear as to how to implement these changes. Similarly, it is clear that some families are not finding education useful enough to keep their children enrolled. This is especially so for young boys in rural areas, although the boys are increasingly dropping out in urban areas as well. Any ways in which the school program can better meet the needs of these families and their children should be explored.

194. In summary, the education system will continue for some time to shrink in terms of enrollments and in terms of facilities offered (boarding schools and kindergartens will decrease in number, for instance). The number of children not in school will increase dramatically. Illiteracy rates will climb and semi-literacy will increase, especially among rural populations. The current generation of children will be less educated than their parents, certainly an unusual situation. Ways must be found to slow down the erosion in the quantity and quality of education offered at the basic levels. Attention must be given to curriculum and materials adapted to current needs; priorities must be set so as to use scarce resources in a focused way and so as to assure that the entire K-10 education system does not collapse; nonformal education strategies must be introduced to reach school dropouts with education and training appropriate to their

life styles; educational administrators must receive training in how to manage in times of austerity; and guidance and counseling services must be established to help guide young people and their families as they make educational choices and as they choose career options. New options for the delivery primary and middle education must be explored including the possibility of small, multi-grade, one classroom schools (perhaps in gers) in the rural, isolated areas. Also, mobile schools could be designed to travel with the nomadic families. Both nontraditional means of providing formal schooling and nonformal alternatives deserve consideration.

Higher Education

195. The first nationally funded institution for formal higher learning, the Mongolian State University, was established in 1942 in the capital city of Ulaanbaatar. It had three departments, pedagogy, medicine, and veterinary medicine, and the primary emphasis of the new institution was teaching. Most of the limited advanced research was done under the auspices of the National Committee of Science which was not directly affiliated with the university.

196. By the mid-1950's, there was a recognition of the need to establish research programs in several of the academic areas represented among the faculty at the Mongolian State University. Thus, the first major reform of Mongolian higher education involved moving faculty at the Mongolian State University into independent research institutes where both teaching and research would take place. In 1958, the zoological-veterinary medicine faculty at the Mongolian State University was the first to become independent as a newly formed Agricultural Institute. Even though the National Committee of Science was amalgamated with the Mongolian State University in 1959, this new structure lasted only until 1961 when the Mongolian Academy of Sciences was founded, thereby perpetuating the pattern of concentrating advanced research in the Institutes of the Academy of Sciences rather than in the university. The Academy of Sciences also controlled awarding of the highest scientific research title, the Doctor of Science degree.

197. Continuing this trend over the years, the Medical Institute was formed from the medical faculty of the State University in 1961. The Polytechnical Institute, established as part of the State University in 1969, became independent in 1982. The Russian Language Teachers' College, established as part of the State University in 1979, became the independent Russian Language Institute in 1982. There was also some effort to establish higher education institutions in aimags with sizable populations located far from Ulaanbaatar. One example of this is the training institution for secondary school teachers, the Pedagogical Institute at Khovd near the western border of Mongolia. All of these institutes were authorized to offer postsecondary preparation of similar duration and award certificates considered the equivalent of academic degrees. Under this system of higher education, all costs were fully subsidized by the Mongolian government which, in turn, received subsidies from the Russian government in the form of instructional materials and scientific equipment.

198. The strong Russian influence on Mongolian higher education continued until the break-up of the Soviet Union. Legislation for the second major reform of higher education, passed late in 1990, mandated major re-structuring. The four institutes that were founded as parts of the Mongolian State University became universities in 1991: the Mongolian Agricultural University, the Mongolian Medical University, the Mongolian Pedagogical University, and the Mongolian Technical University. The Russian Language Institute was renamed the Foreign Language Institute and became part of the Pedagogical University. At this time, the Mongolian State University was also renamed the National University of Mongolia, and the Pedagogical Institute at Khovd became a branch of it. In addition to the National University, which had been the only university authorized to award advanced scientific degrees, all of the newly created universities were also authorized to begin developing masters and Ph.D. programs.

199. Two degree-granting colleges designed to prepare students for various business, commerce, and finance positions in the developing market economy of Mongolia were established in Ulaanbaatar in 1991: the College of Commerce and Business, and the Economic College. An eighth public higher education institution was created in 1991 by combining several institutes from the Academy of Sciences in Ulaanbaatar into the Mongolian Institute of Technology.

200. Another important result of the 1990 education reform was legislation enabling the establishment of private higher education institutions. The first of these institutions was founded in 1991. All private institutions of higher education must receive operating approval from the Ministry of Science and Education. Currently, eighteen authorized private higher education institutions exist and their areas of emphasis include business management, Mongolian studies, sport, foreign languages, traditional medicine, philosophy, accounting, and pedagogy. One-third of these private institutions emphasize foreign language training which is clearly an area of high demand in a time of market transition. Four emphasize Mongolian language or culture. The oldest of these institutions will be entering their third year of operation in September of 1993 while five more await approval of the MOSE to begin operation.

201. A further reform implemented in 1992 was a change in the degree structure that shifted to an American-style pattern (e.g., bachelors, masters, and PhD prior to the Doctor of Science). The bachelor's degree will require four to five years of post-secondary education (depending on the specialization and the institution); the masters degree will require another 2 years. A graduate student who continues with doctoral study will be required to study at least three more years, and write a dissertation in order to earn a Ph.D. Several more years of study and a major piece of research will be required to earn the Doctor of Science degree. Problems of equivalency are certain to exist between the former degree system and the new one and between Mongolian degrees and those offered in other countries.

202. There are two major goals of higher education in Mongolia.

The first is to prepare the highly educated professional and technical people necessary to satisfy the development needs of the country in its transition to a democratic government and a market economy. This will require a careful assessment of the quality and relevance of the curriculum currently in place as well as a systematic analysis of the extent to which the current distribution of faculty effort meets anticipated needs for highly educated individuals. It will also require upgrading of instructional and library resources. The second is to move from a fully government subsidized higher education system to one in which students and other beneficiaries pay a fair share of its costs. Beginning in September of 1993, all students in higher education will have to pay tuition. The government is in the process of establishing an agency to provide student loans.

203. Each public institution of higher education is relatively autonomous, with its own administration and budget. The chief administrative officer is the rector, appointed by the Minister of Science and Education, usually from recommendations made by duly constituted search committees. While institutions differ in some ways, the general pattern in the national universities is for the rector to appoint up to three deputy rectors, most commonly one for academic affairs, one for financial affairs, and one for research. Faculties are organized into departments with chairs and a dean. This group of administrators tends to comprise the Rector's Council and meets two or three times per month to advise on various procedural issues. A second group, the Learned Council, is larger and represents the senior scientific people in the institution.

204. There are two other bodies that play advisory roles in Mongolian higher education: the Higher Education Reform Commission and the Council of Rectors. The Higher Education Reform Commission was established by the Great Khural in 1990 to provide advice on policy related to facilitating the reform of higher education, with a special emphasis on making the subsector more responsive to the demands of a market economy. The chairman of this commission is a member of the Great Khural and reports to the Chairman of the Standing Committee on Education, Science, and Culture Policy.

205. The Rectors' Council was established by the Ministry of Science and Education and includes all of the rectors of the public universities, the rector of the College of Commerce and Business, the chairman of the Association of Private Higher Education Institutions, and the Director General of the Postsecondary Education Department in the Ministry of Science and Education. The rector of the National University is chairman of the Rectors' Council. It advises the Ministry on both policy and operational procedures related to public and private higher education.

206. Textbooks and other print materials are in short supply and library resources are severely limited at the universities. Therefore, most instruction and student learning occurs in classrooms, seminars, and laboratories. This means that students can spend more than 30 hours per week in instructional settings. Most programs average about 1000 hours of instruction per year, with the longest bachelors degree

programs (e.g., those in the natural sciences and engineering) averaging more than 5000 total hours and taking five years to complete.

207. Each of the public institutions of higher education in Mongolia was established with a particular mission, though as the institutions have developed some commonalities have also evolved. The National University of Mongolia is the only one in Mongolia which could be said to be comprehensive, offering degrees in the natural sciences, social sciences, humanities, and law. The National University is organized into five faculties and four training and research institutes with 53 departments. Each faculty and institute has a dean or director and there are chairs for each of the departments. The faculties include Mathematics, Physics, Natural Sciences, Social Sciences, and Law. As part of an apparent effort by the Ministry of Science and Education to consolidate the higher education system, the Pedagogical Institute in Khovd and the Economics College in Zavkhan became branch campuses of the National University in 1992.

208. The Mongolian Technical University is the primary provider of preparation for Mongolian engineers in a variety of fields. The Technical University consists of four schools and three institutes, offering more than 40 specializations. The Technical University consists of four schools and three institutes, offering more than 40 specializations. It includes a School of Electrical Engineering, a School of Mechanical Engineering, a School of Geology and Mining Engineering, and a School of Civil Engineering. Also part of this university are the Computer Science and Management Institute, the Telecommunications Institute, and the Transport Engineering Institute. There is also a branch of the Technical University in Darkhan which emphasizes construction technology, offering programs in construction engineering, metallurgical engineering, mechanical engineering of building materials, machinery technology, and building material technology.

209. The Medical University prepares general practice physicians, pediatricians, public health managers, pharmacists, dentists, and practitioners of Mongolian traditional medicine. Clinical instruction is provided by six departments and two institutes. There is no teaching hospital affiliated with the Medical University, but there are agreements with 14 clinical and base hospitals in Ulaanbaatar as well as 17 hospitals in the country-side where students receive practical training.

210. The National Agricultural University prepares a variety of agricultural specialists in its five faculties: Veterinary Medicine, Animal Husbandry and Zoology, Agronomy, Engineering Mechanics, and Economics. It also has branches in Bayanchandman, Darkhan, and Khovd. The Agricultural College in Khovd has had primarily specialized secondary school programs, but will begin shifting to an entirely postsecondary program in September of 1993 by admitting first year students only. The Academy of Sciences' Agricultural Research Institute in Khovd will also become part of the Agricultural College there.

211. The primary mission of the Pedagogical University has been to prepare secondary school teachers, teachers for primary and kindergarten teachers colleges and, to some degree, organizers and teachers for youth organizations such as the Young Pioneers. Its structure includes five academic divisions (Mathematics; Natural Sciences; Social Sciences; Pedagogy; Literature; and Fine and Studio Arts), three institutes (Institute of Foreign Languages, Institute of Sports, and Institute of In-Service Teacher Training), and three colleges (Teachers' College of Ulaanbaatar, College of Kindergarten Pedagogy, and College of Music Pedagogy). There is also an affiliated regional institution in Erdenet, the Institute of Foreign Languages.

212. The Economic College of Mongolia was originally founded in 1924 as the Financial and Technical School. Under the Ministry of Finance, the mission of this school was to train accountants and economists for the command economy in a two-year (postsecondary) non-degree program. In February of 1991, the government of Mongolia created the current Economic College on the basis of the old technical school with a mandate to prepare its students for careers in economics, banking, accounting and business in a market economy. The College of Commerce and Business was originally established in 1924 as a training center for traders and later became the Traders Technical School, a specialized secondary school under the Ministry of Trade. The College of Commerce and Business, was set up in 1991, replacing the earlier school. It is now providing pre-service and in-service training of managerial staff in business and industry; developing a program of research and development on marketing and business practice in a market economy through its Marketing and Business Research Center; and is beginning to offer consultancies and research services to private firms and companies.

213. The Mongolian Institute of Technology was created as part of the higher education reforms of 1992 which urged the integration of teaching and research within higher education. Several of the research institutes of the Academy of Sciences have already been moved into universities. This university represents a different approach, namely, combining 16 institutes of the Academy of Sciences into a new university oriented specifically toward the preparation of high technology specialists. Some of these institutes were formerly affiliated with enterprises and the new institution is seen as maintaining close working relationships with industry.

214. The National University of Art was established as the Institute of Art in 1990, when the faculties of theater and cinema performance, voice, and studio art separated from the State Pedagogical Institute. In March of 1993 it was renamed the National University of Art. It prepares students for professional careers in Mongolian and classical music performance, conducting, voice, theater and cinema performance as well as production, and studio art. It also has programs for music and voice teachers, and will begin a dance program this year. Programs are four or five years long and will lead to a bachelors degree. The full-time faculty of close to 90 faculty is supplemented by an equal number of part-time faculty, most of whom are experienced performers and artists. A masters degree program in

national music was started this year. Except for those living in five western aimags, prospective students must have a ten year secondary education certificate and come to Ulaanbaatar to audition or present a portfolio of their work. It also admits graduates of the Arts College in Ulaanbaatar. There are approximately two candidates for each space. Tuition is expected to be 28,000 tugrugs, and all students will be eligible for loans from the State Training Fund.

215. The National Military University was founded in 1921 as a training institute for commissioned officers, but became the "General School for all Soldiers" in 1924. Over the years it has included programs for training both commissioned and non-commissioned officers. It was renamed a university in 1991. The Military University enrolls about 700 students, only 20 percent of whom are studying for an academic degree, and has 150 faculty (100 of whom are full-time). Since the Military University is under the Ministry of Defense, no statistical data about its students and faculty are available from the Ministry of Science and Education. Specializations offered include a variety of military and engineering subjects. Candidates for admission must have a ten year secondary education certificate, be no older than 26, pass a physical exam, and score high on the entrance examinations. There are five applicants for every student space. The bachelors degree program is five years long, but some non-degree programs preparing military officers are as short as two years. A post-graduate (Ph.D.) program was begun in December of 1992. All academic programs are subject to approval by the Ministry of Science and Education. The Military University has the same general problems as the other higher education institutions in Mongolia: qualifications of teachers need to be improved; training facilities and equipment are outdated; and library resources are inadequate. Most military equipment is Russian. This institution is fully funded by the Ministry of Defense. Students pay no tuition and costs of textbooks, uniforms, housing, and food are also covered. Bachelors degree recipients are required to serve ten years in the military or repay the costs of their education on a prorated basis.

216. According to government statistics, enrollment in degree-granting institutions of higher education peaked in 1985 at 24,597. By 1990, as the transition to new economic and political structures got underway, higher education enrollments had dropped to 16,910, or by a factor of almost one-third. In 1991, the overall enrollment figure was 16,801 and in 1992, it was 16,917. These reductions are a result of lower estimates of manpower requirements by the National Development Board and reduced funding available for these programs. For the short term, at least, the numbers of students enrolled in higher education degree programs seems to have stabilized. This nation-wide plateau masks, however, some very real differences in trends across institutions. Both the National University and the Art University have been increasing their enrollments since 1990, the former by close to 30 percent and the latter by almost 40 percent. Because the Economic College and the College of Commerce and Business are both in the process of building new bachelors degree programs, they are also both increasing their enrollments. This suggests that there is a strong demand for courses and programs preparing people for business and

financial positions in the emerging market economy of Mongolia. Enrollments at the Pedagogical University and Technical University have been stable since 1990. Two institutions show decreases in enrollment. The Medical University's enrollment declined (a largely artificial change caused by the separation of programs such as nursing from the larger institution), but only by about 10 percent. The most dramatic decrease in enrollment appears for the Agricultural University which declined by almost half over the past three years. This is particularly striking for a country in which agriculture plays so significant a role in the economy but reflects perceptions that such specialists were overproduced in the past and state farms no longer exist to sponsor students. Finally, across all the institutions graduation rates over the past two years have been reasonably stable.

217. Staffing has been reasonably consistent with enrollment patterns, though only for the large increase at the National Art University and the large decline at the Agricultural University have the shifts in numbers of teachers followed the enrollment shifts in direct proportion. The teacher/student ratio for the 1992-93 academic year is most favorable at the National Art University (1/4) and least favorable at the Economic College (1/13). Teacher/student ratios for other institutions are: National University (1/8.5), Pedagogical Institute-Khovd (1/11), Technical University (1/7.5), Pedagogical University (1/12), Medical University (1/9.5), Agricultural University (1/10), University of Technology (1/4.5), and College of Commerce and Business (1/7.5). Most institutions have predominantly male teaching staffs, ranging from 54 percent at the Medical University to 80 percent at the Agricultural University. Female teachers predominate only in the Institute for Foreign Languages (82 percent) of the Pedagogical University, the College of Commerce and Business (77 percent), and the National Art University (52 percent).

218. There are no data that indicate directly how current the academic knowledge of teaching faculty in higher education really is. It is reasonable to expect, however, that faculty who have many years of experience were educated under very different social and economic systems than that which currently exists in Mongolia. Thus, it is appropriate to examine some indicators of the age of faculty in order to get some indication of the numbers and proportion of faculty who might be candidates for some sort of further education to improve knowledge of their academic field as well. With more than 25 percent of teachers having worked at least 21 years in higher education, the universities in Mongolia have a very experienced group of teachers. The National University and the Agricultural Universities have both the most experienced and the oldest teaching staffs. Consequently, they might be targeted for a review of teacher qualifications and the establishment of a professional development program. The faculty at the developing Economic College is both the youngest and least experienced.

219. The higher education institutions in Mongolia prepare specialists in over 100 different professions, from physicians to veterinarians, from secondary-school teachers to engineers and research workers. The average age of students in higher education institutions

is 21 years and the time of study for a first academic degree averages between 4 and 5 years. The change to an American-style degree structure has already been mentioned as a major influence on the curriculum. Faculty groups in each of the universities seem to working on curriculum revision that includes improving existing curricula, introducing more up-to-date materials into the curriculum, and redefining degree structures. Foremost among them is an effort to move away from narrowly defined specializations (with no electives and compulsory courses and course sequences) into higher education that prepares people to be able to adapt to the wide variety of employment opportunities that will develop as the country shifts from a command to a market economy.

220. All indications are that facilities and equipment present major problems across all levels of education in Mongolia. Buildings and other facilities are in increasingly poor repair due to lack of funds for maintenance. Heating costs have increased so rapidly that many educational institutions are forced to spend half or more of their budgets simply to keep buildings warm in winter. In higher education, scientific equipment tends to be outdated (much of it received from Russia a decade or more ago) and computers are in short supply.

221. In the years 1990-92, postsecondary colleges consumed about 8 percent of the government education budget, and universities consumed about 9 percent. Until 1992, all students were given stipends. However, it has been decided that from 1993 general stipends will be given only to poor students, and that stipends will be given on a loan rather than a grant basis. Applications must be supported by extensive documentary evidence. As one major cost-recovery measure, the government has decided that its higher education institutions should charge fees. This decision was announced in July 1992, and was to have taken effect that year. Some government institutions did admit some fee-paying students in 1992, but the government, after having been alerted to complexities in the implementation of the new policy, decided to delay general implementation until 1993.

222. According to the policy, the government remains responsible for fixed expenses, but expects the variable expenses to be covered from fees. Variable expenses are generally estimated at 30 to 50 percent of the total cost. Fees have a wide range both between and within institutions. Most institutions charge at least 20,000 tugrugs per annum, and some charge over twice that amount. The Technical University, for example, charges different fees for different courses and for different years. The university trains people for 41 professions, and most courses last five years. Fees for 1993-94 range from 22,000 to 49,000 tugrugs, and are based on a detailed estimate of the costs of different course components.

223. Moreover, even with fees exceeding 20,000 tugrugs, the majority of institutions found that they had many applicants. For example, the College of Commerce and Business, which proposed in 1993 to charge 25,000 tugrugs per annum for the Bachelors' level course, was able to admit only 25 students from Ulaanbaatar, even though it had 250 applicants. Likewise, the Technical University had spaces for 220

students from Ulaanbaatar but had 800 applicants. It appears that, at least in 1993, a sufficient number of students for at least some specialties had enough money to pay the fees, and considered such payment a good investment. Recognizing that fees could discriminate against students from poor families, the government has established machinery for student loans from a State Training Fund. To get loans, students must first find employers, such as enterprises, ministries or local governments willing to sponsor them. These employers are asked to guarantee repayment of the loans.

224. Given the limitations on facilities and equipment, the Mongolian higher education system manages to be remarkably effective. Instruction is delivered, students seem to be reasonably successful at finding employment after graduation, and some faculty even manage to programs of research. There does, of course, appear to be considerable variation in quality across programs within institutions as well as across institutions. In the absence of any real evidence on quality of the curriculum, it is very difficult to judge the level of preparation in Mongolia in comparison with bachelors degree study, either in other Asian countries or in Europe and the United States. Students must rely heavily on rote learning and careful notetaking as opposed to studying material in current textbooks. There is an expectation that students will be supplied with all needed learning materials by the higher education institutions rather than having to purchase any textual materials themselves. Hence, virtually all student learning appears to take place in the classroom where material is delivered by teachers. There appears to be only very limited supplementary work expected in the library. Furthermore, access to books is strictly controlled, so there is little opportunity for students to explore materials in their fields of study.

225. The higher education sector needs improved facilities, better instructional materials and teaching resources (including laboratories), better scientific equipment, and considerably improved libraries. Access to scientific information is very limited because of the high price of books and journals. Also, there is no clear planning process for higher education at the national level. This is clearly an area of great need and efforts should be exerted toward the development of an effective higher education master planning process. Currently, most of the universities and colleges are seeking support for their own particular needs rather than having requests reviewed by some oversight body that might set priorities and strategies for development of higher education in the total national context. The biggest constraint in the higher education subsector is quite simply lack of money. The economy of Mongolia cannot afford massive investments in the human resource and education sectors because there are too many other pressing needs, particularly those in the areas of energy, transportation, and communication. All of these, in turn, are quite important for the development of the higher education sector. There is no shortage of desire and enthusiasm among the Mongolian people for reform and improvement of higher education, but there is just not enough government funding available to make very many of the changes necessary to upgrade the system.

226. There is an interesting anomaly in Mongolian higher education with respect to equity. On the one hand, women predominate with 64 percent of all students pursuing academic degrees in Mongolia. In fact, in all major fields except mathematics/computer science, engineering/architecture, and transport/communications, women comprise at least half of the enrolled students. Even at the Technical University, almost half of the 1993 graduates were women. On the other hand, the proportion of women teachers does not reach the proportion of women students in any of the universities except at the Institute of Foreign Languages which is now part of the Pedagogical University. Also in the newly developing Economic College and College of Commerce and Business, women are well-represented on the faculty. In the traditional disciplines, however, there is some way for women faculty to go in order to reach equity.

227. In 1992-93, only 16 percent of those studying for an advanced degree beyond the bachelors were women, and fewer than 10 percent of the advanced degree recipients in 1993 were women. This suggests that concerted efforts will have to be made to increase significantly the numbers of women enrolled in advanced degree programs if their representation on the higher education faculties is to begin moving toward the proportion of female graduates at the bachelors degree level. Finally, there is only one women in a senior administrative position in any of the public universities. In the private institutions, however, four have female founders and rectors and one has a female rector who was not its founder.

228. The primary internal efficiency issue in higher education has to do with duplication of facilities and programs. Each higher education institution is currently operating quite independently of others which may have similar programs and/or resource needs. Consequently, there is no real cooperation or coordination among institutions, except on an occasional project. Even though a tuition payment system has presumably started, individual institutions are not free to increase revenue by increasing admissions in high demand areas such as foreign languages and business. Enrollment quotas are set by the National Planning Board, though individual institutions can extend offers of admission to additional students whose entrance test scores are high and who are willing to pay tuition on their own. Further, it is not known how many tuition-paying students will actually enroll in September of 1993. It is also very hard to estimate unit costs in order to make comparisons between institutions. Because salary schedules are set by the Mongolian government, there is a very small range between the highest and lowest paid staff members in higher education institutions.

229. The unemployment data suggest that those who earn degrees in higher education do well in the workplace. Also, data from the Technical University suggest that virtually all graduates, with the single exception of those trained in fields related to construction, find employment immediately upon graduation. Of course, as has already been mentioned, enrollment quotas are still being set at the national level, regardless of student demand for certain specializations. As long as manpower projections driving these quotas are accurate and they

continue to be used for higher education admissions, graduates are virtually assured of employment.

230. In summary, the higher education sector is functioning reasonably well considering the serious shortages of instructional materials and deterioration of physical plant. It is, however, rapidly losing its capacity to prepare students whose training is competitive with world standards. The scientific research establishment in Mongolia is also suffering because it, too, is increasingly not competitive. Hence, if graduates of Mongolian higher education institutions are to be prepared adequately for the demands of a world economy and for the future development requirements of the country, there is a need for some major organizational reform through more effective coordinating mechanisms as well as an infusion of funds for a variety of instructional materials and equipment.

Vocational-Technical and Nonformal Education

231. Vocational and technical education are an important source of the trained manpower on which Mongolia's economy depends. A majority of manpower training occurs through formal schooling and to a lessor extent through nonformal out-of-school training. The formal Mongolian manpower training structure makes a clear distinction between vocational education and technical education. Vocational education is training aimed at craft or trade skill development. Technical education involves academic and occupational training aimed at developing higher order skills and knowledge -- such as evaluating, analyzing and synthesizing. Such higher order training prepares manpower for technician or semi-professional grade work.

232. Nonformal education is an equally important part of the education sector; it reaches those people who do not have easy access to programs in the formal education system. Review, analysis and description of the goals and priorities of the nonformal education subsector is difficult because there is little documentation and/or action to illustrate a systematic effort at organizing this subsector. There is little evidence to suggest that comprehensive goals and priorities exist for the nonformal subsector. Two efforts, however, hold promise as vehicles for lending direction to and providing structure for a comprehensive nonformal education system in Mongolia. The first effort occurred in June 1992 when a National Workshop on the Preparation of Literacy Follow-up Materials was conducted in Ulaanbaatar and Argalant somon. While the workshop developed materials for school drop-outs and for housewives of nomadic families, it also provided momentum for development of a non-formal education system in Mongolia. The second way concepts and programs of nonformal education are being introduced in Mongolia is through the goals of the National Program of Action (NPA) of Mongolia. The NPA reflects the aspirations of the Government for the betterment of its children and is based on the goals called for at the World Summit for Children (1990). Nonformal education efforts are independently directed at meeting the learning needs of specific subgroups at the national level or in targeted rural settings. These learning activities are carried-out by

international organizations (NGOs, voluntary agencies, church affiliated groups and enterprises.

233. Prior to 1921 a formal vocational education structure did not exist in Mongolia. An increased need for formalized vocational education arose (1921 to 1933) when newly formed industry, transportation, trade, and communication sectors along with infrastructure development called for increased numbers of skilled workers. Unable to fulfill this need through traditional training means, vocational schools were established within factories and cooperatives. Apprentice training emerged as a primary means of developing desired skills. The next 30 years saw continued need for more qualified workers as industry and commerce expanded. Specialized vocational primary schools were opened in Ulaanbaatar. Industry and agriculture schools were also established to aid development of the mining and agriculture sectors. It was during this period that Mongolian learners were first attached to Russian masters. The Soviet training system greatly influenced development of formal vocational-technical training in Mongolia.

234. Institutional and system structures designed to train qualified operatives, technicians and semi-professionals are in transition since 1990. At this time Mongolia provides formal workforce training at the secondary and postsecondary levels including higher education. The formal training structure consists of distinct yet interrelated components providing operative, technician, semi-professional, and degree level training. One of the major system components includes single and multi-step training and production centers (TPC). These centers were created by closing and/or combining all but three of what were formerly known as secondary vocational-technical schools. The three remaining secondary vocational-technical schools continue to provide limited operative training.

235. The TPC's are part of a three-step training structure. They focus on operative training at the first step and higher order training at steps two and three. Completion of step one enables the graduate to enter the labor force as an operative. Successful completion of steps two and three qualify the graduate as an operative and/or a technician or semi-professional. Graduates of three step institutions may elect to continue their training by entering a higher form of education -- institute, school or college.

236. A second structural component includes institutes, schools, and colleges. Some were formed through a combination of institutions that were formerly postsecondary technical professional schools. These new institutions develop higher order skills and knowledge for those students wishing to enter the labor market as technicians or semi-professionals. Some of these same institutions also deliver selected operative skills training. Universities too, play a role in the preparation of a qualified workforce. While not delivering operative training, these institutions provide a means by which technically or semi-professionally trained graduates of TPCs, step schools, institutes, schools and colleges can earn bachelors, masters and doctoral degrees.

237. Training and Production Centers are one of the key means by which vocational and technical education are delivered. There are 26 TPCs at levels one and two. The third level includes four institutions -- two colleges, one school and one institute. There are 22 level one training centers which provide one to two years of operative skill training for graduates of grades eight and ten. Sixteen level one training centers are located in the provinces and provide a general mix of vocational skill development appropriate to the locale. Four specialized level one training centers are located in Ulaanbaatar -- two construction and one each energy and public service training centers. Two level one specialized training centers are located outside Ulaanbaatar -- one light industry center in Erdenet and a construction training center in Darkhan.

238. There are five level two industrial training centers which provide two-step training in 2 to 3-1/2 years for eighth grade graduates. These centers prepare operatives at the first step in 2 to 2-1/2 years and technicians or semi-professionals at the second step in 3 to 3-1/2 years. At level two - step one, operative training is more theoretical than what is experienced at level one. Students cannot transfer from one level to another. Three level two training centers are located in Ulaanbaatar and provide training in light industry, food and construction. One agriculture level two center is located in Dornad. A construction training center serving as both a level one and two training center is located in Darkhan. Training centers are attached to the Ministry of Science and Education.

239. The third level of the structure is comprised of four individual three-step institutions. They accept both eighth and tenth grade graduates and prepare them in up to three steps for work as operatives, technicians, engineers, technologists or researchers. Level three institutions include the College of Agriculture at Bayanchardman (operated under the auspices of the Agriculture University) and three institutions in Ulaanbaatar. These institutions include the Transportation School and the Information Technical Institute, both of which are associated with the Technical University. The fourth level three institution is the Railway College which is an independent organization.

240. Although a comprehensive structure for nonformal education does not exist, a significant step toward achieving a national structure for nonformal education was taken on 27 May 1993 when the National Program of Action (NPA) was approved by the full body of the Cabinet. This action has created a working committee to coordinate and monitor implementation of the NPA in collaboration with the United Nations Children's Fund (UNICEF). The working committee is chaired by the Minister of Labor and Population Policy (MLPP).

241. Enrollments in vocational and technical education have been declining since 1990. The number of enrolles in technical vocational schools at the secondary level declined by 17,382 students during a three year period. Only 194 students enrolled in foreign vocational study in 1992 whereas 2,636 were enrolled in similar programs in 1990.

New admissions were off by 5,705 registrants over the period. The decline in graduates from secondary level schools. By vocational specialty and year of graduation, the available data illustrate reduced output in all five reported vocational areas -- agriculture, construction, industry, trades and public service.

242. During the 1990 school year approximately 45 percent of the TPC student population was female. In 1991 there was a drop in female enrollment to only 36.5 percent of the school population. Female representation dramatically reversed itself in 1992 when it accounted for approximately 52 percent of the student population thereby achieving equity balance by gender. September 1993 enrollment estimates for TPCs suggest still further reductions in student numbers. For the country as a whole, there will be 5,139 vacant seats at the TPCs in fall 1993. Those TPCs located in cities will have 1,015 unused seats. The central region will have the greatest number of unused seats with 1,790 vacancies. The western region has the next highest vacancy rate with 638 empty seats. The southern, northern and eastern regions follow with 692, 603 and 401 unused seats respectively. A continued decline in enrollments and subsequent under utilization of training capacity is, in part, caused by collapse of the command system wherein the State ordered-up exact numbers of people to be trained for specific jobs. Those jobs are no longer available, but the seating capacity is.

243. Specialized postsecondary technical/professional programs (many of which have been reassigned to institutes, schools and colleges) registered similar declines in student numbers. There were 18,476 students enrolled in specialized postsecondary programs in 1990. Just 8,703 students registered in these institutions in 1992-93. During the three year period, local enrollments in specialized post-secondary programs declined by approximately 53 percent and foreign programs by approximately 32 percent. New admissions for both local and foreign study programs declined. Local admissions were off by 3,428 students during the period. Just six foreign admissions for post-secondary technical/professional study were granted for 1992 in contrast to 209 in 1990. The foreign study program has been dramatically reduced because support has been withdrawn from its primary sponsors -- the former Soviet Union and eastern European countries.

244. The evidence of reduced interest in further education may be a result of the change to a market economy, privatization of livestock (offering financial rewards for livestock breeders), elimination of stipends for vocational students and boarders, and the prospects of a tuition fee for all students. The tuition fee is scheduled to go into effect in September 1993. Its influence on school drop-outs remains to be seen. There is little evidence to suggest that the needs of drop-outs are being served through the existing formal or non-formal education sectors.

245. There have been dramatic reductions in numbers of vocational and technical education teaching staff in the past three years. During this time the total number of vocational and technical teachers

declined by 1871. Teachers in TPCs experienced the greatest reduction in force with 1071 positions vacated. Vocational and technical teacher reductions in institutes, schools, and colleges (some of which were former specialized postsecondary technical professional schools) number 800.

246. There were nearly an equal number of female and male teachers delivering instruction in training and production centers programs in 1992 (501 females and 505 males). This represents a decline of 477 female and 334 male teachers during the three year period. Approximately 65 percent of the TPC teachers have less than 15 years experience while nearly 51 percent of the step school teachers possess 15 years or less experience. These teachers, who represent a majority of those directly engaged in delivery of vocational and technical instruction, mirror the experience levels of all teachers in postsecondary schools, colleges, and universities. Approximately 56 percent of all those teachers possess between one and 15 years of teaching experience. This group of teachers represents a large and valuable resource that will influence the direction and quality of vocational and technical education for years to come. For them to grow professionally, and in turn contribute positively to education, they will require continuing renewal and retraining opportunities.

247. The age distribution of vocational and technical education teachers is not unlike that of their colleagues in other postsecondary schools, colleges, universities and private institutions. The largest number of vocational and technical education teachers are between 30 and 50 years of age. The next largest group is less than 30 years of age. Slightly less than seven percent of the TPC teachers and approximately 10 percent of the step school teachers are 55 years of age or older.

248. Three hundred-sixty TPC teachers received their preparation at universities or higher institutions with 298, 70, and 18 teachers receiving their education at colleges, special secondary schools, and secondary schools respectively. Approximately 77 percent of the step school teachers received their training at higher level institutions, none at colleges, and approximately 23 percent at the secondary level. Prior to 1991, vocational school teachers were graduates of higher education institutions with teaching qualifications for vocational schools. Additionally, the former German Democratic Republic and the USSR provided visiting master teachers to Mongolian institutions. Engineers from industry also provided another source of vocational teachers. The specific nature of vocational and technical education requires teachers possess a unique and specific blend of educational and practical experiences unlike those needed by their teaching colleagues in non-vocationally or non-technically oriented programs. Qualified vocational and technical teachers are deemed to be those who possess an appropriate blend of higher eduction along with actual experience in the operative or technical area for which instruction is given.

249. The course of study followed at Training and Production Centers represents a substantial part of the formal effort to provide

vocational and technical education. These centers provide training in three broad curricular areas -- agriculture, construction and industry -- each offering instruction in 15, 24, and 70 professional specialties respectively. The length of the school year for both students and teachers is approximately 36 weeks. Some programs may run longer due to the nature of the profession and its requirements for practice at the worksite. Students spend approximately 36 hours per week in school. They attend classes six days a week. The primary language of instruction is Mongolian. Some highly specialized and technical courses may be taught in Russian. Curriculum, to a large extent, reflects the needs of the former command system where specific numbers of students were ordered trained in narrow specialties. This training is characterized by a collection of long-term school-based courses of one, two, and three years in duration. Changing workforce needs may well require a judicious mix of short and long-term instruction both in-school and out-of-school. These experiences will need to address job orientation, career planning, and pre-occupational training and retraining.

250. There is a decided lack of instructional materials at all levels of vocational and technical education. There are insufficient numbers of current textbooks and reference manuals to meet the learning and instructional needs of students and teachers. Those materials that are available are mostly outdated and are usually printed in Russian. There is also a shortage of paper and related instructional supplies. Teachers do a remarkable job of instruction given the lack of instructional materials. Teachers have devised models, mock-ups, and other instructional aids to help them communicate ideas, concepts and skills to their students. Master teachers too, are to be commended for their ingenuity and resourcefulness as they struggle to teach students good practice without benefit of appropriate workshop resources. They teach by example and demonstration and expect students to emulate good practice.

251. The relationship of theory to practice for operative, technician, and higher level education varies. As students move along the vocational and technical education continuum their course of study increasingly becomes more theoretical in nature and involves less practice. Students engaged in operative training will first spend 20 to 30 percent of their time in theory with 70 to 80 percent devoted to practice. As students seek to learn higher order skills and knowledge they experience more theory instruction and less practice. At the conclusion of the higher education experience, 70 to 80 percent of the instruction is theoretical in nature. In some instructional areas, however, there is considerable difference between the amount of practice that actually occurs and that which is stated in curriculum documents; far less time may be devoted to practice because of the shortage of raw materials and/or a lack of funds to purchase them.

252. Prior to 1990, vocational and technical education students gained actual work experience in government factories. Because of the privatization of industries and a currently sluggish economy, these on-the-job training sites have all but disappeared. In fact some industries reportedly charge fees to TPCs for placing students on-the-

job. In response to this loss, TPCs have initiated in-school enterprises -- furniture manufacturing, bread and pastry making, and art metal production to name just a few. These enterprises not only replace lost on-the-job training sites in industry, but generate income for both students and TPCs alike.

253. Comprehensive curriculum does not and should not exist in the nonformal education subsector. The very nature of the subsector demands unique and specific courses of study be made available to users. These courses of study must be flexible to meet the varying needs of people in a variety of different locations and at different times. Nearly all ministries are engaged in some form of nonformal education activity for their constituents. A variety of nonformal education activities are occurring independently without coordination. The quality of these activities may be improved and better use made of limited resources by establishing a mechanism for coordination of effort. Through such coordination all parties will learn which methods work best, what comprises a successful facilitator, and which materials are most effective. Much remains to be learned about the nonformal sector and its linkages, methods, teachers, and materials.

254. Training and Production Centers are the responsibility of the school director, both for day-to-day operations and for policy. The TPC director is the link to the Ministry of Science and Education, other ministries, and universities. Three institutions are affiliated with two Universities and their directors are links to the parent institutions. The Transportation School and Information Technology School are both affiliated with the Technical University and the directors are links to the University. The Agricultural College at Bayanchardman is affiliated with the Agricultural University and the College's director is the link with the University.

255. Directors of TPCs are responsible directly to the Postsecondary Education Department of the MOSE. That department is headed by the Director General of Postsecondary Education and consists of a deputy director of management and administration for professional education and six officers in charge of various programs. The officer in charge of vocational education -- management, administration and methodology -- is the person with whom TPC directors make direct contact. Directors of institutes, schools and colleges in which vocational and/or technical education takes place deal with the same officer. The remaining officials in the MOSE Postsecondary Department are in charge of students studying abroad, higher education, policy, and integration of training practice.

256. Management personnel at the MOSE, TPCs, and schools, institutes, and colleges with vocational technical programs possess limited formal management training. Their management skills and knowledge have been developed through on-the-job experience and with the aid of short-term training seminars or courses. For a majority, their formal preparation has been in higher education through study in

engineering, science, mathematics, or similar areas. Still others have come through the ranks of teaching.

257. The average age of all 26 TPC facilities is 20 years. Instructional equipment used in the 26 facilities is, on average, 17 years old. When categorized by location, the eastern region of Mongolia has the oldest TPC facilities and equipment -- 27 and 26 years old respectively. Those facilities and accompanying equipment found in western Mongolia are, on average, 25 and 20 years old. The central region's TPC facilities are 22 years old with equipment averaging 17 years of age. Those TPCs located in cities are housed in facilities averaging 18 years of age with equipment of 13 years average age. The central region does have one four year old facility with equipment of like age. The northern region has three TPCs averaging 13 years in age. This region also possesses a four year old TPC facility and instructional equipment. Three production and Training Centers in the southern region average 15 years of age with equipment being an average of 12 years old. One of the southern region's TPCs is only four years old. Equipment of this age which has been used for both instruction and production activities is in need of overall repair and/or replacement. Machines are operator controlled and not fitted for computer control. Safety guards and devices to protect the health and safety of students and teachers are in short supply. Repair parts, lubricants, special hand-tools and manuals are in short supply.

258. Unit costs for all vocational and technical education are 9333 tugrugs. The vocational school drop-out rate is reportedly 2.7 percent and therefore does not significantly increase costs. Costs associated with these unique and specific vocational training requirements are substantial. This is particularly true of training and production center workshop buildings that are on average 20 years old. They require continual costly repair and maintenance of special features such as ventilation, electricity, water, and chemical storage. Similarly, power machines averaging 17 years of age are in need of constant repair and maintenance or costly replacement. Workshop practice also requires costly raw materials. To complicate matters, changing workplace technology and subsequent worker skill requirements will necessitate purchase of new and different machines, tools and materials. These costs are competing with other high cost items such as student stipends, teacher salaries, and benefits and heating. Teacher salaries are already well below those for similar professionals working in other sectors. Reducing teacher salaries to increase spending for buildings, equipment, and the like would place the entire training system at risk. Attempts to reduce costs by eliminating student stipends and tuition support have been initiated. A plan to eliminate out-right grants-in-aid is scheduled to go into effect in September 1993. At that time students requiring assistance will apply for low interest loans (three percent repayable over ten years) to cover expenses and tuition.

259. Vocational and technical training is financed through a combination of State support from the Ministry of Finance and local funding. Funds are provided to aimags through the Ministry of Finance. The manner in which State and local funds are allocated for

educational purposes is left to the discretion of local authorities. Vocational technical schools must compete for finances along with schools from all other educational levels. All external support of vocational and technical education disappeared when the former Soviet Union and Eastern European countries discontinued their aid to job training programs. In combination, vocational and technical education, nonformal education, and the private sector must seek external support of their efforts to prepare a qualified workforce for Mongolia's emerging market economy.

260. The quality of vocational and technical instruction varies greatly among institutions. Quality in vocational-technical schools has suffered in recent years. This has been the result of the transition from a command society to a market economy. A transitional period plagued by severe monetary problems adversely affected the vocational-technical education system and its supportive components -- administration and finance, population/access, personnel, student services, facilities and equipment and instructional programs. The management, planning, and financial system component has undergone significant change since reforms first began. A preoccupation with structural and organizational reform has left much remaining to be accomplished.

261. Access to vocational-technical programs which result in related employment and/or continuing education for all students has also suffered during the transition period. While access to vocational-technical education for all students is facilitated by offering a sufficient number and variety of programs (approximately 100 different ones), a majority of these programs do not prepare students for occupations that have employment potential and/or result in related employment and/or continuing education. Rather, these programs of study reflect the heavy industry manpower needs of the former command system. Comprehensive studies of potential employment needs of the new market economy have not been undertaken. Data resulting from follow-on studies of vocational-technical program completers is incomplete, at best, making it difficult to substantiate whether or not programs are meeting existing employer requirements.

262. The quality of vocational-technical education programming has also suffered because of the large number of teachers (1871 since 1990) who left teaching. Some were made redundant by declining numbers of students and the subsequent restructuring of institutions while others left teaching for higher paying jobs in the private sector (some receiving three to four times their former salary) or to open their own businesses.

263. The preceding discussion of vocational technical and nonformal education in Mongolia suggests that the needs are many.

Mongolia is facing serious problems in vocational and technical education and in meeting the needs of people who must be served through the nonformal education subsector. The current formal vocational and technical education structure was designed to meet the needs of a plan economy. That structure may have served well, but is no longer relevant to current and emerging needs of a market economy. There is a

need to develop a national employment training policy beyond the general directives of the 1991 Education Law. A clear statement of goals, objectives and priorities must be developed and adopted. That policy must first clarify the role of the State and then clearly delineate the role and responsibilities of government ministries in the national training scheme. There is a further need to specify the role and responsibilities of those at the local level who would carry-out national employment training policy. Additionally, there is need to involve and clarify the role and responsibilities of the emerging private sector, non-governmental organizations, charitable groups, and religious units and other relevant groups.

264. In spite of the good efforts of administrators at all levels of vocational and technical education, there is still need for extensive management development. A majority of these administrators possess little formal management training. They primarily rely on personal experience to guide their actions. The need to bring about major reforms in vocational and technical education will require ministry personnel and local directors who possess a judicious mix of management training and on-the-job experience.

265. There is a need to review and analyze the vocational and technical education curriculum in terms of the employment needs of an emerging market economy. Within this framework it is necessary to look at the large number of long term, school-based programs offered in narrow specializations -- most of which prepare people for industrial occupations that may have been reduced or disappeared. Therefore, study of training needs in emerging fields of work as well as revisiting existing ones is critical to developing curriculum that truly reflects real needs. Curricular revision is sorely needed as Mongolia cannot afford to train its workers for the wrong jobs.

266. The Education Law has provided impetus for structural and organizational change, as well as modifications in methodology and content of vocational and technical education programs. Specific goals and priorities for the vocational and technical education system are evolving but have not as yet been documented, approved, and adopted. During this developmental phase efforts to contribute to national development through vocational and technical education are being guided by group and individual interpretations of the Law. The Education Law also addresses the need for development of the nonformal education subsector.

267. Regionalization of vocational and technical educational opportunity has been achieved through Training and Production Centers and schools located in various parts of the country as well as in the cities. These institutions adequately serve those within their immediate vicinity. However, the extent to which regional institutions are accessible and relevant to the rural population is questionable. It may well be that regional institutions will need to establish extension offices in the somons or provide some form of short-term, mobile training. With the country's vocational and technical education facilities vastly underutilized and a large number of their teachers redundant, time may be well spent in studying the feasibility of using

these resources to improve accessibility to education. The TPCs and other schools are equally accessible to either gender. However, imbalances between gender occur on a continuing basis by specific training program. Males traditionally follow construction trade training, while females dominate practical nurse training. Programs such as these are, however, open to either gender. More females than males in a given program is not caused solely by the school, but is also a function of the culture.

268. There are five critical internal efficiency issues in vocational and technical education -- instructional methods, teachers, instructional materials, qualification testing, facilities, and the nonformal education subsector. Internal efficiency issues specific for the nonformal education subsector are more difficult to identify because of a lack of data on inputs and outputs. The Mongolian government has just begin to address the needs of the nonformal education subsector. The Education Law of 1991 specifies that; a) education must be provided through formal and nonformal means and b) nonformal education may be conducted by citizens, institutions and/or enterprises. A major question arises over how nonformal education can be best coordinated with other educational and training systems.

269. The two major dimensions of external efficiency for the vocational and technical education system are the extent to which system institutions are producing sufficient numbers of graduates to meet two basic needs -- meeting manpower demands and providing students with adequate preparation for further study and the extent to which training is appropriate to education and skill requirements of employment. The nonformal education sector has not evolved sufficiently enough to allow analysis of its efficiency in terms of personal and social utility. There is insufficient data to suggest that nonformal education efforts are producing significant numbers of people to meet manpower needs of the country or that it is providing significant numbers of students with adequate preparation for further study. Some work is being done in basic literacy, worker skill development, adult education, and foreign language instruction, but data on these efforts is not available. The relevance of these efforts to employment or further education needs has not been substantiated.

270. Mongolia's system of vocational and technical education still retains much of past -- its structure, organization, teaching methods, and instructional content. Training outcomes are not always relevant to the workplace or further study and not always of the highest quality. Additionally, the system lacks adequate resources to carry-out its mission in a market driven economy. To meet these challenges, action must be taken to establish policy, increase training relevance, and make better use of resources. The first step taken must provide direction and give order to the system. Direction and order can be achieved by first establishing national training policy. Once policy is established, attention can be directed at achieving relevance in instruction. Finally, efforts must be made to make better use of available resources. National training policy must clearly define training goals and propose ways of achieving these outcomes. That policy must also set priorities in view of resource constraints.

Policy should cover all employment related training and in all sectors of the economy, especially the nonformal education subsector. It must pay particular attention to the emerging private sector and its needs for employment training. Similarly, national training policy must examine the roles and responsibilities of all ministries to determine where workforce training should be housed and administered.

271. Finally, efforts must be made to make better use of available resources. This may involve providing management training for vocational administrators, changing from teacher directed to student directed learning, reducing the number of narrow content specializations thus broadening instruction to include clusters of related job skills, training and retraining teachers in new and emerging fields, initiating a system of qualification testing, converting facilities to multiple-use functions, and providing for shared use of resources between the formal and nonformal education sectors.

SUMMARY ISSUES AND OPTIONS

272. The following lists indicate the key issues and options organized by the sector review's three contextual topics of policy and planning, economics and finance, and educational management, and of the three EHR subsectors defined for the sector review: (1) kindergarten, primary, middle, and general secondary education; (2) higher education; and (3) vocational-technical and nonformal education.

Policy and Planning

- There is a need for recognition among government decision makers that priorities must be established and difficult decisions made. It is not possible to maintain all of the present EHR system. This requires explicit choices of which levels and forms of the EHR system to preserve and at what standards of access and quality.

- The need for EHR reform is not solely or even primarily financial in origin but the current financial crisis emphasizes the need for reform. Mongolia's EHR system has basic structural, curricular, personnel, and managerial problems that must be dealt with to prepare the nation for a democratic society and a market economy.

- Planning activities must focus more on strategic objectives (with specifics as to control, participation, and funding - how much and from whom?) and monitoring and evaluation of the implementation process. Vague policy or planning pronouncements, and those that are unaffordable, should be avoided in favor of practical and realizable objectives.

- The Ministry of Science and Education is shifting from an

implementing agency to a policy analysis, monitoring, and regulating authority. Structures and personnel need to be adapted to this new role.

- Formerly, EHR planning was designed to meet the requirements of central planning; there was a high degree of detail, assured funding, and little need for adaptation once the plan was approved. In the new environment, planning must deal with greater uncertainty, little assurance of funding, and a dramatic need for adaptability. The planning process and the participants in it require new skills and attitudes to deal with this change.

- Policy making and planning must become proactive rather than reactive and policy should not be an implicit result of funding decisions; rather, funding decisions should reflect stated policy priorities.

- MOSE authority in the past was closely linked to financial and legal responsibility; much of the financial authority has been lost because of decentralization of responsibility for basic education and general and vocational secondary education to the aimags (provinces) and the increased autonomy of higher education institutions. The legal authority has also been modified and the MOSE will increasingly need to rely on its intellectual authority - its ability to provide useful information,other services, and advice - to exercise continued influence within the EHR sector.

- The Government of Mongolia, through international agreements and its own policy statements, is committed to a reduction in the numbers of administrative and support staff at all levels of the EHR system. The two guidelines in this effort are to remove unnecessary personnel and to improve the quality of administrative personnel while reducing the total numbers and controlling the proportion of the budget allocated to administrative and support services.

- A Policy Analysis\Planning Unit is needed in the MOSE to formalize its new service role within government; this unit should be attached to the Vice Minister's office, and work with existing departments and sub-units to provide the Minister, the Minister's Council, and the Khural (parliament) with information and advice concerning EHR policy options at all levels of the system.

Economics and Finance

- The loss of the massive subsidization (totalling as much as 30 percent of GDP) from the former Soviet Union has caused a major contraction in public resources at the same time that the collapse of the communist trading bloc has ended Mongolia's preferential trade arrangements. These economic difficulties have occurred simultaneously with Mongolia's attempts to introduce democracy and the market system.

- Mongolia's former capital-intensive development strategy created a substantial misinvestment in unmaintainable and often irrelevant production enterprises while failing to create the necessary communication and transportation infrastructure for development of the substantial economic assets Mongolia does have in minerals, tourism, and food production.

- Inflation (made more visible by floating the tugrug) and unemployment (made visible by the end of guaranteed employment in the state companies and cooperatives) are creating political and psychological as well as financial problems for the economic transition.

- The easier stage of privatization is over and the majority of the remaining public companies scheduled for privatization are either unprofitable or will require huge investments to make them self- sufficient. It is questionable if adequate investment funds, domestic and foreign, will be forthcoming in the immediate future to allow significant privatization gains except in service areas such as education and health where the government's own commitment to privatization is least clear.

- National fiscal capacity is constrained by the loss of foreign subsides and the earlier dependence on taxes levied on state enterprises; new taxes and collection systems are only slowly being developed and the recession has reduced their ability to generate necessary revenues. Cost containment rather than revenue enhancement is the more realistic short term option for government.

- In 1990 recurrent expenditures were 78 percent of the government budget - since that time this proportion has increased to over 90 percent as investments in capital have been sacrificed to pay recurrent costs. Government salaries are relatively low but heating costs and other utilities take up a disproportionate share of budgets. Similarly, for education and training, teacher costs are low (29-42%) but utility costs relatively high (15-34%) .

- The shares of total government expenditure (and per student expenditures) in 1992 were: kindergarten- 21 percent (tg 5,094); basic and general secondary- 55 percent (tg 2,035); vocational secondary- 7 percent (tg 9,333); higher education- 16 percent (tg 12,954). The proportion and the unit costs for kindergarten are unusually high.

- Population increase will create a 29 percent expansion of the 0-16 age cohort over the next 15 years. Even if currently reduced participation rates continue, this population growth will cause an increase in the need for school resources.

- Additional EHR resources need to be generated by encouraging private education alternatives at all levels, promoting institutional income generation through production enterprises, initiating fee systems in postsecondary education, promoting

private and community partnerships with educational institutions, and requiring students and families to bear a larger share of operational costs. All of these activities will require careful implementation and monitoring to minimize potential inequities and to protect basic social interests.

- Cost reduction efforts should include closing or otherwise reducing the scale of existing institutions, reducing or eliminating public kindergartens, increasing the efficiency of utility generation, delivery, and use, encouraging local innovations (schools in gers, community maintenance projects), creating more 1-4 schools to limit needs for dormitories, rationalizing staffing levels and patterns, and investigating nontraditional delivery systems to provide equivalent EHR opportunities at less cost.

Educational Management

- The nature of the demands for management and for management training are changing because of the shift from the command economy and toward more democratic and participatory decision structures.

- The Education Law of 1991 defines administrative structures and responsibilities; main characteristics are the attempt to merge science and education, decentralization of administrative and financial authority to aimags, increased autonomy in higher education, and authorization of private schooling.

- Decentralization has been introduced without a clear agreement as to the division of authority and responsibility between the MOSE and local authorities and inadequate consideration has been given to the administrative capacity of these local officials who now have such major educational responsibilities.

- Traditional administrative structures continue to dominate new formal and informal advisory bodies (e.g. Commission on Higher Education Reform or Council of Rectors) even when the latter represent more qualified or more representative groups. The government needs to create conditions where better use is made of such private or quasi-public organizations. Also, it should be made possible to organize and operate such organizations without government approval or supervision.

- MOSE personnel and responsibilities have changed while its internal structure has remained the same; a better fit of personnel and structure to new responsibilities is needed. A comprehensive management audit is needed of the MOSE's roles, personnel, and structures.

- Personnel management is constrained by low salaries (and low salary ranges) and lack of opportunities and incentives for professional development.

- Information availability in basic EHR statistics and financial data is good but not closely tied to decision makers' needs and not readily available for use in policy analysis.

- Financial control is detailed and systematic, but not subject to independent audit.

- Training institutions for management are emerging, most notably the Institute for Administration and Management Development (IAMD). However, a lack of cooperation and coordination appears to exist among the institutions in this area and the IAMD could play a potentially valuable leadership role.

- Consideration should be given to reducing the number of higher educational institutions to make better use of management talent and to reduce program redundancies.

- Managers at all levels need training in making decisions under financial constraints. Managers must understand that the failure to make decisions is an implicit decision to accept the consequences of inaction.

Pre-School, Primary, Middle, and General Secondary Education

- Mongolia has had one of the most equitable education systems in terms of gender, ethnic, and locational (urban-rural or regional) standards.

- The intended role of government in education has been confused by general uncertainty about the responsibilities of the government for social sectors in a democratic, free-enterprise society. Official pronouncements of EHR goals and objectives are inconsistent with policy actions and financial decisions.

- Dropout rates have increased from 4 percent in 1988-89 to almost 22 percent in 1992-93 with those in rural schools (especially males) being the more common dropouts. The causes appear to be improved economic opportunities resulting from privatization of herds, skepticism about the relevance of education, and perceptions of increasingly poor quality in the schools.

- The financial crisis and inflation have meant that many schools exhausted their January-December fiscal year budget by June and will need substantial new allocations before they can open in September. Kindergartens, boarding facilities, and grades 9 and 10 are the major places where cuts are being made.

- The teaching staff is contracting and many of the more qualified teachers are leaving for better opportunities; new teacher supply is inadequate to meet the requirements for qualified teachers, and rural schools will have the least qualified teachers.

- The new 1991 curriculum has not always been implemented effectively but does attempt to increase local relevance while retaining the core of subjects necessary for preparation for postsecondary education.

- Introduction of a requirement for use of traditional Mongolian script has placed a heavy burden on education at a time of financial and other crises. Teacher training and new textbook development and dissemination have been dominated by this one topic to the detriment of other concerns.

- Textbook production and distribution is constrained by shortages of paper and finance as well as an inadequate distribution infrastructure. A comprehensive textbook policy is needed that identifies priorities, assigns detailed responsibility for tasks, and encourages greater use of private alternatives in materials design, production, and dissemination.

- Facilities are deteriorating and equipment is often not available or is nonfunctioning. Maintenance is totally inadequate and in most schools there is no budget for repairs.

- Private institutions of primary, middle, and general secondary education should be encouraged and basic standards of personnel and facilities should be established for their operation. These standards should be the same as used in the management of public institutions. Students graduating from private schools should have equal rights to transfer to public schools and to proceed to higher education.

- A major new program of nonformal and continuing education should be developed to provide learning opportunities to dropouts and others who leave school prior to completion of grade 8. In addition, nontraditional means of delivering formal education should be explored. For example, underutilized schools in rural areas might be closed, with single-classroom, multi-grade schools, perhaps located in traditional gers, replacing them. Also, "family schools" for nomads could be encouraged; these schools, with or without formal teachers, would move with the families and use the advantage of the education of the parents combined with special home study materials.

- More inservice and preservice training should be provided for school and local government administrators on the requirements of educational management. In addition, class teachers should receive training in educational guidance to allow them to help students and their families prepare for the new opportunities of the market-based society.

Higher Education

- In the last three years, higher education (defined to include only institutions granting baccalaureate or higher degrees) has

changed from a single public comprehensive university to a set of eight specialized university-level institutions complemented by two colleges emphasizing economics and business. The National University of Mongolia is the only institution that has maintained programs across the traditional curriculum. Eighteen private higher education institutions have now been opened (seven in the area of foreign languages) and several more await MOSE authorization.

- Two major organizational trends in this same period are the attempts to merge research and teaching (by bringing formerly independent research institutes within the new universities) and the placing of postsecondary "colleges" under the control of the universities.

- The degree structure is shifting from a Soviet model to one of B.A., M.A., Ph.D. with the existing Doctor of Science degree being retained as an advanced degree 2 1/2 to 3 years beyond the Ph.D. No standardization of these degrees in length of study or curriculum content exists and there is some confusion about the equivalency of these new degrees with the old degrees.

- The major financial changes occurring in higher education are the elimination of student stipends (commonly about one-third of the total budget and for several institutions the single largest budget item) and the introduction of tuition fees. The fees are intended to cover the variable costs associated with instruction; a State Foundation for Training is being established to provide loans for students sponsored by future employers or identified by the National Development Board (NDB) as part of future manpower requirements.

- Simultaneous with the encouragement of market forces in higher education through the introduction of fees, the system continues to operate under a manpower planning model that is a vestige of the old command economy. Places in public higher educational institutions have been allocated based on the NDB's projections of manpower demand and employer sponsorship. Even with tuition fees, some programs will not admit fee paying students who do not qualify under this allocation system. It appears that for some program areas, such as foreign language, the NDB estimates are artificially low; this encourages students to seek private higher education alternatives.

- Higher education enrollments peaked in 1985 at 18,141 and by 1993 had fallen to 16,917 (the Agriculture University suffered the greatest contraction in enrollment). In 1985, another 6,110 Mongolians were in higher education programs in other countries; this was reduced to 41 in 1993. Future enrollments may be curtailed by the removal of stipends and introduction of fees, but currently private demand for higher education remains strong. The more serious constraint on enrollment will continue to be the NDB's reduced estimates of manpower demand; even if formal quotas are eliminated, this will mean fewer students will qualify for

government loans for their higher education. Other criteria than manpower demand (such as financial need) should be considered for loan eligibility.

- Higher education teachers are predominantly male, over 40 years of age, and were trained under the previous social system. The needs for specific retraining and for general staff development are substantial but are unlikely to be satisfied in the short run because of inadequate finance and the lack of an institutional capacity in Mongolia to conduct such training.

- The higher education institutions offer over 100 specializations at the baccalaureate level. These are often excessively narrow and frequently are not appropriate for the current employment market. However, new specializations, such as management, commerce, and accounting are being added to respond to new market requirements.

- Higher education facilities are old, often in poor repair, and budgets for maintenance and renovation are totally inadequate. Equipment, especially computers and laboratory devices, is scarce, often outdated, and frequently nonfunctioning.

- Salaries are low and represent only 35 percent of the variable budget; per-student costs in 1992 ranged from Tg 11,926 at the Pedagogical University to Tg 38,119 at the National University's Pedagogical Institute at Khovd (these costs are approximately 60 percent higher now because of wage and other increases).

- Institutions are able to calculate detailed cost budgets by program but there is little evidence that this or any other institutional research data are used systematically in institutional planning.

- The four key areas of concern are teacher qualifications; the quality of facilities, laboratories, and equipment; the lack of library resources (over two-thirds of library collections are textbooks); and organizational structures that are fragmented and not well coordinated. Merging of institutions and privatization are alternatives worthy of consideration both as a means of reducing government expenditures and as a way to increase the effectiveness of instructional and research activities.

-The Academy of Science's reluctance to merge some of its institutes has led to the formation of the Institute of Technology; because this group of potential instructors are primarily researchers, an obvious alternative is to unite this institute with the Technical University or some other institution to offer graduate degree programs.

- Quality in the private system needs to be monitored by a joint public and private organization; the organization's role should be more to provide potential students with information about the institutions and not to be a strict regulatory authority.

- Fewer but better trained and better financed researchers would both increase the internal efficiency of higher education and promote the external relevance of higher education's research effort.

Vocational-Technical and Nonformal Education

- Nonformal, adult, and continuing education is not yet well developed in Mongolia. In contrast, the vocational-technical education (VTE) system has a long tradition of support under the command economy. The VTE structure consists of Training Production Centers (TPCs) preparing operatives from students from all grade levels; "step" schools preparing operatives, technicians, and semi-professionals from graduates of grades 8, 9, and 10; and VTE schools and colleges preparing technicians and semi-professionals, also from graduates of grades 8, 9, and 10.

- The traditions of the planned economy remain a strong influence in the VTE subsector. Manpower projections as a basis of enrollments, excessively narrow specializations, and a lack of emphasis on the adaptability needed to fit graduates for the free market are all signs of the difficulty the sector faces in this period of transition.

- Thirty two TPCs and step schools exist in 1993. Enrollments have declined from 29,067 in 1990 to 11,685 in 1992 because of reduced student interest and intake limits imposed by the NDB. In 1990, 2,636 VTE students were enrolled in other countries (almost exclusively the Soviet Union and Eastern Europe); for 1992 this number was only 194.

- VTE teachers have declined from 3,077 in 1990 to 1,206 in 1992. Teachers are predominantly male, 30-50 years old, and not trained to prepare students for free market employment. Many of the best teachers appear to be leaving for better paying employment in the private sector.

- The VTE curriculum is still dominated by orientation to heavy industry rather than needs of the service or commercial sectors. General education needs receive less attention in favor of highly specialized skills. The curriculum's desired focus on practice rather than theory is not realizable because of lack of equipment and supplies.

- VTE facilities are now dramatically underutilized relative to student capacity but there is no indication of an underproduction of VTE graduates in general. Excessive specialization in training may have reduced the ability of graduates to adapt to market demand. Facilities are in poor repair and equipment is old and often irrelevant for current skill needs.

- Consolidation of training sites would lower costs and allow

retention of better teachers if part of savings is allocated to better salaries.

- Administrative staff serve both as educational managers and as links to employers and training opportunities in the business enterprises. New forms of training administrators are needed to produce VTE managers who can organize training programs, initiate and maintain income generation activities, and promote the placement of graduates through identification of skill requirements and linking graduates to employers.

- Some PTCs and step schools have been successful in income generation activities. Innovation and flexibility in this regard should be encouraged; such activities provide financial support, orient student attitudes toward market needs, and develop entrepreneurial skills.

- Five critical internal efficiency needs are raising teacher quality, improving instructional methods, increasing the availability of teaching materials, upgrading facilities and equipment, and providing qualification testing of student achievement. The major external efficiency issue is the questionable relevance of VTE training to the skill needs of the labor market.

- The nonformal, adult, and continuing education system needs to evolve as a complement to general schooling and to formal VTE programs. It should serve as a special resource for rural children and adults and as a source of experimentation and innovation.

- A National Training Policy is needed to identify needs, how they can be met, and responsibilities for financial and managerial authority. This policy should clarify the appropriate role for private training institutions and the government's encouragement of on-the-job and nonformal training alternatives. Also, a decision is required as to whether market forces or manpower planning will dictate future development of this subsector.

- Content of courses and of programs need to be made more relevant to the emerging manpower needs of the economy. Equipment and teaching materials must be available and suitable. For these changes to occur, a further contraction in the size of the VTE sector will be necessary.

- New partnerships are necessary between the public training sector and the private employment sector. Government should not attempt to monopolize VTE training; it should encourage on-the-job training through sharing of teachers and facilities and through joint activities between VTE programs and private companies. Facilities closed through consolidation of the VTE system should be available for use by private VTE schools.

273. This EHR sector review is the first step in the establishment

of an integrated program of reform. Over the next few months the issues and options discussed here will be widely reviewed. During the development of the EHR master plan, the options will be prioritized and the necessary implementation steps will be identified. A major benefit of Mongolia developing this program of reform is that the government will be better able to use its own resources and will be in a stronger position to make use of any foreign assistance that is forthcoming. The ultimate beneficiaries of the sector review and the master plan will be the people of Mongolia -- the students, families, employers, and communities. The goal of all educational analysis and planning should be the improvement of their lives and their futures.

CHAPTER 2

ECONOMIC AND FINANCIAL ANALYSIS

1. Mongolia's move from socialism towards capitalism has far-reaching implications for the economy. The transition is currently far from complete, and creates considerable uncertainty for all sectors including education. The shape and volume of economic activity is of major importance to the education sector, not only for provision of resources but also in terms of labor market use of the products of the education system.

2. This chapter has five main parts. It commences with an outline of the main features of the Mongolian economy, noting changes over time and highlighting major strengths and weaknesses. The chapter then turns to national fiscal capacity, discussing the sizes of both total and sectoral revenues and expenditures. The third part focuses on manpower conditions, and on linkages between education and the labor market. It is followed by discussion of the costs, financing and private/social benefits of education. The final section summarizes earlier discussion and presents options for policy, practice and further study.

THE MONGOLIAN ECONOMY

Natural Resources

3. Geological explorations have identified over 80 types of mineral ore in Mongolia. Coal, copper and molybdenum are especially important, but the country also has oil, fluorite, gold, iron ore, lead, phosphates, tin, uranium, and wolfram. Coal reserves total an estimated 20 billion tons. The main copper and molybdenum mines are at Erdenet in the north of the country. These mines produce copper concentrate for Russian markets in particular, and are the country's largest export earner. Mongolia appears to have great potential for further exploitation of its mineral resources. In particular, several foreign companies have expressed interest in oil explorations.

4. The river system is most extensive in the mountainous north of the country, where there is a great concentration of hydroelectric energy production. However, most thermal power is generated from domestic coal and imported diesel oil. It is supplemented by electricity imports from the Russian grid, especially for the Erdenet copper plant. The scale of coal burning in winter months causes major concerns about pollution, particularly in Ulaanbaatar.

5. About 80 percent of the land can be used for animal husbandry. Mongolia's 25.6 million head of livestock (1992) include: sheep (57.0 percent), goats (21.8 percent) cattle (11.0 percent), horses (8.6 percent) and camels (1.6 percent). Crop cultivation began

on a significant scale only in the 1950s. Agriculture is constrained by the severe climate, which permits only a 90-day growing and harvesting season and can cause large crop losses when temperatures fluctuate by as much as 30 degrees celsius in one day. Forests cover about ten percent of the territory (15 million hectares), and supply most of the country's timber needs.

Economic History

6. Since Independence in 1921, Mongolia has evolved from an underdeveloped, primarily pastoral society to an economy which in proportionate terms has a large industrial sector. Its main exports are agricultural products and minerals. The agricultural sector is still dominated by livestock, but now includes significant amounts of cropping. In addition, a basic transportation network of railroads, roads and aviation has been developed.

7. Shortly after World War II, Mongolia became a centrally planned command economy, dominated by five-year plans that emphasized the development of industry and energy. The country began an increasingly close association with the Soviet Union after the signing of the Treaty of Friendship and Mutual Assistance in 1946. After joining the Council for Mutual Economic Assistance (CMEA) in 1962, Mongolia's trade expanded. Its partner nations helped build the country's infrastructure and develop some of its large productive enterprises and mining complexes. This work laid the foundation of the present industrial sector.

8. Cultural and economic relations with the People's Republic of China (PRC) almost completely ceased in the early 1960s as a result of the political split between the PRC and the Soviet Union. Only in the mid-1980s did Mongolia's relationships with the PRC begin to improve again, commencing with a 1986 agreement on diplomatic relations. Exports to the PRC increased from 0.4 percent of total exports by value in 1985 to 1.7 percent in 1990; and imports increased from 0.5 in 1985 to 2.4 percent in 1990. Although these figures remain low, trade is expected to expand dramatically during the 1990s.

9. The economic reform program, begun in 1986, had five goals:

- acceleration of development,
- application of science and technology to production,
- reform of management and planning,
- greater independence of enterprises, and
- balance of individual, collective and societal interests.

The first goal, accelerated development, was to result from attainment of the four other goals. Scientific research was to be redirected so that it would be better linked to economic objectives. Reform of management and planning started with the streamlining of government agencies in charge of the economy, and the duties of the State Planning and Economic Committee were limited to overseeing capital investment policy. Stronger financial autonomy was granted first to a limited

number of enterprises and later more widely. Enterprises were made more accountable for their own losses and for fulfilling sales contracts and export orders. Output above state orders could be sold at the enterprises' discretion.

10. Industrialization, made possible by large investments by the Soviet Union, led to rapid economic growth during the 1960s and 1970s. Net material product grew annually by nearly 8 percent in the period 1970-75, and by a further 4.3 percent in 1975-80. Gross industrial production rose by about 70 percent between 1960 and 1980, though agriculture lagged behind with little change in the size of the livestock herd.

11. Although industrial investments permitted a growing volume of foreign trade as increased copper-producing capacity was realized, economic growth could not keep pace with Mongolia's rising import dependence. Moreover the deteriorating external environment and the increasing fluidity of domestic economic policies and institutions led to declines of GDP of 2.1 percent in 1990, 15 percent in 1991, and a further 10 percent in 1992. Sharp increases in open unemployment and inflation, both entirely new phenomena in Mongolia, accompanied these output declines.

12. The present economic crisis has thus resulted from convergence of three factors. First, Mongolia's capital-intensive, import-dependent, centrally-planned economy became incapable of generating self-sustained growth. Second, external capital flows from the Soviet Union, which had accounted for up to 30 percent of GDP, began to decline and ceased entirely in 1991. Third, the collapse of the CMEA system in 1991 resulted in severe dislocations in Mongolia's external trade, of which over 90 percent had been with the USSR. The seriousness of the situation underlined the need for tight monetary and fiscal policies to effect the necessary reductions in both consumption and investment. This task was complicated by the simultaneous need to restructure macroeconomic policies and institutions for the transition to a market economy.

Specific Sectors

13. Table 2-1 shows the composition of GDP at current factor cost between 1980 and 1990. Throughout the decade the industrial sector was the largest component, followed by agriculture, non-material services and transport. In the two years since 1990 the industrial sector declined in absolute size. However, since other sectors (and especially services) declined even more, the proportion of GDP generated by industry rose to 41.7 percent. In absolute size, the sector grew by less than 1 percent in 1990, and contracted by 12 percent in 1991 due to lack of foreign exchange and disruption of trade with the Soviet Union. In specific sub-sectors the decline ranged from -8 percent in flour to -50 percent in cement. Production in 1992 was higher than in 1991 in a few sectors (principally leather coats, copper concentrate, flour and, by a very small margin, bread), but lower in almost all other sectors. Woollen products, livestock and milk

products declined the most severely (Table 2-2).

14. In 1990 agriculture contributed 20.2 percent of GDP. It rose to 34.5 percent in 1992, but, as in the industrial sector, this was not a reflection of increased output. Rather it indicated that other sectors, and particularly government and other services, had declined even more. In absolute levels of production, agricultural Net Material Product, after declining by over 6 percent in 1987, enjoyed two successive years of growth before again falling in 1990 and 1991. The decline in 1990 was caused by a 10 percent reduction in crop production because of cold weather, late rains during the harvest season, and shortages of diesel fuel and farm equipment. Although weather conditions in 1991 were favorable, shortages of inputs due to lack of foreign exchange and a delay in deregulating agricultural trade and prices continued to constrain crop production. Agricultural yields worsened in 1992, with wheat production forming only 62.8 percent of its level in 1991 and corresponding figures for potatoes and vegetables being 58.6 and 32.5 percent. Livestock numbers were fairly stable, though there was movement within sub-categories (Table 2-3).

15. Transport formed over 10 percent of GDP in 1990, and was thus a significant sector both in its own right and as a facilitator of other sectors. However, the transport system has experienced major problems of maintenance, management and infrastructure, and has also been hit hard by the fuel shortage. Ulaanbaatar is currently served by three airlines (MIAT, AEROFLOT and Air China). MIAT also flies on domestic routes. Road transport accounts for approximately 70 percent of freight tonnage, but only 2 percent of highways are asphalted. Almost all exports are carried by rail, and the line through Mongolia is also a major channel for trade between Russia and China. Freight transport flows are likely to change as Mongolia's own trade is increasingly routed through China rather than Russia. Industrial decentralization will result in smaller plants sited throughout the country to serve nearby populations, thereby reducing transport intensity. Overall, however, transport intensity is likely to increase with economic growth, and selective modernization is needed throughout the system.

Exchange Rates and Inflation

16. In the deteriorating economic climate, the tugrug came under extreme pressure. In July 1990 the tugrug was pegged to the US dollar at the rate Tg 5.6 = $1. In May 1991 the rate was changed to Tg 7.1 = $1, but in June 1991 a three-market structure was established: the commercial rate was Tg 40 = $1; Tg 7.1 = $1 for barter trade; and a free market system in which rates varied between Tg 100 and 150 per dollar in 1991.

17. In May 1992 the barter and commercial rates were unified at Tg 40 = US$ 1. However, by this time the free market rate was about Tg 250 = US$ 1. Pressure on the currency continued, and in May 1993 the government took the bold step of floating the currency. At this point the official exchange rate abruptly altered to Tg 394 = US$ 1. The

moves were made following discussions with the International Monetary Fund and the World Bank, which have promised essential economic support for the country.

18. The changing exchange rate was closely linked to the rate of inflation. During the 1980s, as in other socialist countries, prices were carefully controlled and open inflation was negligible. Thus between 1981 and 1990, consumer prices rose just 2.1 percent, or 0.23 percent per annum. In January 1991 all retail and wholesale prices, except for 35 categories of key commodities, were "freed" with the result that most prices doubled. To restrict pressure on basic necessities, monthly food rations were introduced for ten items.

19. During 1991, market reform was continued by stages. In June 1991 gasoline prices were raised fourfold; in October 1991, 18 of the 35 categories with fixed prices were also liberalized. Plans were laid to deal with most of the remaining 17 categories and to reduce the number of rationed items. By mid-1993 the only remaining rationed items were meat in urban areas and flour throughout the country. The government maintained ceiling and floor prices on some commodities, though it had plans to phase out even these measures.

20. Inflation was further fueled by the government's monetary policy. Currency in circulation, the main determinant of base money in Mongolia, grew by an average of 12.8 percent per annum in 1985-90 and by 128.3 percent in 1991. While some increase in money supply was necessary to accommodate the 1991 price adjustments, inflationary pressures were exacerbated by rapid growth in credit to state enterprises and the private sector. As a result of these activities and pressures, inflation in 1992 exceeded 400 percent, i.e. even higher than that in 1991. Inflation remained high in the first part of 1993, slowed significantly during the second quarter, but was then again given a major hike by devaluation at the end of May. Gasoline prices, for example, immediately rose from 42 to 100 tugrugs per liter for 76 octane. The current projection for inflation in 1993 is about 290 percent.

21. Monetary policy was tightened during the first quarter of 1993. Mongal Bank's lending rates were raised to a level which was positive in real terms, reserve requirements were increased by 42 percent over the amount at the end of 1992, and a minimum deposit rate of four percent per month was introduced. In addition, procedures have been established to deal with problem loans, including loan-loss provisioning and asset substitution, and management of international reserves has been transferred from the State Bank (International) to the Mongol Bank. It is hoped that by the end of 1993 the worst will be over, and that by 1995 prices will be fairly stable.

Privatization

22. Privatization has been the centerpiece of the government's economic strategy. The mechanism designed in 1991 distributed to every citizen in Mongolia born prior to 31 May 1991 three coupons for

acquisition of small-scale assets and one coupon for acquisition of large-scale assets. The small-scale sector included 1,600 businesses and all agricultural assets and livestock. The large-scale sector included 240 state-owned enterprises with a book value of Tg 10.8 billion plus parts of a further 364 firms with a book value of Tg 17 billion. The face value of the vouchers issued to each citizen was Tg 10,000. A stock exchange was opened in 1992 for trading in large companies.

23. To support the private sector, Parliament has considered amendments to the company law, together with anti-monopoly and land laws. The amendments aim to protect shareholders and define the scope of activities of enterprise management and boards. According to official statistics, by the end of 1992 70 percent of the livestock had been privatized, 43 percent of the total industrial output, 46 percent of construction and capital repair work, and 70 percent of total retail trade turnover. The private sector provided 26,700 employment opportunities, accounting for 44 percent of the country's total new employment opportunities of the year. By July 1993 over 25,000 private entities had been registered.

24. However, many of the newly-registered private units did not commence operation immediately, and some existed only on paper. Also, the pace of privatization slowed in the second half of 1992 when complexities were encountered in the privatization of the large-scale enterprises. The economy remained volatile and unpredictable, and even in mid-1993 the final shape of the privatization initiative remained very uncertain.

25. Linked to the issue of privatization are questions about foreign companies and joint ventures. By mid-1993 the scale of foreign direct investment remained limited. This also reflected uncertainty in the domestic economy, together with the shortcomings of general infrastructure and legal and economic guarantees. Table 2-4 indicates the number of joint ventures registered by June 1993. Reflecting Mongolia's existing economic ties, over half the joint ventures were with Russian enterprises. The next largest groups were with Chinese and Hong Kong enterprises. Within Mongolia the vast majority of operations were located in Ulaanbaatar, though six were in Darkhan. Most of the enterprises were in commercial and mediatory activities. The average share of total property owned by foreign investors was 45 percent. A new law on foreign investment came into force on 1 July 1993. It aimed to improve the security of such ventures and to promote activity.

26. The philosophy of privatization has also extended to the education sector. Paragraph 7 of article 15 in the 1992 Constitution indicates that the "State shall provide basic general education free. Citizens may establish and run private schools if they meet the requirements of the State". Initial growth was in the post-secondary sector, where 18 institutions had been registered by July 1993. These were all new initiatives rather than existing institutions which had been converted from public to private ownership. The government has been understandably uneasy about the latter concept, though some

schools, e.g. in Ulaanbaatar and Central Aimag (province), have begun to charge fees.

The Social Impact of Economic Change

27. Some sectors of the population have been hit very hard by the economic changes. Real wages have fallen sharply for the majority of the employed population, and this has pushed lower-paid workers below the poverty line. The value of pensions and social welfare benefits has lagged so far behind the rate of inflation that they no longer produce minimum levels of income support;and at the same time a significant level of open unemployment has emerged for the first time in Mongolia's history. Some estimates suggest that 16 percent of the population is now below the poverty line, though other estimates place the figure considerably higher. The official definition of the poverty line adopted on 21 May 1993 was: for cities a monthly income of 1,580 tugrugs, and for the countryside a monthly income of 1,040 tugrugs.

28. Another specific indicator of poverty is calory intake from food. According to official figures released in November 1992, average kilocalory consumption was 1,875 per day in urban areas and 2,092 in rural areas. This was a marked drop from the reported national average in 1989 of 2,408 kilocalories. The whole population has suffered from the fall in food production, but it has hit some groups harder than others. Remote areas are deprived of grain staples, while urban areas lack meat supply. The social groups which have been hit hardest are:

- Unemployed: The number of registered unemployed in June 1993 was 55,300, approximately 5.4 percent of the labor force.

- Pensioners: The country has 217,000 pensioners, of whom about 31,000 are living below the poverty line.

- Single parents: Between 5 and 9 percent of households are headed by women, and about 50,000 children live in single-parent households.

- Disabled: There are 47,600 registered disabled including people with minor physical injuries.

29. It is also instructive to note that the groups hardest hit by the economic crisis are those in the monetary sector. Many people in Mongolia's rural areas are engaged in herding and are less influenced by the monetary sector. One 1991 study of herders found that only 70.5 percent of total income came in the form of cash. At that time the herders were working in cooperatives on a lease basis. The herders were allocated production targets and were required to produce meat, milk and wool for the state in return for a salary or pension and social security. Since that study was conducted, ownership of most animals has been privatized, and the proportion of total income received in cash has fallen. A significant proportion of trade with and among herders is by barter rather than by cash.

NATIONAL FISCAL CAPACITY

30. The economic crisis has severely damaged national fiscal capacity. The major problems have been loss of revenue from the Soviet Union and decline in economic activity. Other problems have been that exemptions from taxation have been excessive, and that outlays on a number of large projects initiated during the 1980s have had to be maintained.

31. The consolidated state budget covers the central government, four cities, 18 aimags and 351 somons. Although the operations of state enterprises are not included in the state budget, they account for over two-fifths of budgetary revenue and receive loans and transfers from the budget to finance a substantial portion of their investment. Thus, the state budget accounts for a large part of overall economic activities. The state's importance is reflected in the high ratio of total government expenditure to GDP. It averaged about 64 percent in 1985-89, though it has fallen since that time as a result of the privatization programs.

32. Until the end of 1988, budgetary deficits were fully financed by the Soviet Union through concessional loans. Even in 1989 Soviet aid covered 90 percent, and in 1990 the figure was still 80 percent. The disappearance of this revenue has created a major watershed in the fiscal accounting system.

33. Traditionally, the main sources of taxation revenue have been turnover and profit taxes on state enterprises and cooperatives. In 1990, they together accounted for 90 percent of taxation revenue. However, a 1991 taxation law reformed the system. The main sources of revenue increase in 1991 were the turnover tax on petroleum, excise duties, and a windfall gains tax on enterprise inventories. Taxes on personal incomes also became more prominent than before. Taxation rates were further revised in 1993 (Table 2-5). Taxation reform implemented in early 1993 included a 10 percent sales tax on domestic production and imports, reduction in the scope of customs duty exemptions, reduction in the number of corporate income tax rates from seven to four, and modification of the definition of taxable income to allow deduction of wages and depreciation. To rationalize public sector investment, a rolling three-year program, beginning in 1993, has been prepared with World Bank assistance.

34. Mongolia's relatively large state budget has been absorbed mostly by current expenditures, the share of which in total expenditures averaged about 78 percent (or 52 percent of GDP) during 1980-90. Within current expenditures, the largest item (44 percent) was devoted to social and cultural expenses, which included free food, social security payments, pensions, subsidies, and transfers to households and public establishments. As a result of 1990 changes in the laws on pensions and social security, and the cost-of-living adjustment following the doubling of prices, budgetary payments on this

subcategory rose sharply in 1991.

35. Capital expenditures absorbed about 17 percent of total budgetary outlays (or about 10 percent of GDP) in 1975-86. Their share increased rapidly after 1986 because of the government's increased emphasis on housing, education and health facilities, reaching a peak of 23.3 per cent of budgetary expenditures (15.5 per cent of GDP) in 1989. However, with deepening economic crisis and declining public revenue, capital expenditures were cut to 19 per cent of the total in 1990 and 10 per cent in 1991. The capital allocation in 1993 represented only 7.7 percent of the total budget, and within the capital allocation, education's share was less than two percent. Further cuts in 1992 and 1993 have been necessitated not only by the fiscal crisis but also by a shortage of construction materials. One result is that construction of many school buildings commenced in 1989 remains uncompleted.

The 1991-93 Budgets

36. Government figures show a 1991 budget deficit of Tg 2,688.3 million. Initial figures published in 1993 using preliminary data for 1992 showed a budget that was in balance and a 1993 budget with a surplus (Table 2-6). However, these figures were later substantially revised (Tables 2-7 and 2-8). The two sets of figures are worth reporting not only for their intrinsic importance but also to show the difficulties of making budget projections during the time of economic crisis.

37. The revised sets of figures indicate that revenues had been lower and that expenditures had been higher than originally anticipated, giving a deficit of Tg 2,400.0 million in 1992 and an even larger projected deficit of Tg 7,032.5 in 1993. One estimate prepared by the Mongolian authorities in conjunction with the International Monetary Fund and the World Bank identified a fiscal deficit which was projected to rise from 11 percent of GDP at the end of 1992 to 19 percent in 1993-94, reflecting the effects of exchange rate variations on transactions denominated in foreign currencies and the expected trajectory of disbursements for donor-financed investments.

38. Table 2-9 provides more details on the investment budget in 1991 and 1992. Because of the fiscal crisis, investment in capital works of all types had been severely curtailed. Education was allocated only 0.2 percent of the total budget for buildings in 1991 and 0.4 percent in 1992, and was thus treated even more stringently than other sectors. Allocations for educational equipment were 5.3 percent of the total budget in 1991 and 4.3 percent in 1992. In 1993 the investment budget was diminished further. As of mid-1993 no disbursements had been made from the national government budget because priority was being given to salaries and other important items in the recurrent budget. Some institutions had made their own expenditures on capital works from their self-generated revenue.

39. Table 2-9 also shows a breakdown of expenditure for equipment within the education investment budget. Aimag governments were allocated 60 percent of the total, while the remainder was divided among universities, postsecondary institutions, vocational schools and other institutions directly under the Ministry of Science & Education. Although the equipment budget was generally considered seriously inadequate, it was widely recognized that equipment could not easily be a priority during the period of fiscal crisis.

Fiscal Decentralization

40. Local governments have begun to exercise a greater fiscal role, particularly on the expenditure side. Local governments are permitted to raise their own taxes from informal sector markets, hunting, etc., though the scale of revenue which can be gained from such taxes is limited. Much more important is the fact that although the central government still holds most powers of taxation, local governments have been given increasing responsibility for collecting and using those taxes. In the first half of the 1980s, local governments received about 30 percent of budgetary revenues, but in the second half their share increased to 53 per cent. The increase was the result of a new policy to allow local governments to retain a greater proportion of profits taxes generated by state enterprises in their districts.

41. However, the situation remains fluid and changeable. Figures for 1992 showed local governments receiving only 32 percent of local revenue, and the budget for 1993 indicated 17 percent. This reflected the need for the central government to replace some of the revenues which it had formerly received from the Soviet Union with incomes from other sources. At the same time, new responsibilities were given to the aimags for education and health. The system of control over taxation rates and the revenue from taxes and other sources has major implications for the nature of educational development. In the past, the central government was able to use resources from the Soviet Union and elsewhere to help reduce regional imbalances among the aimags. This is no longer so easy, and the prospect of growing regional inequalities resulting from the differential resources of the aimags is a major concern.

42. Also of concern to the education sector is the autonomy exercised at the aimag level. Although aimag governments have guidelines from the national government on how to allocate expenditures, the aimag governments also exercise considerable discretion. They are therefore able to move resources, e.g. between education, health, agriculture and other sectors. Aimag governments may or may not accord education the same level of priority as does the national government.

MANPOWER CONDITIONS AND EHR LINKAGES

43. Mongolia has a fairly high labor force participation rate due to the state's historical commitment to provide jobs for everyone, the high level of educational development, and the interest of women in employment. The total labor force has approximately one million people; and it includes about 52 per cent of the female population of working age.

44. Some labor market needs are still determined on a yearly basis using a manpower demand estimation process carried-over from the former command training system. A yearly survey is conducted by the Ministry of Science and Education which gathers employment needs information with the assistance of designated personnel in each of 18 aimags and four cities. Local personnel identify how many and what kinds of workers are needed by both government and private sector employers. Employment needs of all Government ministries are included in the analysis. Needs are reported by major occupational area and specialization according to locality and by public/private sectors. These needs are checked against available job market information in the Ministry of Labor and Population Policy where differences are identified. Verified labor market needs serve as a basis for ordering training for specific numbers and types of job titles. Because the labor market is in such a state of change, officials admit their information may well be obsolete by the time it reaches the training centers and schools. Officials recognize the problems associated with manpower forecasting in the transitional economy and are seeking better ways of determining labor market needs.

45. Table 2-10 shows employment by sector during the period 1970-90. About three quarters of the labor force was employed in the material sectors. In proportionate terms the agriculture sector became less important over time, but it still employed 29.3 percent of the total in 1990. Industry became proportionately more important, raising its percentage from 15.5 to 19.0.

46. The two decades between 1970 and 1990 also witnessed a proportionate reduction in the material sectors as a whole, and a corresponding increase in the nonmaterial sectors. Within the latter, education was the largest component. It employed 11.7 per cent of the total workforce in 1990, and as a specific subsector was second only to agriculture and industry. These figures stress that employment developments in the education sector have major implications for the labor market as a whole.

47. As a subsistence agricultural economy and then a centrally-planned command economy, Mongolia had not previously experienced open unemployment. Until the collapse of the socialist regime, the state found or created employment for every school leaver and graduate. Frictional unemployment existed while workers were in transition from one job to another, but no more than 2 percent of the labor force was affected by frictional unemployment at any one time.

48. The economic crisis described above has abruptly altered this situation. The following figures show unemployment levels for the

years 1989 to 1993:

	1989	1990	1991	1992	1993 (June)
Total labor force ('000)	879.4	927.9	976.4	1,012.7	n.a
Total unemployed ('000)	10.3	24.8	55.4	54.0	55.3
Unemployment rate (%)	1.2	2.7	5.7	5.3	n.a.

On 1 June 1993, 55,300 able-bodied people were registered at the labor market, were actively seeking jobs, and were considered unemployed. This contrasted with just 10,300 in 1989. The total unemployment rate had risen from 1.2 percent in 1989 to 5.3 percent in 1992. While this figure might appear modest compared with that of many other countries, both industrialized and less developed, in Mongolia its impact was felt particularly keenly because of the historical record of full employment and the abruptness of the change. Among the registered unemployed in June 1993, 45.9 percent were men and 54.1 percent were women (Table 2-11). The fact that over half the unemployed were in Ulaanbaatar, where the unemployment rate is around 12 per cent, is another reason why the government is especially concerned about social and political implications of the situation.

49. Table 2-11 also contains information on the educational level of the unemployed. Some 1.8 percent of the total had higher education, 7.3 percent had professional and technical education, 24.7 percent were skilled workers, and 66.2 percent were people without professions. One survey of graduates from the Technical University indicated that the highest unemployment rates were among those connected with the construction and agriculture-related industries. For example, in July 1992 17 of the 37 individuals who had graduated in building materials technology the previous year were unemployed. The same problem faced 4 of the 14 graduates in food production, and 10 of the 30 graduates in agriculture-building-engineering.

50. It seems likely that in the short term unemployment will rise further. Privatization will make enterprises more conscious of labor-utilization rates, and even the government is less willing to tolerate 'make-work' positions than it was. The government released some 3,000 workers in the early 1990s, and the Ministry of Education, for example, was cut from over 100 employees to half that size. If the financial crisis leads to contraction of education, it is likely that increasing numbers of teachers will be unemployed. The Ministry and aimag officials responsible for education could use the contraction of the education system to facilitate removing the least qualified teachers; because the better qualified teachers cost more this would raise average salaries while lowering the total wage bill for teachers. Unfortunately, such a plan is unlikely to succeed because it is the best teachers who are likely to leave for other jobs and current data do indicate an increase in the proportion of unqualified teachers.

51. The challenge for the authorities, moreover, is not only to find jobs for those displaced by economic restructuring but also to cater for new entrants to the labor market. Table 2-12 shows population projections from 1990 to 2005. The number of persons of

working age is expected to increase by 174,500 (17.4%) between 1990 and 1995, by a further 186,100 (15.8%) between 1995 and 2000, and by a further 219,500 (16.1%) between 2000 and 2005.

52. The scale and nature of unemployment has many implications for economic policy. As presently structured, the economy's capacity to absorb the growth in labor supply is limited because the leading sectors -- mining, mineral-based industries and livestock -- are essentially capital- and land-intensive activities. At the same time, labor-intensive activities, such as light industry and the retail sector, have been constrained by the past development emphasis on capital-intensive material sectors. The authorities are therefore faced by a need to address the type as well as the volume of economic activity. Equally, the scale and nature of unemployment has major implications for educational policy. Particularly obvious areas of concern are linkages between educational supply and labor-market demand in vocational-technical schools and in higher education. The present system of postsecondary education is highly specialized. It may be desirable to make programs of study more flexible so that graduates can better adapt to changing market needs. Important considerations also concern the size and shape of basic education; and serious issues are raised for adult education and the provision for retraining of workers who need to acquire new skills.

53. A final question to be raised here concerns brain drain. It has been the experience of China, for example, that opening of doors to Western countries has led to loss of a significant proportion of highly educated people. Many have gone first for further studies and have then remained in the host countries, either legally or illegally. Mongolia has suffered from this problem to some extent. The matter is not yet a major policy concern, but it may be necessary in the future to take stock of the extent to which the country will suffer from loss of some of the best trained human resources.

COSTS, FINANCING, AND PRIVATE/SOCIAL BENEFITS

Expenditures on Education as Proportions of the Budget and GNP

54. Table 2-8 presented a detailed breakdown of the 1993 budget by sector. Education was allocated 2.5 percent of the central government budget, 46.4 percent of the local government budget, and 15.2 percent of the total government budget. This was a decrease from the previous year, when education had been allocated 19.7 per cent of the total government budget. However, the figure was more similar to the proportions of the 1980s. It appears that educational expenditure increased as a proportion of the total because it was less easy to make abrupt cuts since teachers' salaries still had to be paid and schools heated.

55. The following figures supplement information on the budget, with statistics on government expenditure on education as a proportion of GNP:

	1985	1989	1990	1991	1992	1993*
Proportion of Budget	13.4	15.8	14.2	18.4	19.7	15.2
Proportion of GNP	9.3	11.6	12.1	8.7	12.5	7.1

* estimate

The statistics indicate that in 1993 the proportion of GNP budgeted for education was only half that allocated in 1992, though the extent of the fluctuation might reflect problems with the statistics as well as changes in reality.

56. While there is no international formula to indicate appropriate proportions of budgets and of GNP to allocate to education, it is helpful to note patterns elsewhere. Table 2-13 indicates proportions from a sample of countries, and shows wide variation. It is not difficult to find governments that allocate larger proportions of their budget than is the case in Mongolia; but it is also not difficult to find governments that allocate smaller proportions. In 1988-90 the average for all developing countries was 11.9 percent. Mongolia was therefore above this average.

57. More distinctive about the Mongolian pattern, however, is the high proportion of GNP consumed by education. This reflects the country's socialist traditions, in which government activities comprised a large proportion of GNP. It contrasts with Hong Kong, for example, where the proportion of the budget allocated to education is similar to that in Mongolia, but where the budget (and therefore expenditure on education) represents a much smaller proportion of GNP. For East Asia as a whole in 1988-90, 2.8 percent of GNP was consumed by education. The figure for developing countries as a group was 3.6 percent, and for middle-income countries 4.0 percent. It seems unlikely that Mongolia will be able to sustain the proportion of GNP that it has previously allocated to education. Since GNP is unlikely to rise dramatically in the near future, this implies that expenditures on education will have to be cut. In turn this means either that existing institutions must operate more efficiently, or that the number and/or scale of the institutions must be reduced.

Subsectors in Budgetary Expenditure on Education

58. Table 2-14 presents information on the distribution of government expenditure on education by level between 1990 and 1992. Kindergartens were consistently allocated about 20 percent of the total, and grades 1 to 10 were allocated about 55 percent. The proportion allocated to vocational institutions moved from 14.8 percent in 1990 down to 4.1 percent in 1991 and then back up to 6.8 percent in 1992. However, this seems to have been more due to reclassification of institutions than to a substantive change. The reclassification was also responsible for part of the fluctuation in allocations to post-secondary colleges and universities.

59. To supplement these figures, Table 2-15 provides a more

detailed breakdown of the nature of expenditure by level. As would be expected, salaries consume the largest proportion. A second item of considerable magnitude is described as administrative expenses but includes utilities and, in particular, heating. The need for heavy expenditure on heating is one factor which makes Mongolia different from the majority of nations of comparable per capita GNP.

60. Educational budgets for both electricity and heating have been greatly affected by price changes. In 1992 the price of electricity in Ulaanbaatar increased from Tg 0.5 per kilowatt to Tg 2.50 in state-financed buildings (including schools) and Tg 4.00 in private enterprises. On 1 June 1993, the price was standardized and increased again to Tg 13. Heating is charged according to the area of buildings, and charges have increased by a similar amount. To take a specific example, for the single month of January 1993, the College of Commerce and Business had to pay Tg 521,868 for heating and Tg 38,110 for electricity. The college has had to budget Tg 13 million for utilities in the 1993-94 academic year.

61. The increase in prices has made individuals and institutions more energy-conscious. However, one obstacle to reduction of heating bills is that in major urban centers it is mostly provided centrally and, unlike electricity, is not metered. While individuals and institutions may save money on electricity by turning off the lights, they cannot do so with heating. Indeed few radiators even have taps to allow them to be turned off. As a result, the radiators heat all rooms from 15 September to 15 May, day and night, regardless of whether the rooms are being used.

62. Another large item in Table 2-15 is for food. In the kindergartens this item consumed a third of the total in 1992, and exceeded even the amount paid on salaries. There would seem to be a good case for reducing this burden on the government by asking parents to contribute more heavily. Food also consumed 10 percent of the budget in the education subsector incorporating primary, middle, and general secondary education. Parents could be asked to contribute animals, some of which might be killed for meat but others of which could be used for breeding and milk.

63. In contrast, other items were allocated disquietingly small amounts. Books, for example, were allocated less than 0.05 percent in kindergartens and vocational institutions, just 0.2 percent in grades 1-10, and 0.4 percent in post-secondary colleges and universities. While schools can continue to function without new supplies of books for a short period, if supplies are not renewed after a long period then the system may be seriously damaged. Books are generally a cost-effective input which are worth protecting even in times of budgetary crisis.

64. It will also be noted that only 1.2 per cent of the budget was allocated to repairs. If buildings are not maintained, there is always a danger that future costs will be greater than the savings. The authorities would thus be wise to ensure that the repair budget is adequate at least to deal with essential maintenance.

Unit Costs

65. Crude figures on unit costs, derived simply by dividing the government expenditures on each sector by total enrollments, are as follows:

Kindergarten	5,944 tugrugs
Grades 1 to 10	2,035 tugrugs
Vocational schools	9,333 tugrugs
Postsecondary colleges	14,204 tugrugs
Universities	12,954 tugrugs

These figures aggregate institutions of many different types and locations, and they also divide expenditure data categorized by the 1992 financial year (which commenced in January 1992) by enrollment data for the 1991/92 school year (which commenced in September 1991). Nevertheless, the figures do provide an indication of orders of magnitude.

66. The most surprising feature of the figures is that kindergartens appear to have unit costs almost three times those of primary through general secondary education. The gap for 1992 is larger than in the previous two years; but even in 1990 and 1991 kindergarten unit costs were respectively 1.7 and 1.8 times the unit costs for grades 1-10. The chief explanation seems to lie in the high food budget in kindergartens, alluded to above, which in 1992 consumed one third of the total budget. It would be useful to examine the matter more closely to determine other explanations.

67. Another point of interest is that unit costs in post-secondary colleges are higher than for universities. This can be explained at least in part by the technical orientation of these colleges. Of course the universities also have technical subjects; but their average is reduced by the lower unit costs of the arts and social sciences.

Non-Government Expenditure on Education

68. During the period of the socialist regime, the government was almost the only agency with expenditure on education. It remains the dominant agency, though non-government agencies have increased in importance. Among the non-government agencies are 15 private post-secondary institutions teaching foreign languages, business, law and other subjects, and a number of private institutions operating at the level of basic education. Although the private sector remains small, its emergence is of considerable significance and the sector can be expected to grow. Non-government investment in education also includes parental expenditure on books, pencils, uniforms and other expenses. Ministry officials indicate that in 1992 parents could buy a set of teaching materials for one student for about 100 tugrugs. By mid-1993, however, the materials cost about 1,500 tugrugs and school uniforms cost a similar amount. Bus fares, which some parents have to pay to

get their children to school, increased in Ulaanbaatar from two to ten tugrugs in 1993.

69. At the level of K-10 education, some contributions of food have been made by parents of children in kindergartens and boarding schools. As noted above, one striking feature of the 1992 budget for kindergartens was that food consumed 33.1 percent of the total. The government subsequently asked parents to pay for half of kindergarten food costs. There has also been discussion of parental contributions to food in boarding institutions at the primary, middle and general secondary levels.

70. A further private cost in higher education arises from the new policy to charge fees. In government institutions these fees are expected to cover what the authorities call changeable expenses, of which the largest component is teaching staff salaries. The policy was announced in July 1992, and was to have taken effect that year. Some government institutions did admit some fee-paying students in 1992, but the government, after having been alerted to complexities in the implementation of the new policy, decided to delay general implementation until 1993.

71. The size of fees various widely both between and within institutions. Most institutions charge at least 20,000 tugrugs per annum, and some charge over twice that amount. The Technical University, for example, charges different fees for different courses and for different years. The university trains people for 41 professions, and most courses last five years. Fees for 1993-94 range from 22,000 to 49,000 tugrugs. Comparable fees are charged in the private post-secondary institutions.

Private Benefits

72. The private economic benefits to education depend strongly on wage and salary structures, though they may also depend on other income-generating activities. The situation is currently very fluid, but it is at least possible to map the broad outlines. The following figures indicate the proportions of family incomes from different sources in 1992 and 1993:

		City	Countryside
1992	Salary	61	40
	Pension	8	9
	Private farming	3	39
	Others	28	12
1993	Salary	57	34
	Pension	9	11
	Private farming	1	25
	Others	33	30

73. For average city dwellers in 1992, 61 percent of family

incomes came from wages, 8 percent from pensions, 3 percent from farming, and 28 percent from "others". The last category chiefly covered such activities as private trading. The proportion in this category increased markedly between 1992 and 1993. In contrast to the cities, families in the countryside derived only 40 percent of their incomes from salaries in 1992. As might be expected, the proportion gained from farming was much larger than in the cities. The proportion described as "others" was smaller than in the cities. However, it grew markedly; and the proportional margin between city and countryside dwellers in 1993 was much less than in 1992.

74. Because of the amorphous nature and recent growth of the "others" category, it is difficult to state the role of education in income-generation. Such activities as foreign-language teaching may be linked very directly to education. Others may have less direct links, for example via business opportunities. Data on wages, by contrast, can show links rather more clearly. Until the recent economic transition, wage levels were remarkably stable. Table 2-16 shows average monthly wages, by sector, for the 30 years up to 1990. The material sectors showed greater increase than the nonmaterial sectors, but even in the material sectors the increase in average wages was just 61.6 percent, or about 2 percent per annum; and part of this increase was justified by increased productivity rather than mere inflation. In the nonmaterial sectors the increase in average wages was just 24.7 percent, i.e. below 1 percent per annum.

75. The era of open inflation commencing in 1990 brought abrupt change to this situation. However, wage increases have fallen far behind inflation, bringing major reductions in real income. Table 2-17 indicates the government salary scale introduced in December 1992. The scale brought a major increase, and rates of income tax were low (e.g. 1.8 percent on monthly incomes of 5,000 tugrugs, and 2.5 percent on incomes of 6,300 tugrugs). However, the rate of inflation rendered the new salary scale untenable within a few months. On 15 June 1993 the government gave all employees a flat increase of 1,500 tugrugs per month. It later promised another flat increase of 1,500 tugrugs from 1 September.

76. One striking feature of this salary scale, given the rate of inflation, is the low total amount being paid at each level. Indeed in mid-1993, even with the 1,500 tugrug supplement, salaries even of the highest-paid workers were inadequate to live. Rents increased markedly during the first half of the year, with the rent for a typical apartment in Ulaanbaatar increasing from 800 to 3,500 tugrugs per month, and with further increases in the pipeline. The cheapest style of shoes in a department store cost 1,690 tugrugs; and other daily essentials were equally costly (Table 2-18). The only ways to make ends meet were to have more than one salary in the family and to undertake additional work after hours.

77. A second feature of the salary scale was the narrow difference between the top and bottom. Thus, a university rector with 15 or more years of experience (B-9 on increment V) earned only 2.3 times the wage of a watchman with 15 or more years of experience (A-1

on increment V). This reflected the country's socialist history and policy of a narrow band of wages. Ironically, however, the advent of the capitalist system narrowed the range rather than widened it. The grant of two flat-rate increases of 1,500 tugrugs to all employees in 1993 meant that the rector was then earning only 2.2 times the wage of the watchman. This form of wage compression can reduce the private returns to higher levels of education.

78. In many countries senior officials gain additional benefits, and salary scale is therefore an inadequate indicator of real incomes. This is true to some extent in Mongolia, but the hidden benefits are not as great as in many countries, either capitalist or socialist. For example, housing is not usually provided with jobs; nor are senior officers generally given cars or such other privileges.

79. Although in mid-1993 incomes on the official salary scale were inadequate even to meet basic living needs, tertiary institutions were charging annual fees commonly in the region of 20-30,000 tugrugs, and appeared to have no shortage of applicants willing to pay the fees. The question then arising is why applicants were willing to pay such high fees when it appeared that the rate of return would be low and possibly even negative.

80. The answer to this question is multi-faceted. First, many graduates aspire to work in the private sector, where salaries were commonly at least three to four times those in the public sector. Second, the opportunity cost of studying was relatively low, especially since students could undertake private trading and other activities outside classroom hours. Third, traditions were maintained from the past when higher education had provided student stipends and been free of charge and had been desirable because it did lead to incomes which were higher even if not dramatically higher. During the early 1990s the economy was in turmoil and the old rationales may no longer have been valid. However, it was generally assumed that when the economy settled down higher education would again have a very positive rate of return. While few applicants to higher education institutions would have worked this out systematically, the experience of almost every other country in the world would have supported them in their assumptions.

81. The previous discussion largely refers to the cash economy and the urban sector, and forces in the non-cash economy were rather different. When the system of compulsory education began to break down, many pastoral families withdrew their children from school. Withdrawals were especially heavy for boys, chiefly because parents wanted their sons' labor with the herds and did not see strong economic benefits from their sons continuing education in school.

Social Benefits

82. The matter of withdrawal of children from school also raises issues concerning the social role of education. It is widely felt that education is a social good, and that a more highly educated society is

generally more civilized and mature, can have a more democratic political system, etc.. While empirical evidence does not always give strong support to such assumptions, the notion of education as a social good should be taken seriously.

83. However, the transitions of the early 1990s may introduce and exacerbate various social inequalities. For example, the introduction of tertiary education fees may discriminate against families which have little contact with the cash economy, particularly those outside Ulaanbaatar, and those who operate within the cash economy but are impoverished. The government has established a State Training Foundation to give loans to needy applicants, but many implementation details remain to be worked out satisfactorily. Also, there is a danger that, at least to begin with, the State Training Foundation will have to concentrate on assistance with fees and will have to neglect loans for students' living expenses which are equally necessary. The transitions may also have implications for gender disparities. Mongolia is unusual in global terms in having higher female than male enrollment rates in most tertiary courses. It will be important to monitor the impact of economic and policy changes on enrollments by gender.

84. In so far as education is an investment for the individual, and the individual is a member of society, then education is also an investment for society. The comments above on rates of return therefore have relevance to the society as a whole. However, it is important to distinguish between private and social rates of return. When individuals gain the benefits of education but do not pay the full costs of education because it is highly subsidized, then social rates of return are not as high as private rates of return. In Mongolia the scale of subsidy has in the past approached 100 percent, but is now being decreased, especially in higher education. Also, income taxes have been introduced, even though they remain at a very low level. The move towards market mechanisms is leading to a convergence of private and social rates of return.

85. Of course education also has externalities and non-economic benefits. These include the benefits arising from all members of society being literate. The fact that all members of society have experienced the processes of schooling by itself has a social impact; and education systems can be used as vehicles for dissemination of political and other information. These social aspects of the education system are usually difficult to quantify. However, they may be of importance and should be weighed in the balance at the time of policy formulation. Mongolia is currently undergoing a major process of transition, and it is important to include consideration of all elements.

OPTIONS FOR POLICY, PRACTICE, AND FURTHER STUDY

86. During the period of socialist government, Mongolia was in

the fortunate position of receiving inflows from the Soviet Union of up to 32 percent of GDP. The collapse of the Soviet Union and the termination of these inflows has created a crisis for education as much as for other sectors. Although Mongolia is with some success transforming itself into a capitalist society and is attracting resources from international organizations and bilateral donors, it seems unlikely that the new flow of resources will be able to match that which used to come from the Soviet Union, at least in the short and medium run.

87. During the budgetary crisis, the education sector may be particularly vulnerable. Policy-makers may wish to give priority to sectors likely to bring rapid economic returns, and may consider the education system less worthy of resources. While such a policy would be understandable, it could have serious implications. Mongolia has had a strong education system. The benefits from this education system are both economic and social, and are long-term as well as short-term. It would be a grave mistake to withdraw so many resources from the education system that it suffers permanent damage, especially if that damage subsequently required more resources to rectify than were saved in the first place.

88. Planners must also be mindful of population growth. Future budgets must cater for a larger education system, not just one of the present size. Population projections indicate that the number of children under the age of 16 will increase from 900,600 in 1990 to 993,700 in 1995, 1,097,300 in 2000 and 1,161,500 in 2005. This is a growth of 29.0 percent in just 15 years. This context clearly requires urgent action (a) to generate more resources for the education sector, and (b) to reduce costs. Details on proposals to do this in each subsector are presented in subsequent chapters, but meanwhile it is worth highlighting some major elements.

Generation of Additional Resources

89. Beginning with the total availability of resources, a great deal depends on the nature of the economy, which is beyond the control of the education authorities. If the economy recovers and strengthens, then more resources will become available for all sectors, including education. At the same time, resources for particular projects can be solicited from external agencies and bilateral donors.

90. In keeping with its general philosophy of privatization, the government is encouraging the development of private educational institutions. These are most obvious at the post-secondary level, but may also develop at lower levels. To the government the advantage of these institutions is that they release pressure on the public purse. However, they also raise questions of equity and perhaps quality, and the implications of policies should be considered carefully in advance.

91. The government is also encouraging educational institutions to secure their own ways to generate resources. This may be relatively easy for vocational institutions and for universities, but is more

difficult for K-10 schools. The ways that institutions currently raise revenue range from renting facilities to managing flocks of sheep. One guideline which has been proposed for institutions at the level of basic education is self-generated revenue to cover 10 percent of total expenditures. Clearly this is easier to achieve for institutions of some types and in some locations than for others. It is essential for the authorities to monitor the scale and nature of revenue-raising activities, and also to identify the impact of these activities on the educational goals of the institutions. There could be a danger in some cases of revenue-generation becoming such a prominent goal that it occurs at the expense of educational goals.

92. Specifically in higher education, the government has announced a policy through which all institutions are required to charge fees to cover at least their salary costs. The authorities have indicated that loans will be available for impoverished students, though the details of implementation remain to be worked out satisfactorily. It will be essential also to monitor the impact of the fee-charging policy. It will be especially important to identify its impact on social and gender equity, and on the balance of courses offered within particular institutions and the higher education sector as a whole.

93. In the old system, enterprises commonly made contributions to the operation of educational institutions. The advent of emphasis on profits brings a danger that contributions of this type will disappear. However, the government could encourage maintenance of such contributions first through general publicity of the need, and second through exemptions or reductions in taxation for such contributions. Another way to raise resources would be to ask parents and the community as a whole to shoulder a greater burden. The government policy of asking parents to pay for half of kindergarten food costs seems very reasonable given that parents would have to pay for their children's food if the children were not in kindergarten. Indeed there may be a case for asking parents to pay more than half the cost. Similar comments apply to the food for students in boarding schools.

94. In many other countries, moreover, contributions by parents and community members go far beyond modest assistance with food and include help with construction and maintenance of school facilities. It might be possible to harness resources not only for this purpose but also for assistance with heating and other needs.

Reduction in Costs

95. Generation of additional resources should be accompanied by efforts to reduce costs. One way to do this is to close either parts of institutions or whole institutions. In the kindergarten sector, 78 of the 806 institutions closed during or at the end of the 1992-93 school year. Also, Grades 9 and 10 have already been terminated in some schools, and scope may exist for rationalization, especially in higher education which now has many public as well as private universities with overlapping mandates. Once again, rationalization

has to be addressed carefully because it will have long-term as well as short-term implications. For example, only one of the 78 kindergartens which closed was in Ulaanbaatar. This suggests that the closures were hitting rural communities more heavily than city ones.

96. Given that heating consumes so large a proportion of total expenditure in Mongolia, that sub-sector would seem to deserve particularly close attention in cost-cutting measures. Many institutions have been constructed with large rooms, draughty windows and high ceilings, and are thus very inefficient users of heat. The centralized system of heating in the cities, in which consumers have neither the incentive nor the mechanism to conserve on heat, also needs reform. An investment in redesign of school buildings might pay major long-term dividends. The education authorities could also propose mechanisms to reform the systems of centralized heating. Other possible ways to conserve on heating include adjustment of the school calendar to reduce the amount of school-time in the winter, and the use of gers instead of brick buildings.

97. A further way to reduce the costs of boarding might be to reduce the size of the present institutions and to create larger numbers of small schools scattered closer to the homes of the children. These schools could have multigrade teaching, and might even be mobile to accompany the nomads as they move. Discussions are already underway on various education projects to serve nomadic families, and there might be scope for linkage between formal schooling and nontraditional education delivery systems.

98. In most countries, efforts to reduce costs begin with scrutiny of staffing levels. Reductions in staff may be both possible and necessary in Mongolia. It is true that at present wage-levels labor is inexpensive, and that the policy to retain staff has a beneficial social effect. However, the fact that current salaries are inadequate to meet basic living standards means that the government is under strong pressure to raise salaries. Education is a very labor-intensive activity, and when salaries are increased the impact on the total budget will be considerable. For this reason, the government would be wise to seek reductions in staffing as far as possible. This applies both to the teaching force and to administrative staff.

99. In the thrust to reduce costs, however, it is again important to sound warnings about false economies. The budget for textbooks has been reduced to the minimum. International experience indicates that textbooks and instructional materials can be a highly cost-effective investment in the quality of education, and the Mongolian authorities would be unwise to neglect this subsector. Similar comments apply to the budget for maintenance of buildings and equipment.

CHAPTER 3

EDUCATIONAL MANAGEMENT

INTRODUCTION

1. Managing major educational systems and academic institutions is a daunting challenge under the best of conditions. The needs and demands of students, teachers, fellow administrators, parents, and the general public must be balanced against the harsh realities of economic constraints, political pressures, and the competition for scarce resources. In Mongolia, these realities reached critical proportions when financial and technical support from the USSR was terminated and the favorable import-export trading system, on which the nation had become so dependent, collapsed. Suddenly, a seventy-year-old educational enterprise heavy with foreign experts and advisors was left to fend for itself. Few Mongolians had had experience in ministerial or institutional administration and virtually no Mongolians had been trained in management functions. At present, except for short courses, there are few systematic programs for the training of educational administrators in the country.

2. In this chapter the status of Mongolia's educational system will be reviewed in terms of the effects that new governmental reform policies and the onset of a deep financial crisis have had on the Ministry of Science and Education and all the institutions and agencies of higher education, postsecondary education, and primary/secondary education with reference to the administration and management of that system. Following a brief historical preview, the basic principles guiding the reform of Mongolian education and the establishment of new management structures and systems in the Ministry, the aimags, and the universities are presented. The overall effectiveness of the new organizational structures is also assessed. With the decentralization of the public school system, increased autonomy in the universities, and the authorization of private institutions, former systems of personnel management, financial control, and administrative accountability in the Ministry of Science and Education have undergone marked changes. The current status of each of these management systems is discussed. Also, because the rapidity of change has placed such a premium on the need for skillful managers and administrators, Mongolia's institutional capacity for management training is examined in some detail. Finally, to strengthen the nation's capabilities to manage, consolidate, and sustain its reforms, several recommendations and suggestions are presented in summary form. It is hoped that they will stimulate discussion and debate, and facilitate establishment of clear priorities.

HISTORICAL SETTING

3. Recent political developments have set the stage for major reforms not only in the education sector but also in all other sectors of the society. Of historic significance was the repudiation of the theories of communism by the Mongolian People's Revolutionary Party (MPRP) at its congress in 1992. Acting under the terms of the new Constitution, the MPRP also won 71 of the 76 seats in the parliament, thus becoming the first democratically elected ruling party. Operating under this strong mandate, the MPRP set out to stabilize the declining economy, expedite the transition to a free market economy, and undertake certain democratic initiatives, including the privatization of property and the decentralization of government. In addition, it adopted measures for restructuring the central government. Several new ministries were established and nearly all existing ministries are being reorganized.

4. The former State Committee for Social and Economic Development has become the National Development Board; it is headed by a Minister of State who reports directly to the Prime Minister. The Board is charged with, among other things, the management and coordination of macro-economic policies and priorities. The new government has also established the Ministry of Administration to ensure the execution of government decisions, management of personnel policies, and coordination of local decentralized governmental activities with those of the ministries of central government. Its importance is reflected in the fact that the Minister of Administration holds the rank of Deputy Prime Minister. Other new ministries include the Ministry of Construction and City Planning, the Ministry of Culture, and the Ministry of Labor and Population Policy. The former Ministry of Education has been transformed into the Ministry of Science and Education (MOSE).

5. Dependence on the Soviet Union and Eastern European countries no longer exists. The old centrally planned economic system has been abolished. In its place, the new government has established the legal basis for a free enterprise system. If the transition is successful, the national economy is expected to begin to grow as early as 1995. However, the current economic and financial crisis is severe and recovery may be much slower than expected. The economy experienced a wrenching recession in 1991. It deteriorated further in 1992. Food production dropped by 23 percent, coal production by 23 percent. Over the past three years grain production has decreased by 40 percent. Adding to these shocks, the rate of inflation for 1992 grew to 320 percent. For the Mongolian economy to achieve sustainable recovery, measures must be taken to halt the decline and to create the conditions for recovery. Economic transformation requires the formulation of strategies, many of which have been discussed with the World Bank, the Asian Development Bank, and the International Monetary Fund, for restructuring the economy according to the country's comparative advantages. Mongolia has abundant natural resources. It has a strong agricultural base favorable to the diversification and broadening of its international trade. It boasts a literacy rate of more than 90 percent in a population of 2.2 million people. Furthermore, under

socialism, the country had achieved significant progress in meeting reasonable standards of health and education.

6. Mongolia is entering a new era of austerity and opportunity. To keep a well endowed educational system from deteriorating as severely as the economy (in recent years over 20% of all government expenditures have been allocated to education), and to design a national system for human resource development which is based on that system, the management capacities of all government ministries, especially the Ministry of Science and Education, and all educational institutions must be strengthened and improved.

MANAGEMENT STRUCTURES AND SYSTEMS

7. The basic principles guiding the reform of Mongolian education and establishing the new systems of administration and management are set out in the Education Act of 1991. Relevant provisions of Chapter Three, Article Five, entitled Educational Administration, Structures, and Economic Relations, read as follows:

- A democratic, independent, productive educational administration system shall be established.

- The administration system will have certain legislative rights and will be founded on a sound economic base.

- The Minister of Education will follow the national policy on education and will administer all educational institutions at national and local levels.

- The Minister of Education will support the establishment of educational institutions which must have certain facilities, training equipment, teaching staff, and property.

- Educational administration will follow a policy of democracy and openness, and will include an advisory group consisting of the general public and the teaching staff.

- Public schools will have principals and vice principals who are appointed by local educational boards.

- The government will support all kinds of activities which are directed toward teachers' self-education, including research, and which will benefit the welfare of schools.

- The Minister of Education will set the school terms of instruction according to local conditions.

- The Ministry of Education will promote the quality of education by supporting teachers in their efforts to achieve advanced degrees.

- Students of vocational schools may gain admissions by passing entrance examinations. Vocational schools may set their own admissions requirements. In the admissions process, selection will involve specialists and potential employers. Students may go abroad to study in specializations not offered in Mongolia. Students selected to study abroad will be selected from those studying in their first or second year of postsecondary education.

- Students who are qualified to do research will be supported in their efforts to enter post-graduate masters-level and doctoral-level work in order to increase the number of persons with advanced degrees in the universities.

- All educational institutions must come under firm academic control and retroactively beginning in 1991 control systems will be implemented.

- The financing of education will be based on national and local budgets. The Minister of Education may increase the budget in line with principles of the market system. Based on student cost, local government departments will subsidize the schools and universities.

- Support will be given to educational programs requiring tuition or fees. Charging tuition will not result in the decrease of the national budget. Opportunities for students to take out bank loans will be expanded.

- Support will be given to the establishment of private schools using contributions from national companies, industrial firms, and individuals.

- The national and local governments are responsible for providing technical and training equipment and teaching materials to public schools, including colleges and universities.

- Buildings and facilities will be constructed in accordance with standard plans and specifications, including furnishings and technical equipment.

- University education will be developed to world-class levels in collaboration with international associations and donor organizations.

- The educational system will improve the social standing of teachers, students, and graduate students in order to develop education as a leading branch of society.

- The salaries and benefits of instructors will be paid in accordance with their education, quality of education, productive activities, and length of time of employment.

8. Additional plans, regulations, and reform goals are reflected in numerous Ministerial Executive Orders which have been and continue to be issued periodically by the Minister of Science and Education. For example, with regard to higher education, an order issued in May, 1992 and entitled "Statutes of Universities" outlines a new classification of degrees. A July, 1992 order entitled "Finance of Higher Education" sets forth new regulations governing the allocation of resources. This order, together with others issued in August, confirm the direction that reforms have been taking. They acknowledge the fact that the government will no longer supply full support for institutions of higher education. They direct the establishment of a tuition and student loan program. They reconfirm the policy of academic freedom allowing colleges, institutes, and universities to plan their own academic programs and to seek funding for research and service activities from both public and private sources.

9. Prior to the election of the new government in June 1992, the former Great Khural (parliament) adopted the new Constitution of Mongolia which was officially passed on January 13, 1992. This document set forth important legal principles further directing the formation of administrative organizations and systems for the new educational establishment. Several provisions affecting reform, particularly those determining the structure of the Ministry of Science and Education, are significant:

> Chapter Two, Article 16
>
> 7. All citizens of Mongolia have the right to education. The government shall provide education for all through secondary education free of charge. Citizens have the right to organize private schools as needed at all levels, but they should conform to demand as determined by the government.
>
> Chapter Three, Article 38
>
> 2. Government officials shall promote the unification of science and technology and propose to parliament plans unifying science and technology. Government shall be responsible for carrying out the decisions of parliament in this regard.
>
> Chapter Three, Article 39
>
> 2. The Prime Minister shall choose the Minister of Science and Education, other ministers, and other members of government.
>
> 3. Parliament shall approve appointments and make the appointments.

10. More recently, the Khural approved a "cabinet law" (May 11, 1993) concerning the Ministry of Science and Education which clarifies and specifies additional rights and responsibilities with which this government body is now charged:

> Chapter Four, Article 20
>
> 1. The Minister shall be responsible for science and technology and all levels of educational policy relating

to these areas, and shall develop policies governing science and technology.

Chapter Four, Article 24

1. The Minister shall be a member of the Cabinet.

2. The Minister is given authority to formulate government policies and carry out government decisions.

3. The Minister shall appoint administrators of all institutions under his jurisdiction and approve all regulations governing these institutions, including salary, staff, and administration.

5. The Minister shall develop regulations governing science and education and shall organize means for their implementation. If regulations overlap with other ministries, the Minister shall coordinate such activities in collaboration with those ministries.

11. With special reference to the area of higher education, the Khural created the Higher Education Reform Commission in June, 1991 for the purpose of coordinating policy and planning among all institutions of higher education in the country to facilitate their efforts to implement institutional reforms. The Commission is charged with identifying short-term and long-range educational needs, assessing the impact of changing economic conditions on higher educational institutions, appraising the performance of individual colleges and universities and defining their respective roles in the changing higher education system, and preparing proposals for international agencies and other funding organizations. Composed of representatives from several sectors, including the general public (See Figure 3-1), the Commission develops policy which the Parliament must approve. However, working with only one and a half staff members and a small budget, the Commission is dependent upon the Ministry of Science and Education for gathering information and conducting studies and evaluations. Thus, working closely with the Commission, the Ministry has become the de facto implementing agency of the Commission, carrying out policies formulated by the Commission and approved by the Parliament. In the future, the Commission might well play a major role in directing educational reform in such areas as accreditation and master plan development. To date, however, the body has not been very active and meets infrequently.

12. In early 1992, the Foundation for the Promotion of Higher Education was also established (See Figure 3-1). Its purpose has been to develop closer relations between business and industry on the one hand and educational institutions on the other. However, like the Higher Education Reform Commission, the Foundation remains largely inactive. The reason may be that both organizations were created as quasi-independent bodies and asked to operate outside the mainstream of normal government activity. Most Mongolians, it would appear, find it difficult to relate to non-governmental agencies. This is not surprising given their past experience with a governmental system that was all-pervasive.

13. The MOSE is central to the entire reform effort. At present

its operating plans for the immediate future reflect a mix not only of the provisions of the new Constitution, parliamentary laws, and Ministerial policy statements and directives but also the numerous existing regulations and administrative procedures which have been inherited and which were a part of the former administrative bureaucracy. While many of them are currently under review, they remain in force until new management structures and systems can be designed and put in place, and new educational plans can be developed. The Ministry's plans also reflect the recommendations of a series of consultant reports which provide guidelines based on considerable educational and administrative experience in developed countries.

14. However, these are beginning steps. While many factors affect management structure generally - size and expanse of the system, types of educational program, students to be served, and available resources -the reorganizing process should develop from a clear-cut conception of the educational system's new revised mission. For this to happen, the organizational structure of that system needs to be rooted in planning. Furthermore, both management structures and management systems in the Ministry and in the schools, colleges, and universities must develop from the planning process. Under the former command system of education, there was little need for ministerial and institutional planning, especially master planning, because the entire process was centralized and all goals and objectives were prescribed. Now, however, the Ministry of Science and Education must face the perplexing problems of defining new goals for the nation's educational system and also deal with the difficulties produced by the distinctive nature of the organization that it has inherited.

15. This distinction between policy making and policy implementation is an important one. The former Ministry of Education was responsible solely for administering policy whereas the present Ministry of Science and Education is responsible for both functions. Once policy is made, however, a downward organizational flow is responsible for implementing policy in the kindergartens, primary, and secondary schools. This process is not the same in most universities. Because most institutions of higher education have unique governance systems in a democratic society, policy issues progress upward, sometimes through subcommittees and committees and councils, to top administrators and/or governing boards for formal action. Thus, if a university is so structured, policy making is the result of an upward organizational flow, and policy implementation the result of a downward flow.

16. Closely related to these differences is the dichotomy between the academic and nonacademic cultures of educational institutions. In the Ministry this distinction is reflected in the titles, duties, specializations, and operating rules of the three administrative departments headed by Directors on the one hand, and the three educational "policy" departments headed by Directors General on the other hand. In schools, colleges, and universities the distinction is even more marked. In many institutions the nonacademic side is often referred to simply as "the administration." Sizes of offices, ratios of administrators to teachers, separate and joint responsibilities, and

the like become important organizational issues in this dual culture environment. More importantly, when the Minister of Finance is forced to make drastic budget cuts or when enrollments increase or suddenly decline, reorganization can become a major task.

17. Two additional factors that will influence the organizational structure of both the Ministry and Mongolia's educational institutions, now and in the future, are (1) the identification and training of needed personnel and (2) the establishment of clear lines of authority and accountability. Both factors will be discussed below.

18. Mongolia is in a state of major transition. Its educational system is undergoing dramatic organizational change. The new Ministry has been charged with combining science and education; decentralized management has been delegated to the aimags; greater autonomy has been mandated for the colleges and universities; and private institutions are being authorized at all levels. Except for the constraints of a serious nation-wide financial crisis, change would be even more rapid. Figure 3-2 shows an organizational chart of the Ministry as it exists today. It illustrates the centralized management structure and systems that have been put in place during the "transition" period. The basic structure itself has undergone little change from that of the former Ministry of Education. It is the functions and responsibilities that have changed.

MOSE Organizational and Staff Responsibilities

19. Unlike business, which tends to be organized by a combination of factors (function, territory, customer, time, and product), education and government are most commonly departmentalized by office and staff function. The MOSE is no exception. Referring to Figure 3-2, and noting how carefully the integration of education and science/technology has been introduced into the organization, and how the new emphasis on educational policy making has been interwoven into all of the professional departments, the functional responsibilities of each office and department are as follows:

Minister of Science and Education

Responsible for policy concerning science, technology, and scientific information, and all educational policy.

Vice Minister

Responsible for the internal administration and operations of the Ministry.

Department of Administration
(Director, Deputy Director, three staff members)

Responsible for teacher training policy (in teacher training institutions and for inservice training programs).
Responsible for personnel management (for all personnel in MOSE and top personnel in universities, colleges, institutes; teachers and administrators in K-10 institutions are managed locally by aimags).

Deputy Director: Responsible for the internal administrative staff of MOSE. Responsible for supervising and controlling the execution of all government regulations and directives concerning education. Secretary to the Minister's Council.

First officer: Responsible for institutes, colleges, and enterprises. Responsible for personnel of K-10 schools. Responsible for achievement awards. Responsible as MOSE's legal consultant for the interpretations of laws pertaining to education.

Department of Economics and Social Welfare
(Director, Deputy Director, eight officers)

Responsible for financial and social security policy of the educational system (K-Graduate Schools, including Institutes).

Deputy Director: Responsible for policy and internal financial and social security matters of all MOSE departments.

First officer: Responsible for the planning, allocation, and controlling budgets of the entire education system.

Second officer: Responsible for educational planning for the entire system with special reference to student admissions, promotions, drop-outs, and graduates.

Third officer: Responsible for investment (capital) allocations for buildings, equipment, maintenance, etc.

Fourth officer: Responsible for financial information related to student admissions, promotions, drop-outs, and graduates, and to investment allocations.

Fifth officer: Responsible for accounts and for financial reports to be forwarded to the Minister of Finance and the National Statistical Board.

Sixth officer: Responsible for the supervision and examination of all financial activities throughout the system and within the Ministry of Science and Education.

Seventh officer: Responsible for staff, salaries, and social security of all employees in the educational system.

Eighth officer: Responsible for supplies for science and

education, including textbooks, laboratory equipment, computers, etc.

Department of Pre-School and General Secondary Education
(Director General, Deputy Director, seven officers)

Responsible for overall pre-school, primary, middle, and general secondary school education policy.

Deputy Director: Responsible for the external affairs of the department.

First officer: Responsible for pre-school education policy (including nursery schools).

Second officer: Responsible for primary education policy, social secondary education policy.

Third officer: Responsible for compulsory (basic) education policy and labor, and aesthetic education policy.

Fourth officer: Responsible for upper secondary education and natural science training policy.

Fifth officer: Responsible for special education policy.

Sixth officer: Responsible for nonformal education policy.

Seventh officer: Responsible for local and rural education policy.

Department of Postsecondary Education
(Director General, Deputy Director, five officers)

Responsible for postsecondary education (Higher, Vocational, and Technical Education) policy.

Deputy Director: Responsible for the internal affairs of the department.

First officer: Responsible for vocational and technical education policy.

Second officer: Responsible for colleges and specialized secondary school policy.

Third officer: Responsible for higher education institutional policy (including private institutions).

Fourth officer: Responsible for the integration of education, science, and production policy.

Fifth officer: Responsible for policies governing foreign

students and Mongolian students studying abroad.

Department of Science and Technology Policy
(Director General, Deputy Director, ten officers)

Responsible for overall policy regarding science and technology policy, and university science development policy.

Deputy Director: Responsible for the internal affairs of the department and supervision of the execution of government laws and directives.

First officer: Responsible for funds for science and technology, also budget and policy.

Second officer: Responsible for agriculture, biology, biotechnology policy and projects.

Third officer: Responsible for "non-production" science studies and international geological explorations, including joint projects.

Fourth officer: Responsible for environmental science policy.

Fifth officer: Responsible for information, electronics, and standards policy.

Sixth officer: Responsible for medical, food, and light industry science policy.

Seventh officer: Responsible for automotive, metallurgic, and transport science and technology policy.

Eighth officer: Responsible for new materials, chemistry, and construction science and technology policy.

Ninth officer: Responsible for social science policy.

Tenth officer: Responsible for electric power and mining science and technology policy.

Division of External Relations and International Cooperation (Head, four officers)

First officer: Responsible for relations with international organizations, such as ADB, UNESCO, UNDP, World Bank.

Second officer: Responsible for relations with countries located on the American continent and in Western Europe.

Third officer: Responsible for relations with Asian countries.

Fourth officer: Responsible for relations with countries of the former Soviet Union and Eastern Europe.

20. The five major operating departments comprise the core of the present MOSE - the Division of External Relations being, in point of fact, ancillary in the departmental structure of the organization. In addition, there are five other offices that report directly to the Minister (See Figure 3-2). The most important of these, in terms of the EHR Sector Review, is the Inspectorate Board of Education. This relatively new government agency was established in November, 1991, for the purpose of establishing and enforcing standards of education at all levels - from kindergarten through graduate school. It is responsible for setting levels of quality for teaching, curriculum, and administration and, in the name of the Ministry of Science and Education, for following up, monitoring, and controlling activities in the schools, colleges, and universities to ensure compliance with those standards.

21. However, the Inspectorate remains a quasi-independent body under the Ministry. It has not yet become an integral part of the operational and policy-making activities of the Ministry itself. Nevertheless, in accordance with ministerial directives, a seven-member Board, appointed the Minister, is now headed by a Chairman and General State Inspector who has also been appointed by the Minister. The Board has an advisory council of experts composed of 35 members which meets regularly. There are six national inspectors, each of whom has three to five advisory experts who are paid part-time inspectors currently working in the schools. In addition, there are 22 local inspectors, appointed directly by the Minister, who are stationed in all of the 18 aimags and four cities of the country.

22. The principle activity of the Inspectorate appears to be conducting examinations in the schools which are "relevant to local conditions" and which reflect distinctions in student populations, such as urban-rural differences. The technique is to give the same achievement test to both students and their teachers and to take note of prominent discrepancies. However, many additional factors are taken into consideration in judging classroom performance and in evaluating teachers. For example, separate tests in educational theory and teaching methodology are administered to teachers and the results analyzed. Under current regulations, teachers who do not comply with recommendations for improvement may be fined by local inspectors. Recognizing the need for establishing national standards in education, the Inspectorate is studying the possibilities of developing and conducting a series of standardized tests on a nation-wide basis at the end of grades one, three, six, eight, and ten. It is also seeking a revision in government regulations which would permit all standardized test construction to be located and staffed in one center - in the MOSE. Although the Inspectorate has yet to define academic standards in higher education, it is planning to begin working with several of the universities soon, and it will request that they initiate a test development program to design institution-specific examinations for bachelor's and master's degree candidates. However, the prior issue, as yet unresolved, is for the universities and the MOSE to decide what

the basic requirements should be for awarding bachelor's, master's, and doctoral degrees.

23. Additional planning in the Inspectorate has focussed on the need for developing national programs of accreditation and/or licensing for academic and professional programs and for individual institutions, both public and private. The recent establishment of more than 20 private institutions, for example, raises the question of how many of them are qualified to call themselves "universities" or "colleges." Similarly, questions have been raised as to whether the branch campuses and colleges affiliated with some of the universities offer acceptable university-level courses of study. Several of these outlying institutions would appear to be little more than specialized secondary schools.

24. The danger in standardized testing, ministerial accreditation, and rigid enforcement of curriculum content and teaching standards is the possible substitution of one kind of centralized, authoritarian system for another. Standardized test scores can be misused; accreditation and licensing can become arbitrary and tyrannical; and close monitoring can deprive school teachers and university professors of individual expression and academic freedom. When the Inspectorate is brought into the Ministry and is made a regular part of the MOSE's operational activities, its goals and objectives need to be very well-defined, and its programs for achieving those goals must be carefully planned and reviewed.

25. Much of the Ministry's organization is in a state of flux, particularly on the professional side. New responsibilities are being assumed; others are being moved from one department to another; still others are being shifted to ministries and agencies outside the MOSE. The most dramatic changes have occurred as the result of a Cabinet directive which ordered the Ministry, effective January, 1993 to transfer all of its operational responsibilities for the day-to-day administration and management of the public school system into the hands of the aimags and the cities. Duties and activities which earlier had formed the core of a large, expansive, and highly centralized Ministry of Education suddenly became the responsibility of local government. Gone were the responsibilities for teacher recruitment, inservice training, teaching methodology and curriculum in kindergartens, primary schools, secondary schools, technical and vocational schools, and the management of schools, as well as the recruitment, appointment, training, and retention of principals, vice principals, and other school administrators. At the same time, whatever responsibility remained in the Ministry for curriculum development and for inservice training, for example, has recently been moved from MOSE to the Pedagogical University. However, with the withdrawal of Mongolia's central planners, the Ministry is assuming new responsibilities for educational policy formation, master planning, and the evaluation of education outcomes.

University Management Structures

26. Having also been granted greater autonomy under the policy of decentralization, the universities of Mongolia have undertaken initiatives to introduce a number of fundamental educational reforms. However, like the MOSE, the basic structure of Mongolian universities, though somewhat changed, has remained intact. Figure 3-3 shows the organization chart of the National University of Mongolia (NUM). This chart is typical of the organizational structure that exists in each of the other universities. All of them are departmentalized by function and most of them use the same types of departmental categories which can be defined, delegated, and controlled - academic studies, research, planning, teaching faculties, etc. Thus, there is no need, from a management perspective, to examine in detail the structures and administrative systems of all the institutions of higher education. They are very similar.

27. What the NUM organization chart does not show is the flurry of re-organization events that took place between 1990 and 1993. Until 1990, the Mongolian State University was the only university in the country. However, there were eight additional institutions which offered certificate programs roughly equivalent to a university-level degree program: the Polytechnic Institute, Russian Language Institute, State Pedagogical Institute at Ulaanbaatar, Pedagogical Institute at Khovd, Agricultural Institute, Medical Institute, Art Institute, and Military Institute. During 1990-91, the Polytechnic, Agricultural Institute, and Medical Institute all became separate universities. In addition, the Russian Language Institute became the Institute of Foreign Languages and joined with the State Pedagogical Institute to become the Pedagogical University. At the same time, several new colleges have been established, including the Economic College and the College of Commerce and Business.

28. Of special note is the new Institute of Administration and Management Development which was created from the former Management Institute and transformed into a post-graduate management training institution offering a standard one-year diploma course and many short-term courses, some of which are conducted in English as well as Mongolian. Finally, 18 private postsecondary institutions have been authorized and established, with five additional applications pending. Program offerings range from business management, accounting, tourism, and law to fine arts, foreign languages, philosophy, and traditional medicine. A complete listing of all postsecondary institutions of education, both public and private (as of July, 1993), is contained in Table 3-1. Those with pending applications are included in the table.

29. With specific reference to the organization chart of the National University of Mongolia, it should be noted that the administrative structure is a traditional one, based on the Russian model. It is headed by a Rector who is appointed by the Minister of Science and Technology and vested with broad, far-reaching authority. He exerts his authority through several basic functions. Among the most important of these responsibilities are the following:

30. Delegation of authority and accountability. Through policy resolutions, administrative directives, and day-to-day personal

management, the Rector delegates authority for both routine tasks and special assignments. He has three Vice Rectors, five Deans of Faculties, three Directors of Institutes or Schools, and 50-plus departmental chairpersons. Above the departmental level, approximately 30 administrators and 278 support staff comprise the "administration." For the 1992-93 academic year, there are approximately 400 full-time teaching and research staff members, and 2430 enrolled students, all full-time candidates for undergraduate and graduate degrees (The faculty-student ratio works out to a relatively generous one:eight).

31. Goals and objectives. This function involves the development of a mission statement for the University (which most universities have already attempted, in a rudimentary way, to complete) and the clarification of goals and objectives for all faculties, offices, and academic/administrative departments. It also involves establishing short-term and long-range plans, and initiating major policies that coordinate goals with resource allocations and the work of administrators, faculty, and support staff. Although there are consultations that are conducted with the Minister of Science and Education on matters of policy, it is ultimately the Rector who must adopt the institutional goals for his university and ensure their accomplishment.

32. To assist him internally, the Rector has a Learned Board which meets three times a year to review past-year activities of the university, develop plans for the new year, and discuss proposals for new programs and scientific projects. This Board is composed of more than 65 members: three vice rectors, four deans, most but not all incumbent department chairpersons, and a selected number of senior professors who are recognized scholars in their fields. All members are appointed to this Board by the Rector, who himself is appointed as Chairman by the Minister by virtue of his office. Similarly, every faculty and institute has its own Learned Board composed of all department heads and selected senior professors in that unit. Although these Learned Boards might provide an effective mechanism for goal clarification and institutional master planning, it is not clear whether the NUM (or any of the other universities) is ready to deal with academic policy issues that progress in an upward organizational direction for action.

33. On the administrative side, the Rector has the Rector's Council which he convenes every two or three weeks to deal with management problems, budget and financial issues, and other operational matters. Institutional objectives are also discussed. It is composed of Vice Rectors, Deans, and Institute Directors, senior administrative support staff, and is chaired by the Rector. Comparable administrative councils also exist at the Dean's level. In addition, there is a University Council which the Rector may convene if he so chooses. It is a body consisting of some 150 members which was authorized under the former administration. It included members of the Rector's Council plus representatives from a variety of constituencies in and out of the university who were nominated by colleagues and appointed by the Rector. Its purpose was to consider the "social problems" of the university. Since reform, this broad-based Council does not appear to

be a functioning body of NUM - or of any other university.

34. Appointment of administrators. Even if he did not have the direct authority to do so, both logic and good personnel policy suggest that the Rector should select only his top administrators and delegate to them the responsibility of appointing other administrators who will be his subordinates. In the case of Mongolian Rectors, they have the prerogative to make all senior administrative appointments, and do so.

35. Financial control. The severity of Mongolia's current socio-economic crisis makes is imperative for the Rector to spend extensive amounts of time on financial matters. The University of Mongolia has set its sights on achieving parity with many of the world's universities by the beginning of the 21st century. To reach this goal, the Rector is in a position to take the long view, evaluate the financial condition of the entire institution, make the hard decisions to establish priorities and economize, set appropriate tuition rates, seek out needed funds from donor organizations, and above all maintain tight budget controls.

36. Monitoring progress. This function involves, but is not limited to, financial oversight. It also includes the monitoring of academic excellence in the faculties, quality of entering students, competence of graduates, care and maintenance of physical plant, and public image.

37. An important agency, not shown on the organizational chart, which is recognized by many Mongolians as having the potential for perhaps the greatest influence on the development of higher education reform is the Council of Rectors. It was founded three years ago for the purpose of exchanging views, discussing educational problems, and when possible, developing a consensus on important issues facing universities. Its work has been limited because there are no funds available to support staff work. However, at the operational level, it has proved useful in reaching agreements on such matters as the establishment of tuition rates and the rationalization of curricula. It was also helpful in the creation of a joint printing shop for the universities.

38. Also not shown on the chart is the Academy of Sciences which traditionally has been the leading scientific research organization in the country. In past years, as many as 60 separately funded research institutes were officially attached to the Academy. This was in keeping with a strict policy of the separation of research and teaching. Research work was to be conducted by scientists in research institutes; teaching was done by instructors in colleges and universities. Operating under this model, an estimated one percent of the work force was engaged in scientific and technological research in a wide variety of centers, laboratories, and institutes during the mid- and late-eighties. Surprisingly perhaps, since that time there has been a substantial growth in research activities nation-wide. Among those research institutes which are affiliated with the Academy of Sciences are: Center of Scientific and Technological Information, Chemical-Technological Laboratory, Scientific Experimental Center of

the Leather and Shoe Industry, Laboratory of Pasture and Animal Feed, and the Experimental Research Center of the Woolen and Food Industries.

39. Beginning in 1990, however, as a part of educational reform, the separation of research and teaching has begun to dissolve. Some of the centers and institutes of the Academy of Sciences, for example, are being moved into the universities, and the number of institutes is being reduced. In 1991, the Academy's Law Research Institute was absorbed by NUM's Faculty of Law; and its Economics Research Institute became part of NUM's Faculty of Economics. More recently, the Agriculture University successfully negotiated the absorption of nearly all of the agricultural research centers of the Academy into its various departments. Not all separately funded institutes and centers affiliated with the Academy of Science are expected to move into the universities, nor should they. Policies need to be developed which will rationalize the roles of the Academy, each of the centers and institutes, and all the universities, and define the appropriate relationships that should exist among them.

40. While the administrative absorption of the centers and institutes into the universities is producing important structural changes in these institutions of higher education, the merging of teaching and research activities in the universities carries far greater impact and will have much more dramatic consequences. Managing a research-oriented university is more complex than administering a teaching institution. It requires a more diverse, expert administrative staff. It necessitates a different kind of personnel management affecting faculty recruitment, development, evaluation, promotion, retention, and retirement. It changes the curriculum and curriculum development. It influences the demand for and allocation of support services of all kinds. Finally, it has a far reaching impact on the budget.

41. The policy of decentralization which was written into the Educational Reform Law of 1991 not only gave more autonomy to institutions of higher education. As noted above, It also resulted in the transfer of authority and accountability for the management of the K-10 educational system to the four cities and 18 aimags throughout the country, including administrative and financial responsibility for all postsecondary institutions located in each of the aimag territories. Insofar as possible, each aimag is now expected to finance its own local schools from monies raised through taxes levied on corporations, industrial firms, retailers, and other businesses, and from fees paid by the parents of children of kindergartens (parents are to be charged 50 percent of the food costs). In Ulaanbaatar, which houses 25 percent of the entire population, the city is divided into 12 districts, and each district is financed separately. A district governing board allocates monies to individual districts. Because of the lack of funds, budgets are adjusted monthly.

42. The same is true in the countryside. The annual asking budget in this new financial system is approved by each of the local Khurals but the funds are not earmarked. That is, each local aimag must decide for itself how much of the total it raises from taxes for

all services (health, water, police, parks, culture, libraries, and education) will be spent on education. Aimags that project deficits may request supplementary allocations directly from the Ministry of Finance; these requests may or may not be honored depending upon the availability of funds. Thus, the financial management of the local school system has been placed in the hands of local government which has been given the power to tax its businesses and industries, charge fees, and raise additional funds from local enterprises. As a result, the Ministry of Science and Education has been relieved of the complex, onerous, and frustrating task of managing all the financial affairs of the educational system centrally.

43. However, the new financing system has caused the aimags and the cities serious problems - due mainly to the present lack of funds even to pay for essential services, such as providing heat to families for the coming winter. For example, one aimag official reported that education is not among the local government's top priorities. Far more urgent are issues of health, public works, water, and police. According to a kindergarten principal in Ulaanbaatar, several kindergartens in the city will soon be required to close because the money raised from parents to cover food costs is rapidly running out. A few kindergartens have already shut down.

ORGANIZATIONAL EFFECTIVENESS

44. An overall review of the structure of Mongolia's education establishment indicates that, in accordance with new parliamentary laws and ministerial directives, certain major sources of power and authority have been transferred or are being shifted from central ministerially controlled managers to local and institutionally controlled managers. In higher education, even policy formation is currently divided between the MOSE and the individual universities. Moreover, the universities appear to be gaining more and more autonomy. One important reason is that they now negotiate important parts of their budgets directly with the Ministry of Finance. Previously, university budgets were determined entirely by the Minister of Education. Another reason is that universities are now able to generate and tap additional sources of funds on their own, including tuition revenues, fees, research grants from public agencies and private companies, as well as technical assistance from international donors.

45. A third reason is that with the absorption of a variety of centers and institutes, each with its own constituencies and separate sources of funds, the universities will be able to achieve greater financial independence. Whether the centers and institutes will be incorporated into the appropriate faculties and/or departments or will simply be attached to given faculties remains to be seen. Nevertheless, the unification process has begun and some universities, like the Agricultural University, seem to be re-organizing their structures efficiently to make it work. Reports are that both the

Technical and Medical Universities have been similarly successful and may be the next universities to announce more unified research-oriented organizations.

46. Combining research and teaching is not exactly a foreign idea in Mongolian Universities. Many faculty members received their advanced degrees in institutions where their mentors were both teachers and scientists or scholars. At a university like NUM, the annual research budget of the faculties amounts to approximately Tg 1,000,000 and involves 150 lecturers, research specialists, and student assistants. The basic question is whether the universities can, in fact, be transformed from teaching institutions into research universities.

47. Facilitating the ability of universities to charge student tuition or fees will require little or no organizational adjustment. When it is established, a State Loan Foundation will be used to provide loans to students who cannot afford to pay the cost of tuition. However, that Foundation will be administered almost entirely by the MOSE, not by the universities. What the universities will be required to do, in their own interest, is to develop more sophisticated accounting and accountability systems to manage their budgets, conduct regular cost analyses, and control funds from increasingly diverse sources.

48. In the kindergarten, primary, middle, and general secondary school system, management authority and much decision-making power have been effectively transferred to the aimags and city districts. All policy formation, however, has been retained in the MOSE. As noted above, the individual responsibilities in each of the MOSE professional departments have been carefully re-defined to emphasize the Ministry's policy-making role. At the same time, the ability of the aimags to manage and administer their own local school systems varies greatly. Most are still relying heavily on the Ministry. Ulaanbaatar, for example, has established very large finance and tax offices to administer the new tax program and to monitor expenses, by district, for education, health, culture, libraries, parks, water, and police. The total expense budget for the current year is Tg 2.5 billion, of which Tg 700,000,000 are earmarked for education. The revenue budget is the same because the total expenses and the district allocations are based on estimates of the amount of revenues expected from city and corporate taxes.

49. Each of the 12 city districts is financed separately. The budget is adjusted monthly depending upon the amount of taxes raised. Aimags in the remote parts of Mongolia are frank to admit that they feel that they are not sufficiently organized or adequately staffed to administer the new systems. Nevertheless, some of them resent the fact that the Ministry still has the authority, for example, to appoint school principals. In the past, the aimags and the somons have been provided with whatever was needed by the central government, and they are accustomed to allocating and accounting for expenses. However, as for the new tax program, they know the categories to be taxed but have little experience in the actual collection of taxes. Based on

interviews in the countryside, it would appear that most aimags believe that their local education systems, as important as they are, face drastic cuts in the face of more urgent needs and priorities. Thus, for better or worse, management decisions about local schools would seem to rest, uneasily perhaps, in the hands of local officials. They are well aware of the fact that they need more staff assistance and better trained people. Despite their protests, they are in fact quite knowledgeable about local conditions, and many of them appear to be prepared to make the difficult choices. It is the awareness of the consequences of their decisions that make those choices so painful.

50. Recognizing the lack of management training programs and facilities for school administrators that exists in most of the aimags and somons, especially in the rural areas, UNESCO has fielded a small team of experts to make a formal training needs assessment at the local level. Pilot studies are being conducted in three cities and three aimags, and appropriate job analyses/job descriptions are being prepared. It is expected that useful training approaches and programs will emerge from the needs assessment which, if carried out, will expose administrators to modern management methods. This modest study is a welcome addition to the larger assessment of the nation's institutional capacity for management training which is reflected in the present EHR Sector Review.

51. As for the organizational effectiveness of the Ministry of Science and Education, too short a time has passed to make any definitive assessments. Unlike business organizations, government ministries and educational institutions have goals which are complex and difficult to clarify. Moreover, there are few and generally poor measures of the achievement of goals and objectives. Nevertheless, as noted above, the Ministry has been very busy adjusting the details of its organization and redefining the responsibilities and duties of its departments in response to the changes in government policy. Also, some re-organization is still going on. For example, as part of the 1993 re-organization, the functions of the MOSE's former Educational Research Institute were split. Three major activities - teacher training (including the Institute of In-Service Teacher Training with a staff of 60 professional educators, curriculum development (primarily in basic education), and applied research in education - were transferred to the Pedagogical University.

52. Merged together, they formed the basis for the creation of a new Institute of Curriculum Development and Methodology. The remaining responsibilities - for policy studies in educational management, standards, and continuing and non-formal education - were combined to form the Institute for Educational Development. The Director of this new Institute is appointed by the Minister, reports to the Director General of the Department of Science and Technology Policy, but retains a certain amount of autonomy. The General State Inspectorate Board is in a similar quasi-independent position vis-a-vis the Ministry. However, unlike the Institute's Director, the State Inspectorate is lobbying to become an integral part of the operations of the Ministry. They are proposing to establish a centralized Inspectorate to monitor academic standards at all educational levels based on the use of

standardized tests and examinations. As was noted above, the Board already has six national inspectors and 22 local inspectors in the field covering all 18 aimags and four cities.

53. The Ministry of Science and Education is organized primarily as an agency for policy implementation, facilitation, and enforcement. All evidence points to the fact that in general its record in the administration of its responsibilities is very good. Its operations appear to be both economical and effective. Furthermore, it has demonstrated an ability to reorganize itself promptly to accommodate new demands and new requirements. However, as the Ministry undertakes increasing responsibilities as a policy-making agency, its organization and management structure may need to be reviewed. New mechanisms may be required for redefining the role of the MOSE, setting new goals and objectives, introducing strategic and master planning, and establishing new linkages with other governmental agencies and the public.

54. At the same time, in certain areas of higher education, it may be advisable to strengthen the operational activities of the Higher Education Reform Commission and the Foundation for the Promotion of Higher Education and enhance their respective planning and policy-making roles. Provided with adequate staff and budget, and working closely with the MOSE, the Commission might be asked to assume a more influential role in ensuring that the reform of higher education can be sustained. It should perhaps undertake investigations of issues which focus on such principal goals as unity, equity, quality, and efficiency in the system. For example, the principle of unification needs to be thoroughly examined in terms of the desirability and feasibility of consolidating all universities into a single university system, continuing to merge additional institutes into university faculties, sharing laboratory, equipment, library, and other facilities, and seeking to reduce duplications of programs, courses, faculty members, and administrators. Developing a policy consensus to achieve this goal is a challenge. The Commission was established and organized to perform such tasks and to develop appropriate policy statements. It needs its own budget and proper staff support to become an effective agency of the government.

PERSONNEL MANAGEMENT

55. Good personnel management involves, first of all, the recruitment and selection of qualified people for available positions. This process becomes central to the performance of any agency, department, office, school, or university. It begins with planning and forecasting. For Mongolia in the past, this has meant centralized planning and management. Now, however, in a more open labor market, planning has become (or, more accurately, will gradually become) a matter of separate ministerial, institutional, and local analysis. Like other aspects of decentralization, personnel management has been transferred to the universities and to the aimags. All personnel forecasting, including the planning which is conducted by the Ministry,

should take into consideration such factors as mission, goals, new program plans, reorganization requirements, retrenchment imperatives, economic assumptions, availability of qualified candidates, changes in the talent pool, competing market demands, and promotion/retirement schedules. In times of no growth, financial crisis, and fiscal reductions such as the nation is going through at the present time, good planning is even more important simply because priorities must be set.

56. The next step in the process is to draw up the necessary job specifications and position descriptions. The Ministry of Finance (MOF) has taken care of all of these details in the past and there is little likelihood that such MOF authority will be relinquished. However, the recruitment of candidates has been delegated. In the MOSE, Directors seek out likely candidates for openings in their departments and introduce nominees to the Director of the Department of Administration. In the universities it is the rectors who do the recruiting; and in the schools, it is the principals. Increasingly, job openings are being advertised in newspapers and on radio and television.

57. Compensation is not much of a competitive factor in recruitment because, in a former socialist country like Mongolia, compensation means salary - and salary is controlled by central government. Thus, except for private institutions, the entire education system is governed by a single governmental civil service system. Each year the Cabinet sends out a set of salary scales to all ministries which is accompanied by an explanatory directive describing the rules and regulations governing their use in hiring and promoting personnel. Table 3-2 on the following page shows the approved salary scales for 1992-93.

58. To illustrate the present difficulties that government employers have in recruiting personnel, the average monthly salary of a professional or administrative appointee in the MOSE is Tg 5400 - with a minimum of Tg 5100 and a maximum of Tg 5800. The average salary of a director is Tg 6000, which is capped at Tg 6900. In the 12 districts of the City of Ulaanbaatar, primary and secondary school teachers' salaries vary between a minimum of Tg 4000 and a maximum of Tg 5500; kindergarten teachers' salaries, between Tg 3500 and Tg 5100. In Kindergarten No. 89, a model institution in the city, the average salary of teachers is Tg 4100, and for others (non-teachers), Tg 2700. For faculty members in the teacher training colleges, salaries range from Tg 5400 to Tg 6000. Interestingly, the directors of these colleges have the authority to increase a faculty member's salary by as much as 30 percent based on the quality of teaching and related activities. By the same token, they are permitted to lower the salary up to 30 percent. Also, the rules allow employees to work at another job if they can find one and if it is part-time. At the college level, faculty salaries range from Tg 7000 to Tg 9000. In stark contrast with these low salaries, the first entry into the competitive market for faculty (and students) may be the Otgontenger Institute of Foreign Languages, a private institution offering courses in English, Russian, Chinese, and Spanish. This Institute intends to pay its instructors

between Tg 15,000 and Tg 20,000 per month. It also plans to charge tuition fees of Tg 40,000 per annum.

59. Inquiries about "training" invariably evoke the same response. Nearly all administrative jobs in the MOSE and in the schools and universities require a certain amount of on-the-job training which is provided to all new hires. In addition, if short courses (e.g. two-three week seminars) can be arranged, new employees will be released to attend them. Generally speaking, there is a felt-need and a wide-spread demand for short- and long-term courses in management at all levels. However, Mongolia's institutional capacity for management training is another matter. This important topic is discussed in some detail below.

60. As for the utilization of personnel in Mongolia's educational establishment, statistical summaries were compiled and are presented in two tables. Table 3-3 gives the number of primary and secondary school employees for the 1992-93 school year arranged by Administrators-Teachers and Other Employees, and further by professional-occupational position. Table 3-4 provides the number of public postsecondary school employees by gender for 1992-93. Each set of data is arranged by Administrators-Faculty and Other Employees and by professional-occupational position. In general, the institutions do not appear to be top-heavy with administrators. On the other hand, in most postsecondary institutions, there is a troublesome gender gap that is quite pronounced. The MOSE is aware of this problem and has expressed concern. What these tables do not show is the drop in employment that seems to be accompanying a rather severe reduction in student enrollments throughout the country, especially in the lower grades and in the kindergartens. Many schools are reportedly being closed. Many more are not expected to open in the fall. At the same time, there are reports that teachers are leaving the profession to take better paying positions in the private sector and elsewhere because salaries in education are so low.

INFORMATION AVAILABILITY AND UTILIZATION

61. To cope with the financial crisis, expedite educational reform, and plan for the future, the MOSE must have an accurate picture of present conditions and past performance. Fortunately, a basic centralized information system has been in existence for many years which enables the Ministry to assess its financial condition and to measure the degree to which it has been meeting goals which were established by the former Ministry of Education and the State Board of Science and Education. Two sets of data are collected - statistical and financial - and both sets are used for monitoring, management, and planning purposes in several of the MOSE offices.

62. The statistical information on the K-10 system is collected systematically three times a year - September, January, and June/July - using standard forms which are distributed to officials responsible for

(1) kindergartens, (2) primary grades (first-sixth), (3) basic secondary grades (seventh-eighth), and (4) upper secondary grades(ninth-tenth). Comparable data are available on these four groups going back to 1921. For the 1992-93 school year, September and January reports have been compiled on 806 kindergartens and 679 primary and secondary schools. Statistical information on the postsecondary system is also collected systematically, using standard questionnaire forms, from all of the institutions involved, both public and private. The same schedule of reporting is followed - September, January, and June/July. For the 1992-93 year, reports were generated from six universities (the Military University being excluded) and a total of 92 postsecondary institutions. In addition, the universities produce annual reports which are generated from a standard questionnaire and forwarded to the MOSE separately.

63. The data which are gathered for each period are not trivial. For kindergartens, for example, the September questionnaire asks for such important information as: student enrollments, number of classes; age and gender of students; expenditure on food paid by parents; capacity of buildings; condition of facilities; numbers of staff and teachers; educational level of teachers/head teacher; and job activities of administrators. Similar detailed information is requested on primary and secondary schools. For the universities, the September questionnaire asks for such information as: student enrollments by course, subject, aimag, age, gender, and expenditure sponsor; faculty totals by level of teaching, years of experience, age, gender, educational level, and specialization (science, art, technical, medicine, agriculture, and social science); and faculty "benefits" - housing, released time for research, language capacity, part-time/full-time. The information requested about administrators and research specialists is comparable to that required concerning faculty members.

64. The January reports provide a detailed picture of the movement of students during the year. In June/July the reports summarize year-end student movements through drop-outs, transfers, graduations, etc. Again, it is useful to examine the kind of data which are collected from all the schools. The January report asks for such information as: enrollments by gender, number of newly enrolled students (promotions by gender, repeaters, transfers "in"), and a break-down of drop-outs and transfers "out," including transfers to religious schools and drop-outs due to pregnancy, illness, full-time employment, criminal activity, and death. Comparable data are provided by all postsecondary institutions, including the universities.

65. In this information system the basic data for each of the reporting periods are collected in the schools and forwarded to the aimags where local summary reports are prepared. The summary reports are sent to the MOSE where the data are entered into a computer. The Ministry then produces a formal national report, copies of which are forwarded to (1)the Administrative Office of the President, (2) Ministry of Finance, (3) Ministry of Labor and Population Policy, and (4) National Development Board. It is in the National Development Board that discussions are held at the highest level concerning major educational issues and/or plans for the coming year that may deserve

the attention of the Cabinet and possible consideration by the Parliament. A copy of the MOSE national report is also submitted to the National Statistical Board which uses the data in its preparation of an annual report which is published in Russian, English, and French.

66. In addition to the large amounts of statistical data gathered routinely and utilized for planning purposes, special studies are conducted quite frequently on special topics or on problems in education facing the nation. Increasing numbers of drop-outs, closing schools, teacher losses, nomadic education difficulties, rural-urban inequities, and deteriorating facilities are all matters of great concern to the Ministries of Science and Education, Finance, and Labor and Population Policy, and many studies are undertaken. The Institute for Educational Development is responsible for a number of them.

67. The second major set of data which is routinely collected is financial information Exclusive of the regular accounting reports required of all educational institutions, certain statistical information is gathered systematically on separate standard forms by the MOSE's Department of Economics and Social Welfare at the end of each year from all aimags and cities, and all the public and private universities. Included are such data as: number of buildings, salaries of faculty and staff, physical assets, annual financial expenses, and profits from enterprises. For planning purposes, the Department also collects its own statistics on student admissions, promotion, and graduation rates and makes projections - current, mid-term (1991-1996), and long-range (1991-2000). It is also responsible for preparing numerous special evaluation reports which are normally transmitted from the MOSE to the MOF.

68. In the past, it has been difficult for the MOSE to merge its statistical and financial information for purposes of analysis and planning. Beginning in 1993, however, with the assistance of computers, a combined data base was created which will enable the Ministry to describe and assess the financial base for the nation's education system at all levels. Utilizing combined information concerning students, facilities, and costs, experimental outputs are now being generated on such measures of management efficiency as cost per square foot per student. At present, such reports are special reports prepared for internal use only. In a year or two, the Ministry expects to produce a standard annual report.

69. For purposes of institutional assessment, planning, and decision-making in higher education, the informational bases of most universities and colleges are surprisingly comprehensive. Rectors seem to be regularly and fully informed about the financial condition and academic performance of their various departments. With some exceptions, the information is also reported to be quite accurate and reliable.

SYSTEMS OF ADMINISTRATIVE AND FINANCIAL CONTROL

70. With the decentralization of the public school system, the increase of autonomy in the universities, and the establishment of private institutions, the long-standing, well-established control systems which were administered centrally by the former Ministry of Education have become obsolete. New relationships are being defined in an attempt to comply with new government policies. However, old ideas about accountability, both academic and financial, are difficult to replace. Also, in the "Budget Law" of 1992, the government made it clear that the new Ministry of Science and Education was responsible for supervising the entire national educational education budget which was set by the Minister of Finance and that the MOSE would set the guidelines for the aimags concerning their support of local public education systems. For 1992-93 that guide line was "20 percent of the local budget for education." Apparently, it reflected budget allocations at the national level. The total education budget for 1993 was originally set at Tg 6.8 billion, which was approximately 20 percent of the total national budget. (To illustrate the devastating effects of inflation, the education budget has risen to a current level of Tg 8.2 billion). To the extent that the aimags are unable to finance their local school systems from taxes and other revenues because other services have greater priority or urgency, they may request additional funds from the Ministry of Finance. Universities receive their budgets directly from the Ministry of Finance.

71. Accounting for expenses is rigorous and begins at the lowest level of government: quarterly reports are sent from the somons to the aimags to the Minister of Finance where summaries are prepared and forwarded to the Cabinet/Great Khural and the MOSE. Based on these reports, comparisons, evaluations, and budget changes are made. In addition, there emerges the budget request for the next year, the so-called Planning Budget. MOSE also receives all the quarterly expense reports from the universities. This quarterly reporting is extremely important because it is on these occasions that the schools, colleges, and universities are held to a strict accounting by the MOSE, and adjustments in program, personnel, supplies, maintenance, etc. are made. By this process, too, certain longer range objectives can be achieved. For example, to reduce the number of administrators in the system, the ratio of teaching staff to administrators in institutes has been lowered from 1:1.5 to 1:.5. Gradually, this reduction is being realized.

72. By providing key financial information promptly and efficiently, the financial control system which is now in place also enables the MOSE and the MOF to make the hard decisions on educational priorities. In the 1992-93 educational investment (capital) account, Tg 63 million had been budgeted for the construction of new buildings, facilities, and repairs, and Tg 30 million had been budgeted for the purchase of equipment and school maintenance. The nation's financial crisis made it necessary to impose severe cuts. Funds are needed urgently to supply power for heating during the coming winter. The result was that in May the investment budget was slashed from Tg 93 million to Tg 31 million. The equipment and maintenance item was eliminated from the budget entirely.

73. From all available evidence, the government's accounting system has enabled the Ministries of Finance and of Science and Education to exert satisfactory internal financial controls over educational expenditures. In addition, it has enabled them to take prompt action to adjust budgets under emergency conditions. However, it is a closed system, one that works well to affect changes in a centrally-planned environment. For example, there does not seem to be a private auditing firm in Mongolia. What is needed is a new system which will be consonant with accounting/auditing systems that make the ministries and the universities, colleges, and schools publicly accountable for expenditures. For the tuition-charging colleges and universities, at least, a fund accounting system may an appropriate alternative. At the same time, arrangements should be made to engage the services of an external auditor to assist in the process of installing the new system.

74. Fund accounting is a system in which accounts are organized, managed, and reported by balanced fund groups (current funds, loan funds, endowment funds, annuity funds, plant funds, and agency funds). It generates three basic financial statements: (1) a balance sheet, (2) a statement of changes in fund balances, and (3) a statement of current funds revenues, expenditures, and other changes. The system also includes two major procedures: (1) accrual accounting, in which revenues are reported only when earned and expenses are reported only when goods or services are actually received; (2) depreciation accounting, in which depreciation expenses are not reported in the current funds statement. Fund accounting is an effective system which has been adopted by many educational organizations around the world.

INSTITUTIONAL CAPACITY FOR MANAGEMENT TRAINING

75. The rapidity of change in Mongolia's economy and government places a premium on the need for administrators and managers who have the skills to operate effectively in new, market-oriented organizations. Many MOSE officers, together with college and university administrators and faculty members, as well as aimag officials and school principals, are all engaged in the management of a process which is ushering in a new socio-economic system. At all levels in the education system, administrators find themselves without the knowledge and management skills to deal with the new responsibilities they are being called upon to perform, such as policy formation and public accountability. They also need a better understanding of the obligations which accompany the freedom that individuals and enterprises enjoy in a market-oriented society. For most Mongolian educators, these changes mean quite simply having to perform their jobs with obsolete management skills. Such shortcomings need to be remedied though (1) a major inservice retraining effort, and (2) a program of intensive training (in Mongolia and abroad) for key administrators in the MOSE and the universities. In addition, institutional programs for the preparation of new career-oriented

administrators need to be established in the universities and elsewhere.

76. The mandate given by the government to the Institute of Administration and Management Development provides this special institution with the authorization needed to encourage its growth and expansion as the leading management development center in the country. It is outside the domain of the MOSE and reports directly to the Cabinet. Founded in 1979 by the previous government, the institute has been successful since 1989 in re-orienting its focus to the new economic and social policies. Now its emphasis is on free enterprise business administration and public administration. A simplified organization chart of the Institute is given in Figure 3-4. The administration consists of the Director and two Deputy Directors, one responsible for administrative and financial matters, the other responsible for training and consulting services. The training component is divided into four teaching departments: economics (including marketing, international finance, public finance, and accounting); Management (including public administration, production management, organization behavior, and business law; Informatics (including operational research, computer science, and MIS systems); and English Language. The Institute also has four regional centers - at Erdenet, Dornod, Bayan-Olgii, and Oborkhangai - each of which reports directly to the Director. At present, there are 32 members of the teaching faculty. To date, there is no tuition charge.

77. Academically, the Institute offers a one-year, post-university, undergraduate program in management leading to a diploma. More than 100 students are graduated each year. At the end of 1992-93 there were 111 graduates; For the 1993-94 year, there are 135 new students who are enrolled. To be admitted, new students must be under 35 years of age, possess a university degree, and have at least three years of experience in management. The Institute's second program consists of a series of short inservice training courses ranging from less than one month to more than three months in duration. Nominal tuition fees are charged. More than 500 students pass through these courses each year. The very short courses are taught in Mongolian; the longer courses are more likely to be taught in English.

78. Some educational administrators have already attended a number of these short courses. Also, a special one-month seminar was recently designed and conducted for a group of educational administrators who were charged a nominal T2700 each. The Institute has a well-stocked library, with collections predominantly in English, a micro-computer laboratory, and a language laboratory, used mainly for intensive English language instruction. A third academic program is also currently under development. Within a year the Institute hopes to introduce a two-year MBA-type program for the training of business managers and public administrators. It is soliciting outside financial assistance to underwrite its development and to support the additional teaching staff needed. Clearly, the Institute is determined to increase its capacity to provide more and better management training.

79. Management training has not been confined to the IAMD. Under

the former command economy, the Mongolian State University was the traditional supplier of central planners for all of the ministries. After the switch to a market economy, the new government designated MSU, together with the Technical University and the Agricultural University, as the key institutions for training economists for the new economy. For this reason apparently, the Economics Institute was established as a part of MSU and was merged with the Faculty of Economics. This Institute consists of seven departments: economics, statistics, computers and data processing, management, finance and credit, marketing and accounting, and research. It has more than 60 professors, nearly half of whom hold PhD degrees. It offers a four-year undergraduate degree program in economics and plans to introduce a two-year MA degree program and a PhD degree program in the near future. Over 700 students are enrolled in the Institute. Upon graduation, approximately half will work in the ministries or elsewhere in the government, the rest in industry. Because nearly all faculty members received their degrees from universities in the former USSR and Eastern European countries, the Institute has begun to retrain its faculty, revise its curriculum, and develop new teaching materials.

80. Also adapting to the changing environment is the Economics College. It was founded in February, 1991 as a semi-autonomous institution under the MOSE. It absorbed the resources of the Economics Technical School which had operated under the Ministry of Finance until 1990. The College was established to provide basic education for junior and middle level management personnel in finance and accounting. Currently, it offers a four-year bachelors degree program with specializations in banking, accounting, and business studies (which is still under development). There are approximately 550 students, 300 of whom are studying under the old curriculum and 250 of them studying under the new curriculum which was introduced in 1991. The College is also developing a strong inservice training program and plans to provide consultancy services on a fee basis. The College has found a distinct and important niche for itself as the provider of management training in finance and accounting.

81. The College of Commerce and Business was also established in 1991 under the joint supervision of the MOSE and the Ministry of Trade. Its progenitor was a training center which was founded in 1924 and which remained in the Ministry of Trade until 1990. After its reorganization in 1991, the College focused on marketing and international trade. It offers a four-year bachelor's degree program and provides short preservice and inservice training courses for managerial staff in business and industry. It also offers programs of research and business practice in a market economy and consultancies and research services to business firms. It has a faculty of approximately 70 members, nearly all of whom hold bachelor's degrees only. The student body numbers over 1200, of which about 115 are enrolled in the degree program. The College's facilities include three classroom buildings, two student dormitories, and ten workshops. It works closely with the Economic College.

82. The training of school administrators in the Pedagogical University has apparently been judged not to be a very important part

of the mission of this institution of higher education. No systematic program exists for either the preservice or inservice training of school principals, vice principals, head teachers, et al. at kindergarten, primary, middle,or general secondary levels. The University has dedicated itself almost wholly to the training of teachers for the education system at all levels and in all specializations. However, under the former government administration, the Ministry of Education provided compulsory three-month training programs for all principals. Under the present MOSE, inservice seminars were held regularly one day per month for administrators. In recent weeks, all of these inservice training activities have been transferred from the MOSE to the Pedagogical University. To meet current needs during the transfer period, the Institute for Educational Development plans to offer two short courses - a three-month course and a 12-month course - designed for school principals and local aimag officials. These courses are scheduled to begin in the fall of 1993.

83. In the various departments of the MOSE and in the offices of the universities, colleges, and schools visited by members of the EHR Sector Review team, the administrative and management operations appear to be business-like and professional. The personnel in responsible management positions give the impression of being competent and dedicated to the educational reforms that are changing their organizations and management systems. Being professionals, and experienced, most of them realize that if they are to re-orient their focus and adjust to the new government policies, to new demands brought on by the switch to a new market-oriented society, and to a decentralized and increasingly democratic system of education, they must retrain themselves and upgrade their management skills and expertise. It is clear that Mongolia has the basic institutional capacity to undertake that management training. However, it needs outside assistance and additional resources to strengthen that capacity and to set it in the right direction.

OPTIONS FOR POLICY, PRACTICE, AND FURTHER STUDY

84. In this management portion of the EHR Sector Review, the task has been to assess the nature and magnitude of the educational reforms confronting Mongolia in terms of their impact on the management of the on-going educational system at all levels. Major factors shaping, controlling, and influencing the existing management structures and systems have been examined, including the effects on such important structural components as organization, personnel, information systems, financial control, and capacity for management training. In this process, a number of options should perhaps be considered by the Ministry of Education and Science and others in the Government to strengthen the nation's capacities to manage, consolidate, and sustain its reforms.

85. First, consideration should be given to conducting a comprehensive review of the organization of the Ministry of Science and

Education to ascertain whether or not its overall structure provides the most efficient, effective, and flexible utilization of talent, expertise, and resources to achieve the new policies which the Government has set (and continues to set) for the EHR system of the country. The process should start with an examination and definition of the Ministry's changing mission in the new government. It should continue with a review and re-definition of the goals and objectives of the Ministry in terms of the working relationships which are evolving with the newly empowered aimags and the local schools, with the "autonomous" universities and the other public postsecondary institutions, with the private higher education institutions, and with the other ministries and agencies of government. Its new broad policy-making role needs to be thoroughly examined and rationalized, as does its new role in setting national standards, in overseeing an emerging system of accreditation, encouraging and supporting public accountability in the schools, colleges, and universities, and in merging science and technology. The Ministry also needs to consider the usefulness of creating a semi-independent policy analysis unit, developing a wide-ranging MIS network, and installing a fund accounting system to improve its management efficiency and effectiveness. The financial viability of its activities and programs must also assessed. Eventually, this intensive planning process should lead to action plans for re-organizing the ministry in ways that will ensure the achievement of its new goals and objectives.

86. Second, a number of tentative proposals for reorganizing the Ministry have been advanced for purposes of discussion. One suggestion would create a National Education Council (replacing the present Minister's Council), appointed by and reporting to the Minister of Science and Education, which would be composed of members who are widely representative of the public, other ministries of government, and important segments of the educational system. Council members might include representatives from the Ministries of Finance, Labor and Population Policy, Health, Culture, and the National Planning Board; the industrial sector, including mining; the business and commerce sector, including banking; the agriculture sector, including cattle breeders; university professors and school teachers; youth organizations; and others. Meetings of the full Council might be held twice each year. The executive committee (policy and planning) could meet as often as once a month.

87. A second suggestion for MOSE reorganization would create a new Department of Planning, Policy Analysis, and Liaison, for the purpose of conducting policy studies, formulating educational policy and planning statements, and developing planning proposals emerging from the MOSE departments and the National Education Council. Close liaison would be maintained with such agencies as the Higher Education Reform Commission, the Standing Committee on Education, Science, and Culture Policy of the Parliament, the National Planning Board, and other ministries, as well as the universities and the various aimags in order to gain consensus and support.

88. A third reorganization suggestion calls for the redefinition of the operational responsibilities of the Inspectorate, emphasizing

its student assessment and school service functions in the achievement of academic standards rather than its present policing and enforcement mandates. In view of the additional licensing and accreditation responsibilities with which the present Inspectorate Board is charged, the new agency might be entitled "Department of Accreditation and Student Assessment." Still other suggestions for the reorganization of the MOSE would recognize the need for a general contraction and seek to consolidate existing administrative and professional departments whose operational and administrative responsibilities have been transferred to the aimags and cities and to the various universities. At the same time, a whole new role is being proposed for the Ministry in Mongolia's rapidly evolving educational system. Its overall revised organization might best be built around four major functions: (1) educational policy formation and analysis; (2) educational planning and planning services; (3) educational development, including programmatic improvement, program approval, and staff development; and (4) student assessment, institutional accreditation, public accountability, and the maintenance of academic standards.

89. Third, the organizational problems of higher education appear to be severe. The disassembly of the Mongolian State University during the transition from a socialist state to a free, market-oriented society has fragmented higher education in ways that are proving detrimental to all postsecondary institutions, especially the universities. Mongolia is too small a country, with too fragile an economic base, to support all of the separate universities, centers, institutes, and colleges that emerged from the break-up of MSU. Resources are too scarce to permit institutions to squander them on duplicating faculties, administrations, laboratories, classrooms, teaching materials, and other facilities and supplies. Consolidation is badly needed and, in a number of areas, has already begun. Conducted on a broad front, it would save millions of tugrugs. Unification is even more important if, as the Government has directed, universities are to effect the merger of teaching and research in their various faculties and, at the same time, to merge science and technology. Therefore, serious consideration should be given to the feasibility of unifying and rationalizing all institutions of higher education, with particular reference to the universities and the Academy of Science. The impetus for such a move is not likely to come from the Council of Rectors. Perhaps the Higher Education Reform Commission would be willing to take the initiative.

90. Fourth, there is no more economically and educationally significant challenge facing Mongolian educators than having to cope with shrinking and exhausted budgets, rising inflationary costs, deteriorating buildings and equipment, and severe shortages of textbooks, teaching materials, and supplies. Furthermore, enrollments are dropping, teachers are leaving the profession, and some kindergartens are being forced to close. Some officials are predicting the demise of the entire public kindergarten system in the very near future. At the very least, the facilities and personnel planning capabilities of the Ministry need to be strengthened in order to recommend economies, priorities, cost savings, consolidations, and control measures to the aimags and local schools. Another possibility

would be to undertake a national inventory of facilities locations, sizes, and conditions in order to establish a data base for future facilities decision making. The most efficient use of all resources would be the goal. However, despite strict budget controls and drastic cost-cutting measures, the infrastructure of the public school system is eroding so rapidly that unless direct budgetary support is forthcoming from outside donors in the near future, much of the existing system will collapse. Furthermore, recovering what will have been lost will be costly and require many years to accomplish. What is needed to sustain the nation's educational reforms is an influx of emergency funds to stabilize the infrastructure for the duration of the transition and until such time as the economy has improved.

91. Fifth, the lack of the management skills which are required to implement and sustain the government's new reform policies in education is widely recognized. It is voiced openly in the departments of the MOSE and it is expressed repeatedly in the schools and aimags. Among university rectors, it is a matter of great concern. There is general agreement that if institutional capacities for management training were strengthened, they will be in high demand because the need is so great and pervasive in both public and private sectors. Moreover, there is an eagerness to learn about strategic planning, policy-making, and the delegation of authority; also, how to build team work, turn policy into practice, and exercise leadership. Three major areas are in need of development and support: (1) preservice, career-oriented management education (mainly in the universities, centers, and institutes); (2) inservice management training (conducted by Mongolian mentors, visiting professors, and experienced professionals); and (3) management study abroad (in such countries as the U.S., Canada, Europe, U.K., and Australia). The specific areas of support can take many forms, including grants and technical assistance for: curriculum revisions (with the introduction of such concepts as marketing, competition, profit motive, and customer/student demand); innovative teaching methods (including the use of the "case method," for example); fellowships for the teachers of management teachers; etc. The sustainability of Mongolia's educational reforms and the quality of its educational system will depend, in large part, upon the effectiveness of its management systems and the calibre of its individual administrators and managers. Based on these criteria, with prompt and adequate assistance, there is reason to be optimistic about the future of Mongolian education.

92. Sixth, the MOSE would be well advised not only to adopt every possible measure to economize, cut costs, and keep tight control of the education budget during the present financial crisis but also to initiate a planning process for the development of a massive fund-raising program to meet the most urgent financial needs of Mongolia's educational system. The Ministry should take the lead in coordinating all requests for outside funding of education by international organizations, foreign governments, foundations, and other sources. Among the critical needs in the area of educational management which would benefit from more specifically targeted financial assistance are the following:

- Fielding a task force of consultant/advisors to assist, and train key administrators and managers in the universities, colleges, schools, and the Ministry, as well as local officials serving on aimag "school boards." The purpose would be to provide intense management development training at local community levels and in institutions offering programs in business/public administration, education, agriculture, agriculture, and health.

- Technical and budgetary support to underwrite the costs of facilitating the unification and consolidation of higher education in Mongolia.

- Financial, disciplinary, and management assistance to the universities for the implementation of the new policies calling for faculty members to combine their research and teaching activities.

- Support for the development of the Mongolia's institutional capacity for educational management training, with specific reference to strengthening inservice and preservice program offerings at the Institute of Administration and Management Development (all specializations), Pedagogical University (school administration), Economics College (accounting and finance), and the Institute for Educational Development (inservice retraining).

- Support for the establishment of an MIS system for the MOSE which would be designed for expansion, as additional funds were made available, to meet the informational and data processing needs of all the institutions that comprise the system, including the local aimag school boards. A separate MIS system should also be designed for the universities to facilitate consolidation and provide additional services to faculty and students.

- Assistance in the establishment of institutional linkages with educational managers and administrators in ministries, universities, colleges, and local school boards in North America, Europe, the United Kingdom, Australia, and other democratic, free-market countries. The purpose, in part, would be to alleviate the intellectual isolation that Mongolia has endured for many years.

93. The future of Mongolian education will depend, in large measure, on how well the entire educational system in all of its component parts is managed. Indeed, maintaining the academic and financial integrity of the system requires a careful examination of the existing goals and current operations of the MOSE and at least a sampling of the various institutions throughout the country. It also requires an understanding of the principles on which the reform of Mongolian education is based and the laws and directives which have guided the introduction and establishment of new systems of administration and management - systems of personnel management,

information utilization, and financial control.

94. All of these matters have been discussed above in the context of organizational patterns which, it should be noted, are changing steadily but slowly. Concerns about the setting of priorities and the deployment of limited and declining resources have also been examined. It would be a mistake to let words like "financial crisis" and "retrenchment" completely dominate the discussions of the future of education. There are many options available to the decision-makers in the MOSE, the Cabinet, and the Parliament. A number of them are recommended in this chapter. The present EHR Sector Review represents a first step in the development of Mongolia's education system. The next step calls upon Mongolian educators, other government officials, and the public to undertake the establishment of priorities and the drafting of a realistic and judicious master plan. Thus, after many decades, the future of Mongolian education now lies in Mongolian hands.

CHAPTER 4

PRE-SCHOOL, PRIMARY, MIDDLE, AND GENERAL SECONDARY EDUCATION

1. Mongolian pre-school, primary, middle, and general secondary education is in a state of crisis. For a variety of reasons, enrollment is dropping dramatically and drop-out rates are rising at all levels in all regions of the country. Schools are deteriorating from lack of funds for maintenance, teachers are leaving the profession for better-paying posts, curriculum, materials and textbook problems in the system remain to be resolved, and teachers and administrators must be retrained to be effective in the country's new social and economic environment.

2. At the same time, Mongolia is a highly literate country with an educational heritage surpassed by few Asian countries. The legislative, government and educational establishments are seeking ways of maintaining and improving the educational system and are embarking on numerous innovative programs. If the education system can survive the crises brought on by the loss of Soviet and East European subsidies and trade relationships, the rigidities remaining from the command economy, and the stresses of the current transition to a market economy, and if it can adapt expeditiously to the current and future needs of the country, it will continue to provide the country with the human resources it needs to build a positive future.

3. This chapter first examines the historical context of education in Mongolia, and looks at the present both in terms of how it compares with the past and how it relates to possible futures. Goals and priorities are examined, the system and structures described, enrollment trends analyzed, and the status of teachers, curriculum, administration, facilities and equipment, costs and financing discussed. The Mongolian public EHR structure includes a kindergarten for children from age 3-8 followed by a 6-2-2 structure of primary, middle, and general secondary education. Primary and middle education together are referred to as basic education and the grades 1-8 are "compulsory" but may be satisfied through a combination of formal and nonformal means. Vocational-technical education occurs primarily following grades 8, 9, and 10 but exists at earlier and later levels. Higher education includes the eight university-level institutions, two colleges authorized to award baccalaureate degrees, and a set of postsecondary colleges, most of which are being brought under the management of individual universities.

4. This chapter ends with an evaluation of quality and effectiveness, and a discussion of needs, adequacy of existing policies and plans, and constraints. Equity, internal efficiency and external efficiency issues are examined, leading to some suggestions as to where priority attention might be given in order to preserve existing quality and in order to keep enrollment and educational opportunity from deteriorating to the point where the next generation of Mongolians will be substantially less well-educated than their parents.

STATUS

Historical Setting

5. Before the 1920's, formal education for children was offered only within the Tibetan (Lamaist) Buddhist monasteries. The current secular system of education in Mongolia began with the organization of the first primary school with 40 pupils in 1921 and the first kindergarten in 1930. The Mongolian State University (now National University of Mongolia) was founded in the early forties and since then a comprehensive system of education from kindergarten through graduate study has evolved, including vocational, professional, adult evening and correspondence education programs and boarding schools for nomadic children. This has made Mongolia an almost completely literate society (estimates suggest over 96 percent literacy, defined as percent of persons 10 or more years of age who have completed at least three years of schooling); well over three-quarters of the young people had eight years of education as of the early 90's. Part of this achievement was made possible by having boarding facilities attached to about two-thirds of the schools in the country. These boarding facilities are costly and many are now being closed because of economic reasons.

6. Until the early fifties, the Mongolian People's Republic (MPR) continued basically as a nomadic society with only limited urbanization and industrial development. Following the Second World War, however, the MPR increasingly adopted a policy of modernization involving investments in energy and industry, following a Soviet centrally-planned economy approach. Educational opportunities at all levels expanded, including exchanges at the technical and higher education levels with the Soviet Union and Eastern Europe. In 1985, for instance, 4,482 Mongolians were enrolled in vocational/technical schools at the secondary level in other socialist countries and 1,366 were enrolled in postsecondary technical professional schools. Some 6,110 were enrolled in higher education institutions in other socialist countries in 1985-1986 (see Table 4-1). Most of these graduates returned to Mongolia and many became faculty and administrators of higher education institutions, researchers in the Academy of Sciences and officials in the Ministry of Education. It was natural that the education system would develop along the lines of that in the Soviet Union.

7. In 1986, Mongolia became one of the first socialist countries to launch a program of political openness and restructuring. This program had five goals: a) acceleration of development; b) application of science and technology to production; c) reform of management and planning; d) greater independence of enterprises; and e) balance of individual, collective and societal interests.

8. Popular demonstrations in March, 1990, led to the country's first multi-party elections in July, 1990, and a new coalition 1-30government was formed. A new education law was formulated in 1991, and a new constitution in 1992, renaming the country simply Mongolia. Two houses of parliament (one had 480 members) were consolidated into one with 76 seats. Further parliamentary elections were held in June, 1992, when the Mongolian People's Revolutionary Party won all but 5 of the 76 parliamentary seats. The new

parliament established a new parliamentary standing committee on Science, Education and Culture to give special attention to education issues (an earlier committee on women, youth and children had handled education under the previous administration). A Higher Education Reform Commission was established by parliament and, to provide financial support for the Commission, a Foundation for the Promotion of Higher Education was established.

9. Since the 1950's, Mongolia has used the Cyrillic script to transcribe the language both in government and in the educational system. In 1991, it was decided to re-introduce the traditional Mongolian script in government and the school system and the Ministry of Science and Education has indicated that school materials will be in that script as soon as possible. This has met with some resistance among teachers and parents as many are do not know the traditional script themselves. A 1992 UNESCO study of nomadic families in the Gobi region found similar resistance to the new script. Many cattle breeders indicated that they saw no use for the traditional language in their work. English is now emphasized as the second language in schools and universities (along with some emphasis on other European and Asian languages), in lieu of the traditional Russian, and many Russian teachers are being retrained as English teachers. It thus appears that most students who progress to middle and secondary school will have to learn three scripts: Latin, Cyrillic and traditional Mongolian.

10. Soviet and Eastern European technical cooperation and assistance was lost in the early 1990's because of the financial crises and the changing political and social events in those countries. The number of advanced students sent abroad for training has declined dramatically. In the school year 1992-93, for instance, only 41 Mongolians were sent abroad for university study; no secondary level vocational students were sent and only six new students at the postsecondary vocational/professional level were sent. Most of the new students sent abroad are going to countries not closely associated with Mongolia prior to the 1990's, and they will return with new ideas that will affect the educational system.

11. The government, the legislature, the aimags (provinces), and the somons (towns and villages) are all concerned with improving the quality of education and adapting education to the needs of the new economic and social environment. The predominant issue, however, is how to finance education in the future. Current policy is to decentralize responsibility for education to the aimags and the somons and to encourage these local and regional authorities to finance as much of education as possible. Most aimags and somons can not come near to supporting the schools that now exist and a large number of ten-year schools are being reduced to eight-year schools. Many are eliminating the boarding facilities for nomadic children. Drop-out rates are increasing each year and the education system is in danger of collapse without some kind of transition financing. Despite the heroic efforts of some local leaders and school officials, the resources are simply not being provided to keep the system at a reasonable level of efficiency and effectiveness.

12. The country is an active member of several international organizations involved in education, and has subscribed to the Basic

Education for All program recommended by various donor and financing agencies at the Jomtien, Thailand meeting in March, 1990. In addition, it has agreements with a number of bilateral programs to provide help to the general education area, most notably Danish International Development Assistance (DANIDA) which has supported efforts to modernize the curriculum, upgrade teacher education, improve educational materials, and improve the quality of life of nomadic families through distance education for nomadic women (through a UNESCO funds-in-trust project). The Danish assistance authorities have indicated willingness to continue help in general education. This has been supplemented by the help of the Japanese in printing and publishing. The World Bank has done a study on Mongolia's education expenditures and has issued a brief summary assessment of Mongolia's education sector.

13. The University of Pittsburgh in the United States has an agreement with the Mongolian government to collaborate in higher education reform issues, some of which affect the preparation of personnel for the school systems. This agreement has led to a United States Information Agency-financed exchange of Ministry of Science and Education and higher education officials with University of Pittsburgh faculty and administrators to explore educational policy and reform issues.

14. UNESCO, UNICEF, the Asian Cultural Centre for UNESCO and others have sponsored seminars, workshops and planning studies. UNESCO has facilitated visits by short-term experts under UNESCO's regular program to examine needs in the training of educational administrators. UNESCO's Regional Office for Asia and the Pacific in Bangkok encourages participation of Mongolia in the Asian Program of Educational Innovation and Development. Also, the Asia and South Pacific Bureau of Education, located in Bangkok, has a two-year program of cooperation with Mongolia, and it is sponsoring in 1993 a seminar and workshop on adult education. A number of groups, including the Peace Corps of the United States, the United Nations Volunteers, the Voluntary Services Overseas (VSO), the British Council (through the British Embassy) and a number of teams associated with religious organizations, have become involved in helping various institutions in Mongolia step up their English-language programs. The Bell Educational Trust in Cambridge, England, has prepared six student books and teachers' guides for teaching English at grades 5-10 and the English Language Institute in San Dimas, California, is training English teachers each summer in Mongolia.

15. A number of other organizations are involved in education and training activities in sectors other than education. For instance, WHO and other organizations are sponsoring projects to strengthen health education in Mongolia, provide managerial training for health professionals, and develop learning materials in the health area. Various projects also exist or are in the planning stage to train or otherwise reach agricultural and livestock breeders with new information and training.

Goals and Priorities

16. The Mongolian Constitution, adopted in 1992, establishes in paragraph 7 of article 15 the 'right to education.' This paragraph further states that the 'State shall provide basic general education free. Citizens

may establish and run private schools if they meet the requirements of the State.' Other articles guarantee equal rights for all who are citizens or who are legally resident in Mongolia, and guarantee freedom of speech, religion and political affiliation. Article 5 recognizes Mongolia as a 'multi-structured economy' that 'shall recognize all forms of public and private ownership and shall protect the right of the owner by law.'

17. The 1991 Education Law gives basic principles of education that are consistent with the later (1992) constitution. This law confirms that there shall be compulsory basic education (defined as eight years of schooling, or six years of primary and two years of middle education). General secondary education consists of the final two years of the ten-year school. In addition, there are a few schools that offer vocational training beginning at the ninth year. The law suggests that schools will have practice sites at business and industry in order to give students on-the-job experience as part of their education. It further stipulates that children may elect to leave school after basic education at grade eight and to continue later, either in formal schools or in nonformal and adult education programs. The law transfers considerable authority to local aimag and somon administrations to make decisions concerning the schools and suggests that it is basically their responsibility to finance the schools and the dormitories for nomadic children. The law appears to stipulate that such dormitories will be free to the students but this has changed in practice and in 1993 the parents appear to be expected to contribute half or more of the cost of food for the dormitories where they exist. Whether or not this is appropriate is currently being debated in the Khural (parliament).

18. The 1991 law further stipulates rights and duties of teachers, including the right to be supplied with necessary conditions for successful teaching. The pupils, in turn, have rights and duties including the right to choose elective subjects, to pursue a career of their choice (unless they have made a contractual commitment to accept a certain post following their school career), to choose schools and forms of study, to study various specialties at the same time, and to advance more than one grade when they are qualified. The government has interpreted the Constitution and the Education Law of 1991 as encouraging dramatic reform of the education sector in order to prepare children and young people for the new form of democracy and for the 'market economy.' This has led to emphasis on higher education reform, considered necessary to prepare the specialists required for the new social, political and economic order, and on reform of the school curriculum and teacher training programs to prepare the next generation for life in the new Mongolia.

19. Shortly after the passage of the Education Law of 1991, the then Ministry of Education (now Ministry of Science and Education - MOSE) issued the new curriculum for the ten year secondary education program. This curriculum was to come into effect gradually over several years in order to give the government time to prepare both teaching materials and teachers for the new program. The program eliminates most of the ideological emphases of earlier programs, introduces English, Russian and occasionally other languages as second languages beginning in grade five, and offers local schools the option of adapting up to 25 percent of the curriculum to the needs of the region or locality.

20. Overall, there will be greater diversification of studies so that students have more options to choose courses. There will be more flexible vocational skills options and presumably an identification of individual skills and interests rather than having everyone take the same program. There will be no purely academic option, and all students will be required to do pre-vocational and practical arts along with academic subjects. In 1991, the first level of the new content was introduced and in 1992 the second level introduced. Each year, the new curriculum will move up one level (see curriculum section, below).

21. The Ministry of Science and Education has also set certain goals and drafted a National Program of Action as part of the World Basic Education for All program initiated at the Jomtien conference in 1990. The Plan of Action suggests, among other goals, an adult education network to allow adults to upgrade their qualifications; special education programs for populations in remote areas, including the reindeer breeders of Tuva and the many nomadic cattle breeders; attention to special education for mentally and physically handicapped young people; and special attention to those in relatively poor regions and economic groups in Mongolia.

22. The National Plan of Action for Basic Education for All suggested the following actions (none were officially established as policy):

- a national nonformal education program and a department of nonformal education at the Ministry of Science and Education should be established;

- teaching materials for adults and school dropouts should be developed and printed by the interested units in the MOSE and universities;

- studies should be undertaken to study the psychology and physiology of the Mongol child;

- curriculum, textbooks and guides should be prepared by the national and provincial governments to develop the talents of children in each province;

- schools for talented children should be developed;

- a program should be developed to re-think rural education, the structure of rural schools and the selection and training of rural teachers should be initiated by the Ministry of Science and Education, the Federation of Teachers, and the education authorities in aimags, towns and cities;

- development of content and materials for general education, including better texts, teaching guides, visual aids and other materials useful in learning centers;

- organize workshops and training, both short and long-term, for re-training teachers and educators at all levels in nonformal education;

- work with international and national organizations, including the Asian Cultural Center for UNESCO, UNICEF, and other organizations in the promotion of school and nonformal education.

23. The above draft plan of action for Basic Education for All became part of inter-ministerial deliberations, financed largely by UNICEF, during 1992 and 1993 that led to a National Program of Action (NPA) for the Development of Children in the 1990's. A draft program, combining input from the various Ministries, was discussed during 1992 and a final plan was issued in May, 1992. This was approved by the Prime Minister on May 27, 1993, and now represents official government policy. The plan is comprehensive, covering needs of children and women in Mongolia, and lists major and supporting goals in women's health and education, food and nutrition, child health, water and sanitation, general education, and needs of children in especially difficult circumstances. These goals are prioritized and new programs and implementing organizations are suggested. Finally, the resource requirements are totaled, with indicative amounts for local investment and for international funding. The report concludes by discussing implementing strategies and approaches and suggestions for monitoring, research and evaluation.

24. Eight major goals are presented, of which two directly relate to education. One indicates that the 95 percent access to primary education in Mongolia in 1990 should be increase to 96 percent in 1995 and 98 percent by year 2000. The second indicates that the 4 percent illiteracy rate of persons 16-49 as of 1991 be decreased to 2 percent by year 2000.

25. Numerous supporting goals recognize the role of education in helping to achieve the other health, nutrition, child and woman's welfare goals of the rest of the NPA. Some of these supporting goals that have an impact on general education include: promotion of family planning education programs; strengthening compulsory education for girls; dissemination of knowledge to increase food production to ensure household food security; increase the number of children attending kindergarten; educate all children who drop out of school and who are illiterate to achieve 100 percent access to education by 2000; and promote the acquisition of knowledge, skills and values required for better living by organizing special programs through radio and television for both children and parents and by taking measures to introduce and strengthen the corresponding instructional activities at all levels of education.

26. The NPA proceeds to endorse a variety of new programs and the ministries and organizations that should be involved in their implementation. In the general education arena, these include (with responsible organizations in parentheses):

- In rural areas, train field workers and mid-wives, medical management and education workers on teenage education. Incorporate health care in school curriculum. TV/Radio programs for general public should also cover these subjects. (Ministry of Health [MOH] and Ministry of Science and Education [MOSE])

- Train school children to be physically strong and involve them in

nature. (MOH and MOSE)

- Train doctors and retrain paramedics in providing better and proper care for children in order to address childhood disability at an early age. (MOH and MOSE)

- Review and redefine the school mental load on children and establish guidance and consulting services for children in order to protect them from psychological trauma. (MOSE)

- Formulate program to education pre-school children in the family and improve childhood development activities to prepare children for school and to provide conditions for cognitive development. (MOSE)

- Develop private kindergartens. (Ministry of Finance [MOF] and MOSE)

- Expand kindergartens for children from poor families and enroll 25 percent of children from poor families in kindergartens with costs born by the government. (MOSE and local governments)

- Initiate nonformal education activities to cover 89 percent of children who dropped out of school and are illiterate. For literate dropouts: evening and correspondence courses and distance learning; for the illiterate children: in family classes. (MOSE with cooperation of local governments)

- Improve supply of school materials in part by seeking international assistance to provide notebooks and pens each year. (Ministry of Trade and Industry [MTI] and MOSE)

- Increase supply of technical equipment in schools in order to adopt contemporary educational methodology; obtain computers, copy machines, audio equipment and provide these to aimags. (MOSE and MTI)

- Develop guidelines, programs and methodologies for nonformal education; organize national seminar to set up the system and general methodology with assistance from UNESCO. (MOSE)

- Develop educational materials and train teachers to ensure that the adult population is literate in both Cyrillic and traditional Mongolian scripts, with special emphasis on teaching Mongolian script in the shortest possible period. (MOSE)

- Conduct distance learning for adults through radio and television. Although radio and television for education have been used since 1990, more channels are needed for education and should be established. (MOSE, Mongol Radio and TV)

- Establish National Research Center on childhood disability to conduct research on prevalence of mental retardation and to take measures to make early detection, prevention and treatment of visual and hearing impairment. (MOSE and MOH)

- Increase the number of schools for mentally retarded children (currently 2,500 are in such schools). Three more special schools with shortened programs should be established in South-Gobi, Middle-Gobi and Gobi-Altai aimags. (MOSE and MOH)

- Organize vocational training courses for disabled children (only 10 percent of such children now get such training and there is now only one such center). (MOSE and Ministry of Labor and Population Policy [MLPP])

- Provide special equipment for children with disabilities (for those with hearing and speech impairments). (MOSE, MOH, MTI)

- Provide professional training to 50 percent of all orphan children and set up a system to cover their expenses (currently only 10 percent of orphaned children studying in colleges qualify for professional tasks). (MLPP, MOSE, Ministry of Finance [MOF])

- Improve conditions for children from poor families; strengthen policy on providing free school materials, textbooks and clothes for children from poorer families, using resources from the care fund. (MLPP, MOSE, National Children's Center [NCC], local governments)

- Renew teaching of traditional skills at home through a program to revive the teaching of such skills to women and girls. (MLPP, MOSE)

27. The above list is only of programs in which the Ministry of Science and Education is to be involved. Many other projects involve health, sanitation and care of women and children through other ministries and projects. The NPA, of course, realizes that the government currently has no funds for most of the above activities and it appends a budget suggesting total support for priority projects totaling $97.4 million from external sources and 2,148 million Tg from 1993-2000. This amount would include $28.6 million of external investment in early childhood development (including kindergartens), primary education support, and adult literacy (presumably including nonformal and continuing education activities). These priority education areas would require 270 million Tg of local investment, including manpower, local supplies, use of presently available equipment, buildings, transport and other local costs.

28. The NPA is significant in that it is the only officially-sanctioned set of priorities that involve all government ministries and organizations and a number of private organizations and which deal with the overall needs of children and women. As will be seen below, however, without massive infusion of external resources, it is unlikely that many of the quantitative goals can be achieved. Kindergartens, for instance, are disappearing rather than being strengthened, dropouts are on the increase in schools, and school attendance is declining.

Institutional and System Structures

29. The Education Law of 1991 describes pre-school education as serving children from birth to three years (nursery schools) and from three

to eight years (kindergartens). Secondary schools include primary education (the first six grades of schooling), middle (years seven and eight), followed by general secondary education at years nine and ten. There are some nine and ten-year vocational schools and some eleven year schools for professional training. Young people enter school at the age of eight (occasionally seven) and education through grade eight is compulsory. Figure 4-1 shows the current structure of the system, though its representation of the proportion of each age cohort in school may be somewhat larger than it should be because of dropouts during the past year. Figure 4-1 also shows new bachelor's, master's and doctoral degree structures at the university that are only recently approved and that have not been put into effect in all universities. Degrees offered earlier were the Diploma, given after five years of postsecondary study; Aspirantur after yet two to three more years of post-graduate study; and Docturantur after approximately two more years of further study. Under the new system, some institutions may continue to offer the old Docturantur after the Ph.D. because of the feeling of some that this degree is of higher level than the Ph.D.

30. Schools for the primary, middle and general secondary education levels, generally do not exist separately for each level. In the system before 1991, Mongolians described complete secondary education as consisting of grades one through ten; incomplete secondary education consisted of grades one through eight. Virtually all schools have at least eight grades, though the schools that go through tenth grade are increasingly found in the larger towns and cities. Students finishing a school that only goes to eighth grade will have the option of traveling to a town or urban center that has a ten-year school with boarding facilities. A transfer student would enter ninth grade where other students would have been resident for eight grades in the same school. Such transfers may, of course, create adjustment problems for the new youngsters.

31. The school year nationwide begins on September 1 and operates what Mongolians call 'four seasons,' essentially four quarters. The first quarter is September 1 through November 5, when there is a one-week vacation. November 12 through January 5 is the second quarter, followed by a one-week vacation. January 12 through March 7 is the third quarter and followed by a two-week holiday and March 21 through May 15 is the final quarter. Many rural schools take a four week holiday from March 7 to April 4 in order to allow families to care for agricultural needs in preparation for summer. These schools then run two weeks longer than the urban schools in the fourth quarter, finishing on June 1.

32. From grades one to four, each grade group generally has one teacher plus a music teaching and a physical education teacher; from grade five onward, subject teachers have a classroom that students move to when they take that subject. The school operates six days a week, six hours a day from Monday through Friday and five hours on Saturday, though younger children (grades one through 4) attend only five hours each day. Over half the schools run two shifts, with the younger children in the earlier grades attending in the morning and older children in the afternoons.

33. The students are in school for about 180 days a year and if the rather intensive curriculum (see curriculum section, below) is taken into

consideration, the ten-year school is probably the equivalent in academic content to many secondary schools in other countries. Levels of achievement, of course, may vary from school to school, and there is clearly some differentiation between urban and rural schools.

34. As in many countries, some faculty members in the universities feel that secondary school graduates do not have sufficient math and science and several of the universities appear to be beginning one year preparatory programs for students entering the universities. This may be an efficient way of preparing the relative small percentage of students who will enter universities. An alternative might be to add a college preparatory year to secondary school, but this would affect the majority of secondary school graduates who will not continue; this alternative would probably be more costly than preparatory programs for the small number of students entering university programs requiring advanced science and math. Further, the current policy of the government is for local aimags and somons to adapt the secondary curriculum to needs of the region. To add a college preparatory year of purely academic work would run counter to the local adaptation policy.

35. Each teacher evaluates students in their classes and decides if students are ready to move to the next grade. There is some repetition but the system approaches an automatic promotion policy through the eighth grade. Historically, less than one percent of the students per year repeat grades and the figure is dropping. In school year 1990-1991. 0.68 percent of students in grades one to ten repeated; in 1991-1992, only 0.021 percent repeated (906 students out of a total enrollment of 411,700 students).

36. At the eighth grade, a certification examination is set (with elements developed both nationally and locally, but administered by the aimags) leading to a basic education certificate. In the structure before 1990, the eight-year certificate was labeled an 'incomplete secondary education certificate.' At the end of the tenth grade, a national qualification examination is given (with several parts, including elements developed within each aimag) leading to the secondary education certificate, earlier labeled the 'complete secondary education certificate.'

37. Many rural ten-year schools are having trouble maintaining enrollment past the eighth grade (and some even in the lower grades). This, along with financial difficulties in maintaining boarding facilities for nomadic families, has led to a policy of closing ten-year schools in rural areas where there is limited enrollment at the ninth and tenth grades. Eighth grade completers in these schools will have to transfer to other towns and cities if they wish to continue past the eighth grade. At a meeting of heads of education boards of aimags on January 25, 1993, it was decided that of 388 full ten-year secondary schools in the country, as of September, 1993, 102 would drop ninth and tenth grades and only 286 would continue full ten-year schools. Presumably, these ten-year schools will continue to offer boarding facilities for those who transfer from other towns. Currently, parents must contribute meat for the meals in these boarding facilities (though this policy is being debated in the Khural) and other costs (transportation, pocket money, etc.) are involved. There is some question of whether many children will be sent by their parents from outlying schools to

the ten-year schools remaining open.

38. Workers schools, popular under the socialist system, dropped from an enrollment of about 20,000 in the mid-1980's to only about 2,800 in the 1992-93 school year. These were schools offering primary and middle-school instruction at various times during the day and on weekends to workers who had not completed their formal education. Those who worked in the morning, for instance, could study in the afternoon or evening, and those who worked late in the day could study in the morning. These schools are disappearing but the government is discussing various ways of reaching school dropouts and others through extension of existing programs and the creation of new nonformal, adult and continuing education schemes; the experience with the workers' schools can contribute to these efforts.

39. At the ninth and tenth grades, students have the option to enter various technical and vocational schools. The technical and vocational system also seems to be a state of flux with enrollments dropping dramatically in both secondary level vocational schools and postsecondary institutions.

40. Caution must be used in interpreting statistical data of the Ministry of Science and Education because summary information is usually supplied for the first three grades and primary teachers are classified as those teaching these grades. Middle and upper-class teachers in such statistical tables are those teaching grades four through ten. With the current six-two-two structure, the statistical categories should be adjusted to reflect the new structure.

41. Although most primary, middle, and general secondary education is decentralized, with the aimags supervising the schools through an education board in each aimag, there are four schools in Ulaanbaatar administered directly by the Ministry of Science and Education. Two are schools for talented young people which select children completing sixth grade for grades seven through ten. One school specializes in science and the other in 'construction' or perhaps more apply put, design technology applied to constructing things ranging from electronics to buildings. A third school is for handicapped children (physically handicapped, blind and/or deaf) and a fourth is the Russian-Mongolian school. In addition, the Ministry operates a dormitory for orphaned children at a school for these children run by the city of Ulaanbaatar. Also, there are eight schools for mentally-handicapped children, four of these in Ulaanbaatar under the administration of the city education board and the other four in the provinces and under the supervision of the aimags where they are located.

42. The President recently proposed constructing a school in Baganuur, about 140 kilometers from Ulaanbaatar, to house street children now in Ulaanbaatar. During 1993, 420 such street children were registered and it is estimated that it would cost 77.2 million Tg to build a school for them. The matter is being discussed in meetings between the Ministry of Labor and Population Policy, the Ministry of Science and Education and the Ulaanbaatar city authorities. Perhaps more cost efficient and possibly more feasible of success would be to offer these children room and board in Ulaanbaatar if they will attend one of the already existing schools in the city. Some of

these children travel by train from city to city and their numbers seem to be increasing.

Programs

43. Trends in Enrollments and Institutions. Table 4-2 gives enrollment and other data for the various levels of education for the 1985, 1990 (when dramatic changes in the system began to be implemented), 1991, and 1992 school years. This table illustrates the rapid deterioration in enrollment during the past three years. Although initial enrollment in grade one in the fall of 1992 was somewhat higher than 1991 (51,900 versus 49,200), it was still some 5,000 less than in 1990. Enrollment in kindergarten and in grades 4-8 and grades 9-10 dropped off approximately ten percent per year from 1990 through 1992.

44. Table 4-3 shows enrollment by aimag as of January, 1993. The figures indicate that rural aimags are finding it difficult to hold young people beyond the early grades. In some rural aimags very few males are in ninth and tenth grades. For example, in Selenge Aimag, of 740 children in tenth grade in January, 1993, 509 were girls (68%). Even Central Aimag, near Ulaanbaatar, had only 703 children in tenth grade, of whom 500 were girls (71%).

45. For the 1992-93 year, the enrollment figures for grades three and four appear inconsistent. This is because in both the 1991-92 and the 1992-93 school year, as the curriculum changed, most schools combined third and fourth years into one. Thus, third year students in each of those years effectively skipped fourth grade and went straight to fifth grade. Thus, fifth-grade enrollments for 1992-93 are about double what they normally would be and fourth-grade enrollments are very low (see Table 4-3). Fourth-grade enrollment consists mainly of the students who progressed to fourth grade under the old system in the few schools that had not yet made the adjustment to the new system.

46. This phenomenon will cause some logistical problems as the fourth and fifth grade students move up through the system for the next three to four years (through completion of eighth grade) and in the 1996-97 school year there will be a bulge in graduates of the eighth grade, followed by a scarcity of graduates at the eighth grade the following year. How this will be handled by the secondary level so as to not penalize students during the years of the enrollment bulge is not yet clear.

47. Enrollment in boarding schools dropped from about 75,000 in 1985 to less than half that, or 35,368, in 1992. The boarding schools for nomadic cattle breeders' children are one of the primary reasons for Mongolia's high literacy rate (over 96 percent of at least four years of schooling). During 1992-93, families sending children to the boarding facilities had to contribute all or part of the meat necessary for meals. This was a burden for many families and it probably contributed to the substantial school dropout rate that year. Also during the past two years, most schools with boarding facilities faced financial problems and many closed their boarding dormitories in order to keep the attached secondary school operational.

48 The increasing unavailability of boarding facilities in education facilities probably will cause absolute illiteracy and functional illiteracy to rise dramatically among nomadic and other rural children if alternative education programs are not found for these children. In July, 1993, the legislature began debating the appropriateness and legality of the requirement that parents provide meat for the boarding schools. If the legislature re-instates the free means policy, it is not clear where the funds will come from. In any case, nomadic families themselves are increasingly keeping children at home in order to tend to recently privatized herds.

49. Table 4-4 shows the dropout by province (aimag) for the 1992-93 school year and Table 4-5 shows the cumulative effect of dropouts in terms of numbers of children age 8-15 (age of compulsory schooling) who have been in school but who have dropped out. The percentage of cumulative dropout began to accelerate in the 1990-91 school year and became increasingly serious in the 1992-93 school year. Only a cumulative average of 4 percent of all children 8-15 had dropped out of school in 1988-89; on September 25, 1992, school principals reported that a cumulative average of 18.6 percent had dropped out.

50. The 1992-93 school year was particularly significant in terms of the accelerating dropout rate, primarily in rural areas but to some extent in urban areas, of children 8-11. By September 25, 1992, a cumulative total of 15.8 percent had dropped out; by December 25, 1992, the total had risen to 21.8 percent. Over-all cumulative averages similarly are rising dramatically. As of September 25, 1992, a cumulative total of 18.6 percent of children 8-15 had been to school but dropped out somewhere along the line before completing compulsory schooling. This total rose by over three percent to 21.8 percent by December 25, 1993.

51. Table 4-4 illustrates the fact that the dropout rate is particularly alarming in rural areas. In the one year, 1982-83, three rural provinces had dropout rates over 20 percent and most of the rest had percentages in the mid- teens. Even in Darkhan and Erdenet, with reasonably strong modern sector activity, over ten percent of the students dropped out in the one year. Only Ulaanbaatar, of the eighteen aimags and four cities that are dealt with as aimags, had a negligible dropout rate for 1992-93; 0.6 percent dropped out in the capital. These figures suggest that Mongolia is rapidly moving toward a society where the emerging urban elite will increasingly have an educational advantage over the rural population unless policies are adopted to stem the rural dropout rates or to introduce nontraditional delivery systems for formal education and alternative nonformal opportunities for dropouts.

52. A recent report from Uvurkhangai Aimag summarizes responses from the schools of that province (Table 4-6). This aimag in south central Mongolia is a rural, cattle breeding region and the dropout figures illustrate the fact that many families are withdrawing children (even as early as first grade) to help with the cattle. Curiously, no schools indicated that the children were not interested in the curriculum or that the quality of teachers was low. This may, in part, be because these data are

collected by school principals and parents may not wish to offend the principals by criticizing the schools. However, other school principals have suggested that the deteriorating school conditions, intermittent and sometimes broken heating systems, lack of school materials and some loss of good teachers was negatively affecting the image of the school among parents and the community.

53. A drop-out study being conducted by the Institute of Curriculum and Methodology of the Pedagogical University, with the cooperation of the Royal Danish School of Educational Studies, is conducting field interviews of children who have dropped out of school and their families. The final analysis of the study has not been done, but this study should provide in-depth information on the reasons for the increasing dropout rate. At some point, the dropout phenomenon will level off and enrollment again will begin to rise if only because of population increase. Projections indicate that the number of children under the age of 16 will increase from 900,600 in 1990 to 993,700 in 1995, 1,097,300 in 2000 and 1,1161,500 in 2005. This is a growth of 29.0 percent in just 15 years.

54. Teachers. The education system has traditionally been well supplied with qualified teachers, though there are increasing reports that many qualified teachers are leaving the profession to find more remunerative jobs. For the first time in recent years there was a decline in the number of teachers in the school system in the school year 1992-3 (Table 4-7). Primary class teachers (grades 1-3) declined from 6,230 in 1991-2 to 6,105 in the later year. In 1991-2 there was a total of 14,251 middle and secondary school teachers (grades 4 through 10) as compared to the 1992-3 total of 13,276. Part of this decline may also have been due to the decline in enrollment caused by the dropouts during the last three years.

55. The MOSE indicates that there is a serious shortage of qualified teachers for the forthcoming school year beginning in September, 1993. During 1992-93, 1,270 teachers left the service, many for posts in the private sector. Only 529 students graduated from the Pedagogical University, some of whom will not enter teaching. Another 49 graduated from the Teachers College under the Pedagogical University and 88 from the Teacher Training Institute in Khovd. In order to replace the teachers who have left, and to fill posts vacated earlier with qualified teachers, 3,380 new teachers would be needed, according to Ministry estimates, in spite of the closure of the ninth and tenth grades in a number of schools. The Ministry indicates that the aimags will seek tenth-grade graduates to teach in the early grades and graduates from specialized professional schools to teach in the upper grades. It is likely, of course, that many schools will have continue to make do with large numbers of under-qualified teachers as budget restrictions will probably preclude filling all teaching posts with qualified teachers, even if they were available.

56. The vast majority of teachers are female (see Table 4-7). Slightly more than 90 percent at the grades 1-3 level are female; slightly over 72 percent at all levels. Two-thirds of all teachers have a higher education degree; most of the rest have specialized pedagogical training at the secondary level, and a small number (nine percent) have only secondary education. Interestingly, among the teachers with only a secondary education

degree, there is a much higher proportion (48 percent) of men.

57. Teachers are trained for middle and secondary schools at the Pedagogical University and for kindergarten and primary school work in three Teachers Colleges. One of these Teachers Colleges is attached to the Pedagogical University in Ulaanbaatar and the other two are independent (one in Arkhangai and one in Dornod). These colleges provide two years of specialized work after students finish secondary school (tenth grade). Traditionally, these colleges have provided teachers for grades one through four, though under the new structure they will be providing teachers for grades one through six (the primary school of the future after all schools have converted to the new system).

58. Teachers, especially for middle (grades 7 and 8) and secondary (grades 9 and 10), are also selected from graduates of other universities, including the formerly independent Pedagogical Institute at Khovd in western Mongolia that is now a part of the National University of Mongolia. Teachers for the schools for the handicapped traditionally were trained in the former Soviet Union and in Hungary. Now, the Teachers College under the Pedagogical University is organizing a program for these teachers (beginning in September, 1993). Twenty-one students have enrolled for the program. There are some agreements with universities in England to work with the Pedagogical University on this kind of specialized training.

59. In addition to teachers trained in universities and teachers' colleges, sizable numbers are trained in postsecondary technical colleges that prepare young people in a variety of technical trades. Fully a third of all teachers in the system have entered teaching by this route (see Table 4-7). In addition, in rural schools where qualified teachers may not wish to work, a number of secondary school graduates are employed, often to teach at the primary level. Currently, there is reported to be some degree of migration of qualified teachers from urban to rural areas because of the easier availability of foodstuffs and better quality of life during the recent period of economic austerity; it is not possible to quantify this trend, however.

60. Most teachers were trained and entered into service before the dramatic changes since 1990. Accordingly, the sizable changes in goals and in curriculum that have occurred during the past three years have required attention to inservice teacher training. The Institute for Curriculum and Methodology (ICM) under the Pedagogical University is charged with conducting such activity. The Institute, before June, 1993, handled only inservice training, but curriculum development and research functions earlier in the Educational Development Institute attached to the Ministry of Science and Technology were added to the Institute at that time. The Educational Development Institute remains with about 20 staff and is engaged in three long-term (mostly three-year) policy research projects that use an additional 16 part-time researchers. One project is examining needs in educational management, a second the question of need for continuing education, and a third is a policy study on educational content and standards.

61. With the transfer of curriculum development and research functions to the ICM, the same organization is now in charge of developing new

curriculum and teaching materials for the schools, doing research on such phenomena as drop-outs, and training teachers to handle the new curriculum and materials. The ICM has about 70 staff in Ulaanbaatar (the entire pedagogical faculty of the Pedagogical University is considered part of the Institute). About 16 of these deal exclusively with inservice education, 26 are specialists in psychology and education and teach courses both in the University and work in the Institute, and 28 are researchers working exclusively on curriculum and related studies. The Institute is authorized to have eight to ten 'methodologists' in each of the 18 aimags or provinces and in the four cities, Ulaanbaatar, Darkhan, Erdenet and Choir, that have their own administrations similar to the aimags. In fact, the ICM currently has only six to eight in each aimag. These methodologists are charged with organizing doing research, testing of curriculum materials, and organizing inservice teacher training activities. The Institute has been experimenting with distance education for teachers, and has discussed the possibility of using its network of methodologists to help school systems in the various aimags to develop nonformal and continuing education programs for school dropouts. These methodologists are paid less than teachers, though many of them are able to supplement their income through part-time teaching.

62. The Institute benefits from a major technical cooperation venture funded by DANIDA, the Danish assistance agency, and executed by the Royal Danish School of Educational Studies. This project is assisting the Institute in developing curriculum materials, in pursuing studies of educational dropouts, and in developing distance inservice training programs for teachers. The Danish authorities have also made sizable grants of paper for the printing of textbooks, equipment for printing pilot editions of texts at the Institute, and have indicated that they may be willing to extend their assistance to the general education subsector if other needs can be shown to have high priority. Any other donor assistance in areas now being handled by this Danish-supported project should supplement and not duplicate its efforts.

63. Teachers' salaries are low. The July, 1993, salary scale (including a June, 1993, across-the-board increase of Tg 1,500) for kindergarten teachers is from Tg 4,200 to 4,400 (teachers with higher education about 1,100 Tg more); for general secondary school teachers with higher education (grades 1 through 10), Tg 5,500-6,800; for kindergarten principals, Tg 5,500-6,800; and for general secondary principals, Tg 6,000-7,300. At the July 1993 exchange rate, a teacher or a principal who earns Tg 6,000 a month is earning the equivalent of US$15 a month. Other perquisites and benefits that existed under the former regime, such as low cost housing and free medical services, are gradually being eliminated or, at least, having user fees attached. For example, the cost of railroad tickets and housing more than tripled in early summer, 1993, and other services once free or practically so are increasingly the subject of user fees designed to recover the cost of the services. Clearly, teachers in areas such as foreign language where there are opportunities in the private sector are facing incentives to leave the teaching profession.

64. Schools in some somons had exhausted their 1993 calendar year budgets by June or July and in some the teachers had not been paid for a month or more. It is assumed that the Ministry of Finance will authorize

additional funding for the rest of the year and that the teachers will continue to be paid and the schools will open in September. In the unlikely event, however, that such funds are not forthcoming, there will be a crisis of enormous magnitude in the general education sub-sector as most of these schools will be closed for the coming academic year.

65. Except for some inservice training for educational administrators, there has been, in the past, no formal training or certification for such specialists. However, the Educational Development Institute is studying the problem and will report on its study in the future. In addition, the Pedagogical University is introducing courses in its program for the preparation of teachers, and those teachers who wish to become administrators may take courses during the third year of their training beginning in September, 1993, according to present plans. In addition, the Institute for Curriculum and Methodology has indicated that it will develop inservice training courses for administrators.

66. Curriculum. In the past, all students had to take the same program with no electives and few options available to aimags, somons or local schools to modify the program in any way. The program was closely patterned after that in the then Soviet Union, though there were some adaptations to the Mongolian context. In the new curriculum, gradually being introduced since 1991, there will be greater diversification of studies so that students have more options; more vocational skills options at later stages; identification of individual skills and interests rather than having everyone take the same program; no option for purely academic studies, with all students doing pre-vocational and vocational work along with academic subjects, etc. In 1991, the first level of the new content was introduced and in 1992 the second level introduced. Each year, the new curriculum will move up one grade level.

67. Key characteristics of the new curriculum are as follows:

- In the future, the secondary school will be divided into three parts: first, primary, then basic [middle], then secondary. Apart from these three types of schools, there will be schools for gifted children.

- The main structure, will be 6+2+2 [as compared to the old structure of 4+4+2]. The 6+2 level is considered basic education and will be compulsory, although students who wish to leave to begin work may do so after the seventh year of study. The two years following the eight years of basic education will lead to a complete secondary certificate.

68. The main purpose of the new primary school (grades one through six and ages 7 or 8 through 13 or 14 or older if there are repeaters):

- The primary school is to teach children to speak and write their native language correctly; to develop basic computational skills; to develop an elementary understanding of social, natural and human sciences.

- Further, the children are to be taught to respect humanity, adults, parents, teachers.

- Children are to be taught basic work and survival skills that are useful to themselves and to their environment.

- The unique skills, talents and abilities of each child shall be identified and built upon [as compared to earlier approach within which all children did precisely the same thing

69. Main new ideas of the basic or middle school; (two years, from roughly age 13 or 14 to 15 or 16):

- Based on primary school knowledge, the fundamentals of natural, social and human sciences will be developed.

- Technology of production will be introduced; in addition, the children will be encouraged to use their knowledge in practical life.

- Children will be encouraged to respect historical and cultural property; nature, environment and human beings; and their individual interests and talents will be stimulated.

70. The main purposes of the new secondary school; (two years, from roughly ages 15 or 16 to 17 or 18)

- Scientific and technical knowledge to be further developed, on the basis of individual interests of students.

- This level is also designed to prepare students for professional, vocational and technical schools; and, at the same time, to prepare them with skills for self-realization. ...

- There will be a new vocational secondary school. Children from grades 7-10 may go to this school if they wish. Apart from basic knowledge, they will acquire job skills in this school. Job skills taught will vary, according to local needs.

71. The changes in the school curriculum are gradual, and began with the 1992-93 school year. Ministerial Order 146, dated 11 April, 1991 listed the gradual changes in the curriculum to be undertaken over the next several years, and Table 4-8 shows the curriculum for the 1992-3 school year. Table 4-9 shows the curriculum for the upcoming 1993-94 school year, beginning in September, 1993, and Table 4-10 shows the curriculum 1995-96 school as it was planned in the April, 1991, Ministerial Order.

72. Already, however, modifications are being made in the originally announced curriculum. The curriculum for 1993-94 in Table 4-9 differs from the curriculum for 1993-94 announced in April, 1991. The earlier plan had only three hours of Mongolian language in grade 5 instead of five. Practical arts as a subject has been increased to 22 total hours across the ten grades from an originally planned 18, suggesting somewhat more emphasis on practical, pre-vocational training. It can safely be assumed that this trend will continue and that Table 4-9, which is the original plan for 1995-96, will be modified and it may include more practical work than now is listed

and other changes.

73. The original curriculum plan announced in 1991 assumed the continuation of secondary vocational schools (often called 'professional' schools) that students could enter at the ninth or tenth grades and that often continued into an eleventh year. Many of these schools seem to be disappearing and three have become general secondary schools.

74. Essentially, the primary, middle, and general secondary schools seem to be moving toward what might be called a diversified general education program (what is called in some countries a comprehensive school program). It is clear that the program is offering more natural science (a new subject), less of physics and astronomy, and new subjects such as history and social studies (combined course), practical arts and home economics, physical education and health, and moral education. At the ninth and tenth years, there will be at lease fifteen hours a week of diversified vocational studies and probably more as the program proceeds. The ninth and tenth grades (the last two years of general education) will become a prevocational course for most students if current plans are followed.

75. The introduction of the traditional Mongol script as a required subject in schools and the gradual introduction of textbooks in other subjects in the Mongol script has been met with some resistance by parents and teachers, many of whom do not know the script themselves. Although the traditional script has been offered as an optional subject in secondary schools since the early 1980s, not many students had taken it.

76. Since 1987, one hour a week of traditional script in grade eight has been required, and pupil's books and teacher's handbook were for this course were published. In 1989, a pilot project to teach the script in grade one was launched in Secondary School No. 1 in Ulaanbaatar. Since then, political interest in intensifying the use of the script has intensified and a decree was issued in May, 1990, of the them Mongolian People's Republic Council of Ministers on the re-introduction of the traditional script at all stages of the education system. In June, 1991, the State Baga Khural (Parliament) issued a decree suggesting that all official documents should be in the national script by 1994.

77. A commission was subsequently established to supervise the introduction of the script in all elements of Mongolian life through both formal and nonformal education and retraining of teachers. During the 1991-92 and 1992-93 school years, basic texts in reading and math were distributed to selected first grade schools and to some fifth, sixth and seventh grades. Universities are introducing the script at the beginning year and at the graduate level.

78. A program for retraining language teachers was established and in 1991 and 1992 a total of approximately 3,500 such teachers attended training seminars. Achievement tests administered at the end of the sessions indicated that most of these teachers can now handle the traditional script satisfactorily. However, many teachers of science, math and other subjects are not yet retrained to use the script and teaching materials in the script are still limited. According to a 1992 survey, only about 22 percent of the

population had basic elementary reading skills in the script, and 30 percent moderate skills.

79. With the help of UNESCO and Japan, increasing numbers of traditional script texts are becoming available. A primer for first grade, first, second, and third grade reading texts, an elementary math text, grade five, six and seven traditional script texts, a Mongol script orthographic dictionary (11,000 words), a Mongolian script grammar (14,000 words) and other text and reference materials are already printed, nearly ready to print, or in the development stage.

80. The opportunity costs associated with the introduction of the traditional script are high, especially when resources are so scarce for basic needs within the school system. Increasing numbers of hours are being devoted to teaching the script in the schools (up from original estimates when the new curriculum was introduced in 1991), and what few resources are available for printing and distributing texts are being diverted almost solely to the needs of the courses dealing with traditional script.

81. The concern of the government and the legislature to re-assert traditional Mongolian culture is understandable. However, one might consider that there are many other facets of Mongolian culture that could be emphasized without costly disruption of the learning process. A paced re-introduction of Mongolian script more in line with the limited resources currently available for new curricular materials might be an appropriate compromise. Primary emphasis might be placed during the next several years on updating the texts and teaching materials in all subjects, while moderating the emphasis on immediate adoption of the Mongolian script at all levels and in all subjects.

82. Other textbooks are prepared by subject-matter specialists in universities, the Academy of Sciences and by experienced teachers, under contract with the Ministry of Science and Education. These manuscripts are then edited by the Publishing House for Children's Books and Texts, which is under the Ministry of Science and Education. This Publishing Organization designs the books and contracts with printing houses for the production of the books in quantities necessary for the schools. Generally, sufficient copies are provided the schools to keep in the library and loan to students. The books generally are not sturdy and often last only two years before they are unusable.

83. Paper is in critically short supply. DANIDA has made two grants of paper for the printing of texts, one of 250 tons about two and one-half years ago and another of 390 tons for printing of texts during the coming two years (for the 1993-4 and 1994-5 school years). The Publishing House for Children's Books allocates this paper either to the State Publishing House or to other printers after it decides who should print the material.

84. Finally, English language texts for the schools have been developed by the English Language Institute in San Dimas, California, that has a team of teachers at the Mongolian Technical University. The Institute has contributed copies of these texts for the secondary schools. In addition, the Bell Educational Trust in Cambridge, England, has prepared six student

books and teachers' guides for teaching English at grades 5-10. Each of the two series of English materials takes a different approach and one uses English orthography while the other uses American. Some policy choices ultimately must be made as to what kind of approach is to be followed in the schools.

85. Administration. The Department of Pre-School and General Secondary Education of the Ministry of Science and Education is in charge of implementing policy as set by the Khural, the Council of Ministers and the Minister of Science and Education. The Department has seven professional staff (officers handling policy in the following areas: pre-school; primary and secondary; compulsory and labor and aesthetic education; upper secondary and natural science education; special education; nonformal education; and local and rural education) plus a Director General and a Deputy Director. Through its own actions and interaction with others, including the Board of Inspectors, the Ministry's Children's Books and Textbook Publishing House, the Institute for Curriculum and Methodology of the Pedagogical University, and the Educational Development Institute, this small group establishes the curriculum for the schools and generally supervises the development and distribution of texts, helps prepare and administer examinations at the eighth and tenth grades, issues directives to the education officers in the Departments of Social Policy in the aimags, and generally advises the Minister on educational policy below postsecondary level.

86. With such a small staff, the Ministry must limit itself to policy-setting and can do little to manage the schools. This is consistent, of course, with current policy to decentralize responsibility for administration of the schools to the aimags and somons. Within each aimag there is at least one education officer in charge of schools, and in some there is a second officer in charge of kindergartens. These officers are an integral part of the Department of Social Policy within the aimags. In all aimags there is also a School Inspector who reports to the State Inspector, who reports to the Minister of Science and Education. The field inspectors are authorized to levy fines on school principals and teachers if they feel the personnel are not performing up to standard.

87. The six national inspectors under the General Inspector are specialists in different fields (one each in agriculture, social sciences, natural sciences, technology, kindergarten, elementary school) and are advised by 'specialist experts' who are called upon as needed. The inspectors and the 'specialist experts' meet regularly (about every two months, in theory). They are charged with establishing standards for the various academic subjects. The Inspectorate Board has a broad mandate and few resources. It wishes, for instance, according to a proposal it has developed for possible foreign assistance, to set up an examination bank and to compare content, curricula and programs in Mongolia with 'standards and levels in highly developed countries of the world.' This would appear to overlap the work of the Institute of Curriculum and Methodology under the Pedagogical University that is in the process of evaluating curriculum and developing and trying out new curriculum materials. The ICM has six or more methodologists in each aimag charged with working with teachers on content and methods. With the limited resources currently available in Mongolia, there should be a careful study of how to minimize duplication of effort

between the Inspectorate Board and the Institute.

88. Although the education officers and inspectors at the aimag level are supposed to visit local schools regularly, many schools receive few or no visits from these officers because of lack of funds and petrol for travel to outlying schools. These officers carefully supervise the collection of data from the schools of the aimag and work with the aimag officials to be sure that national education policy is being implemented. Originally there were more such staff in the aimag, but they have been reduced dramatically during the past three years.

89. Most school administrators and education officers in the aimags are experienced teachers who have learned their skills by working in schools. Local school principals work with the administrative officers and elected officials of the somon and aimag in negotiating budgets and in getting permission to expend funds on major capital investment projects. In the sense that educational administrators are part of a team of heads of various services in a somon who must take more or less collective action in managing the somon, educational administration in Mongolia is closer to public administration than it is to the kind of educational administration found in some western countries. Many of the school employees are those who maintain the school, prepare meals for the boarding facility, clean the buildings and grounds, and otherwise service the school. Since many of the schools have had boarding facilities, the number of support staff has been high, usually exceeding the number of teachers in the school.

90. There is some ambiguity as to who appoints the principals. With decentralization, many of the aimags have taken leadership in selecting principals, though the Ministry appears to maintain some authority in this area as well. Much of the job of these principals has to do with reporting three times a year to the Ministry, with finding ways of keeping the school building repaired and facilities operating, with paying for the heating and electricity and the support staff, and with assuring that the teachers perform their duties. Principals in rural schools are faced with the problem of managing dormitories, including food service, laundry, and all of the services of a residential school. In the past, the government paid the full cost of these dormitories that made possible the virtual achievement of universal primary education in Mongolia. Now, parents must share the cost of food at the dormitories, and other costs (especially heating and electricity) are so high that most somons will probably not be able to continue dormitories if present budget allocations are not increased dramatically.

91. Some principals work closely with parents, and in some urban schools there appear to be reasonably active parent organizations that often help raise funds for the school. Such organizations appear to be less active in the poorer, rural schools. Each twenty to thirty students has a class teacher who acts as a kind of counselor to the group. These class teachers, however, have had no training in counseling and guidance nor in career counseling. With the new market economy dramatically changing the career perspective and the ways to reach appropriate employment, some intensive inservice training of class teachers in career counseling might be appropriate. At one time, there were psychological counselors stationed in the aimags, but these posts have been eliminated during the past three years.

92. Facilities and Equipment. Under the old system now in transition, the children in the first three grades had an integrated curriculum; after that, they took subjects in classrooms set up for each subject. In the new system, most schools have converted to a six-year primary program with an integrated classroom through the fourth grade. Subject-matter classrooms from the fifth grade onward have the equipment and teaching resources necessary for that subject. Biology, chemistry, physics, mathematics classrooms, for instance, have the necessary laboratories or equipment for those subjects. There is some discussion of moving the integrate classroom structure upward through the sixth grade.

93. No equipment or materials of any consequence have been acquired by most schools for the past three years. Most equipment purchased in the past tends to be laboratory equipment not always suitable for teaching purposes. Many schools have some audiovisual equipment, but most is idle for lack of projection bulbs, up-to-date teaching material and supplies; chemistry labs have a scarcity of chemicals and experimental equipment is often not operational for lack of pieces or lack of repair facilities. Few textbooks exist although many school libraries have multiple copies of textbooks that can be borrowed by students. School libraries, in fact, are mostly staffed by someone trained in library work and these are often of considerable help in providing some materials for the students. Otherwise, the parents must try to find and purchase materials the children need in school.

94. Ministry of Science and Education officials indicate that in 1992, a parent could buy a set of teaching materials for one school student for about 100 Tg. In mid-1993, the same materials cost about 1,500 Tg per grade. Salaries have perhaps doubled in that period, but the cost of schoolbooks and materials has soared since price controls on most items has been abandoned. A good professional salary is still around Tg 4,500 a month; thus if a family has, say, three children in school, an entire month's salary can be spent on books and materials for the children. This undoubtedly is contributing to the dramatic increase in school dropouts.

95. A further problem is the scarcity of textbooks that follow the new curriculum in the schools. There has been something of a crash program to prepare new books for teaching the Mongol script and for some of the other subjects, but the books used in earlier years are still used in many subjects and these are often in short supply.

96. There is a curriculum project at the ICM to develop new curriculum materials and texts. This work is limited for the moment to mathematics, natural science and social science materials, plus some primary school materials. Pilot editions are being tried out in three aimags and DANIDA has contributed sizable stocks of paper to print editions once they are ready for distribution (one contribution of 250 tons and a subsequent contribution of 390 tons). Japan has also indicated an interest in helping in the textbook production and distribution area. There appears to be a need for more curriculum development and textbook work in the area of practical arts appropriate in the various provinces. Within the new curriculum, there is an emphasis on developing courses related to local needs and much of the curriculum work to date is designed to improve traditional academic subjects.

97. It is not clear how the Government intends to handle textbook manufacture and distribution on a regular basis. Textbook publishing, including manufacture and distribution, is an industrial process and printing plants must be used full-time in order to be efficient. Rarely are presses dedicated only to textbook production efficient because of the seasonal nature of the production process. Several schemes are being discussed for possible external finance, and the entire printing and publishing (both government and private) sector should be examined carefully before major investment is made in additional printing or publishing facilities. Small equipment for pilot editions to be tested, as is being done at the ICM, of course, is appropriate for supporting curriculum research and materials testing.

98. School buildings and their heating systems are generally in a state of deterioration nationwide. There have been no funds for three years in most aimags for more than the minimal of maintenance, and some schools may not be able to open in the Fall of 1993 because of deteriorated heating systems.

99. Costs and Financing. Both the Education Law of 1991 and the current Constitution of Mongolia (in Article 16), approved in 1992, mandate the provision of free basic education. This is currently interpreted to mean education through the eighth grade which is compulsory. Chapter Four of the Education Law of 1991 stipulates that the State (national government) will help finance education, but that there should be participation by provincial and local authorities. Chapter Four, article two, stipulates that budgets for individual schools and institutions will be based on per student cost as set by the government.

100. In practice, only Ulaanbaatar and a few reasonably wealthy aimags and somons contribute significantly to the budget for elementary, middle and general secondary schools. The schools generally estimate their needs, send a budget to the aimag which sends a consolidated estimate to the Ministry of Finance. The Ministry of Finance, in turn, consults the Ministry of Science and Education and then allocates funds back down the line to the aimags, which, in turn, pass it on to the somons and the schools.

101. The khurals of the aimags have the authority to shift funds from one area to another after they receive budgets from the Ministry of Finance, so it is not certain that the budget for education approved by the Ministry of Finance in fact will go to education once the funds move down to the local level. The only role that the Ministry of Science and Education plays is to advise the Ministry of Finance on the per-student cost of education at the public school level.

102. The per-student cost of general secondary education (grades one through ten) was calculated at Tg 2,053 during the 1992-93 school year and would obviously be low if used for the forthcoming school year because of inflation. This estimate in the past has not included inservice teacher training costs, now the responsibility of the ICM. The government might consider including inservice teacher training costs in future educational budget planning.

103. Between 1990 and 1992, kindergartens were consistently allocated about 20 percent of the government's educational budget for the entire sector, including higher education. General education, primary through secondary, was allocated about 55 percent. All government budgets are planned on a calendar year basis, even though schools begin their academic years in September and end in mid- or late May. Accordingly, a budget for a certain calendar year covers a little over half the previous academic year and a little less than half of the forthcoming academic year.

104. Because of the bitterly cold climate in the winters, heating and utility expenses of the schools are unusually high. Data from calendar year 1992 indicate that 'administrative expense' (including office supplies, utilities and heating) make up about a third of the expenditures in kindergartens and general secondary education (grades 1 through 10) and vocational schools (28.7 percent, 34.5 percent, and 30.4 percent, respectively). Salaries barely exceeded administrative expense in calendar 1992: 29 percent of kindergarten and 42.9 percent of general secondary education budgets. Salaries represented only 26.7 percent of vocational school budgets, actually less than the 30.4 percent expended on administrative expense.

105. The only other major expense of more than fractions of a percentage is for food. Many general secondary schools have dormitory facilities for children of animal herders; 9.8 percent of the general secondary budget in 1992 was spent on food, primarily in the dormitories. Kindergartens, in turn, serve lunch and snacks for all children enrolled, and this totaled 33.1 percent of kindergarten budgets in 1992. Because of the economic crisis, the government has indicated that parents must share the cost of food in kindergartens and provide the meat for boarding schools in order to economize. As noted earlier, this has decreased demand and along with other financial problems has made it difficult in all but the wealthiest somon to keep their boarding schools and kindergartens open.

106. Kindergartens in Ulaanbaatar had exhausted their allocated funds by summer of 1993 and indicated that they could not open in the fall if more funds were not available. In Ulaanbaatar, per-student costs in kindergartens range from 700-800 Tg per day, and food costs about 70 Tg a day, half of which parents paid through a monthly charge. Assuming that a child is in kindergarten for 20 days a month, that charge would total 700 Tg. Teachers or professional government employees with three young children and making Tg 4,000 a month would thus pay half of their salary for kindergarten expenses.

107. Other than charging for food, most general secondary schools and kindergartens have limited means for raising their own revenues. In some rural schools, flocks of sheep have been accumulated through donations by parents to help pay for food; in other schools, handicrafts made by students have been sold to raise revenue. Some schools are attempting to rent excess space. Otherwise, there is not much potential for cost-recovery at the general secondary school level. And, in any case, schools at the basic education level should not invest an inordinate amount of their intellectual energy in trying to raise money.

108. Evaluation of Quality and Effectiveness. There have been no national studies on the order of those done by the International Association for the Evaluation of Educational Achievement and thus it is difficult to compare Mongolia's academic levels with those in other countries. However, historically the system has been patterned after a reasonably rigorous Soviet system and the products of the Mongolian system have competed favorably for progression into higher studies in the former Soviet Union and Eastern Europe.

109. Further, the system historically has benefitted from a well-trained cadre of teachers. Although there has been little formal training of educational administrators, principals and supervisors appear to be well aware of their responsibilities and, on the whole, creative in attempting to create a school environment conducive to good teacher morale and student achievement. Another indication of reasonable quality is that most students progress from one grade to another with little difficulty. Although there is no official automatic promotion policy, very few children repeat a grade, even at the eighth and tenth grade levels where national examinations have traditionally been given that students must pass in order to receive certificates.

110. In terms of school-assigned grades (done locally by each school), there seems to be little difference between urban and rural schools. For instance, in the 1992-93 school year, students in Darkhan and Erdenet, aimags with a substantial urban base, did about the same as students from the more rural Central, Uvurkhangai and Uvs Aimags. For instance, in fifth grade algebra, roughly 10 percent of the students in Darhan received a grade of excellent, 25 percent a grade of good, 50% a grade of satisfactory, and about 15 percent poor. In Uvurkhangai, a rural province, 12 percent of the students received excellent for fifth grade algebra, 26 percent good, 46 percent satisfactory, and 6 percent poor. These tests, of course, are those constructed and given by the teachers themselves and represent the teachers' estimates of the comparative performance of their students. Thus, the results of these tests do not necessarily mean comparable achievement following a national norm. The results do indicate, however, that the teachers are reasonably consistent in grading.

111. Quality may be deteriorating in many schools because of a number of factors. First, the curriculum is undergoing radical transformation (see curriculum section, above) and many schools and teachers are not prepared for the new curriculum. Texts and teaching materials for a number of subjects in the new curriculum are scarce or do not exist, and many texts used before the curriculum reform are still being used. Many of these texts are kept in the library and loaned to students, and even these are wearing out. Some of these texts in standard subjects may be satisfactory, but texts introducing content on the new social, political and economic context of Mongolia are nonexistent or are in short supply.

112. The curriculum reform introduces much more emphasis in all schools on the practical arts, essentially pre-vocational training, and many schools are not sure how to interpret this new trend. Each aimag and school has flexibility to modify up to 25 percent or 30 percent of the curriculum in

order to adjust it to local needs, and these practical subjects, presumably, will largely relate to the local economy. Teaching materials and teachers qualified for this part of the curriculum are not always available, though some of the earlier vocational schools may be merging with general secondary schools.

113. Further, school budgets, as noted above, are not keeping pace with inflation, and school maintenance and equipment budgets are slim or nonexistent. Teacher morale, the team has been told on numerous occasions by Ministry officials, school principals and teachers themselves, is deteriorating because of the budgetary conditions, and many seem to be leaving the profession for other jobs.

114. In addition, there is a policy to close many ninth and tenth grades of schools in somons in the eighteen aimags, with the idea of keeping open a limited number of ten-year schools, primarily in the capitals of the aimags. Already in rural somons, there are limited numbers of children in ninth and tenth grades (and these are mostly girls, often as many as 90 percent). With the closing of these grades, even less eighth-grade leavers will be willing to go some distance to ninth and tenth grades in the capitals. At the lower end of the system, kindergartens in all but the wealthier areas are closing, leaving rural children especially vulnerable in that they will have no pre-school opportunities at all. As of summer, 1993, it had already been decided to close 78 of 806 kindergartens in the country, and the continuing financial crisis may force more to close.

115. The above trends, combined with the increasing dropout rate at all levels, clearly project a deteriorating effectiveness of the educational system in maintaining the high educational levels of the past. Illiteracy levels will climb as the number of children who do not enter school or who drop out in the early grades increases. The number of children finishing the compulsory eight grades will continue to decline, and though logic would expect a leveling off of dropouts, experience in the 1992-93 school year has seen only an acceleration of the trend.

116. The quality and effectiveness of the system, then, is mixed, and both are clearly deteriorating because of a lack of resources and increasingly low morale in the system. Although many local principals, somon officials, and teachers are innovative in their efforts to keep the system running in this period of economic crisis, many are concerned that the coming winter will see a mass closure of schools because of lack of funds for teachers salaries, heating and utilities and school maintenance. Most take for a fact that more dormitory facilities will be closed during the coming year for lack of funds for food, heat, and maintenance, and that only the barest minimum of school services may survive.

117. The government has indicated that all schools will open as planned in September, so the projections of even further crises may be overstated. Also, local authorities and families may find ways of keeping schools open, even if central government funds are not sufficient. The situation merits close monitoring by both Mongolian authorities, the Khural, and the international donor community.

ANALYSIS

Needs

118. One can make a case that the high levels of educational opportunity in Mongolia were well suited to the former socialist economy but that some downward adjustment is needed in the current economic crisis. However, if the system is allowed to deteriorate much further than it has during the past three years (and especially during the past year), it may reach the point where it will take years to reconstruct it to an acceptable level of quality, effectiveness and efficiency. Already, many parents of rural families and cattle breeders are withdrawing children from schools that they, themselves, attended and completed a generation ago. The notion that compulsory schooling to the eighth grade is necessary and useful is being abandoned by families to the point of over 20 percent of the children in most provinces having dropped out of school.

119. Teachers, in turn, are becoming less interested in teaching as a profession. As they abandon the profession, the quality of teaching will be affected, further contributing to the increasing disaffection with the value of education among parents and young people. Finally, if schools can not physically open because of inoperable heating systems or unavailable funds to pay for energy and heating, the collapse of vast portions of the system will be inevitable.

120. Priority, then, must be given to maintaining a certain minimum level of basic education services. Beyond that, priorities must be set as to which elements of the system will be maintained at high quality. If all elements are allowed to deteriorate, none will be effective or efficient.

121. Whatever the priorities may be, they must be realistic in the current social, economic and political environment. It would probably do little good to try to enforce compulsory formal education among the cattle breeders who feel that they need their male children to manage recently privatized herds. It might make sense, however, to turn over some of the teaching and other resources becoming redundant with diminished school enrollments to other purposes. Two alternatives would be to introduce a system of nontraditional delivery of formal eduction and to promote a parallel program of nonformal continuing education program designed to be convenient for school drop-outs. Similarly, it does not appear to be economically feasible to continue operating all of the boarding schools. If so, perhaps some of the resources saved by cutting back of boarding schools might be put into increasing the quality of school resources that are left and into developing a high-quality nonformal education program for cattle breeders' children, and other dropouts and young people who need skills training.

122. The question of priority-setting will be discussed further in the sections that follow. Such priorities must be in the context of both internal and external efficiency factors. In essence, the education system must be efficient in using resources in achieving its goals (internal

efficiency) and its goals must be consistent with needs of the social, economic and political sectors of Mongolia (external efficiency).

Existing Policies

123. Current official policy seems to assume that former levels of education will be maintained, and there are numerous declarations at international conferences that Mongolia supports Education for All goals that suggest gradually increasing enrollments through the year 2000. In fact, Mongolia is regressing on virtually every Education for All goal, including adult literacy, enrollments in kindergartens, primary school, middle school and secondary school.

124. As noted earlier, some retrenchment is probably inevitable under present financial constraints, and current de facto policy seems to be to simply reduce educational budgets given to the aimags and somons and let the provincial and local authorities fit the educational services offered to the budget available. Most local authorities seem to be cutting back first on kindergartens, then on boarding schools for cattle breeders' children, then on grades nine and ten in somon schools, leaving only grades one to eight.

125. It would be appropriate for the government to articulate the policy of retrenchment publicly so that parents, teachers, students, the business community and others in the community fully understand what is going on. Further, it would be appropriate for the government to articulate a policy of basic support levels below which it does not intend to let the education sector descend. Essentially, how much must aimags and somons trim their educational establishment in order to be assured of adequate support of what is left? If the aimags and somons were to be assured of enough support to continue a trimmed system at high quality, these communities might regain confidence in the government's intent to continue a high quality, if somewhat leaner, educational system.

126. If such a policy (or some alternative involving reduced resources for formal schools) were to be made clear, creative programs would have to be initiated to offer alternative opportunities to young people who drop out or are pushed out of the leaner school system. Again, a number of studies, conferences and pilot programs in Mongolia have proposed or introduced nonformal, adult and continuing education efforts under the auspices of several ministries, including the Ministry of Science and Education, the Ministry of Labor and Population Policy, the Ministry of Health, the Ministry of Food and Agriculture and others. But as yet there is no articulated government policy on the issue of nonformal, adult and continuing education, the clientele these must serve in the new Mongolian context, and the coordinated resources that must be provided if all such schemes are to work.

127. If a government-wide policy on nonformal, adult and continuing education were to be adopted, resources for the development, tryout and reproduction of nonformal, adult and continuing education materials for the various programs could be concentrated in one center to serve all programs; field agents of the various ministries could help one another in meeting their various goals; under-employed and unemployed school teachers could help

manage evening and weekend programs in school facilities; many different kinds of education and training resources could be made available to those missed by the reduced formal education structure.

128. Other policy issues that must be resolved include that of teachers' salaries. Similarly, salaries of specialists involved in the system, such as those in the Institute for Curriculum and Methodology, need examination. Specialists of the Institute working in the aimags on research and inservice training earn less than the teachers they train. These issues, of course, are related to the overall problems of civil servant salaries and must be resolved in concert with the broader public service issues.

129. Textbook manufacture and distribution is an area needing policy analysis and formulation. At the moment, various schemes are being discussed for building up Ministry of Science and Education printing facilities; for strengthening the government printing press to handle textbook work better; for encouraging the private sector to handle textbook printing and publishing. Lack of a long-term policy on textbook manufacture and distribution is serious in that textbook production, manufacture and distribution is an industrial enterprise requiring careful management and professional skills if it is to be done efficiently and effectively.

130. Equipment and skilled personnel capable of manufacturing durable texts are expensive and must be used full-time to be economical. Few textbook (or other) publishers in developed countries maintain their own printing plants; their demands are seasonal and it is much more economical to contract with printing plants that keep busy with a variety of jobs in order to make full use of their facilities. Major printing establishments in some countries run two or three shifts in order to reduce the amortization on equipment and facilities that must be charged against each job.

131. Policy on the training of educational administrators is the subject of a three-year study by the Educational Development Institute. In the meantime, the Pedagogical Institute is preparing for the offering of courses in educational administration at the advanced levels of teacher training and within the inservice programs of its Institute for Curriculum and Methodology. All parties concerned should discuss policy in this area and decide on interim guidelines while long-term policy is being debated. Also, a policy might be considered whereby inservice teacher and administrative training would be considered a part of the education budget allocated by the Ministry of Finance.

132. Under the present structure of the education system, the Ministry of Science and Education is more and more a policy body and less and less in charge of administration of the school system. Clearly, one of its major tasks in the short term will be to develop and clearly articulate policies for the development and support of the education sector that will be understood by the various communities in Mongolia.

Plans

133. Planning seems to be more project-oriented than goal, structure

and process-oriented. The nonformal education project for Gobi women and their families, for instance, is housed under the foreign affairs office of the Ministry of Science and Education, rather than under the Department of Pre-School and General Secondary Education, where there is both a nonformal education officer and a rural education officer. An alternative, of course, might be to establish a unit (department or inter-departmental coordinating body)for nonformal, adult and continuing education in the MOSE. If the government wishes a program in nonformal, adult and continuing education, it should have a set of goals, a plan and a structure and a process to achieve them. Within this plan and structure, projects such as to Gobi Women's Project would have a place, but as supportive of the long-term plan and structure.

134. In developing plans, the MOSE must, in essence, be able to show to the Khural and the public a picture of how it sees the education system progressing in the short, medium and long term, and what the programs, structures and processes are that will get it there. Then, it can make a case for the legislative and donor support necessary to achieve the goals. In this way, donors can be shown that they will be making a contribution to sustainable efforts. Projects come and go and if they are not part of an established plan, and part of government programs, structures and processes inherent in the plan, there is usually not much left when the external funding ceases.

Constraints

135. The greatest overall constraint obviously is the economic crisis that Mongolia is facing. Within this crisis is the uncertainty as to what resources are to be available to the education sector in the short and medium term. Although the National Plan of Action for Education for All and the National Programme of Action for the Development of Children in the 1990's outline goals, neither the Ministry of Science and Education nor the government and legislature have set clear priorities as to what must come first and what may be postponed. Priorities in a field such as education, involving so many social, economic and political interests, are not easy to set. In an era of severe resource constraints, however, some priorities must be made clear so that quality can be preserved in elements of the system, while those elements of lesser priority can be trimmed. Otherwise, morale in the total system will deteriorate and a point may be reached where there is a serious system collapse.

136. As these priorities are set, alternative strategies for reaching young people and adults with appropriate education and training must be examined. Not only will certain elements of the current system need to be trimmed, but innovative approaches must be found to achieve priority goals using new approaches.

137. For instance, it will be politically and socially unacceptable to allow the educational levels of the next generation to fall dramatically below current levels. At the same time, the system can not, with current resource constraints, continue operating in the traditional modes at the same level as in the past. In addition, many families are electing to take their children out of school for a variety of reasons. Accordingly, some of the resources saved through trimming of the traditional system should be invested in innovative programs to reach school dropouts and non-attenders with appropriate educational programs.

138. Mongolia has been sensitized to the possibilities of nonformal, adult and continuing education programs through a variety of workshops and seminars, and the National Program of Action for the Development of Children, signed by the Prime Minister on May 27, 1993, advocates the development of nonformal, adult and continuing education activities in a number of areas across the various sectors of the government. In addition, the Educational Development Institute of the Ministry of Science and Education has embarked on a three-year study of continuing education, a concept that is usually

considered a sub-set of nonformal and adult education. What is needed now is a national plan of action for nonformal, adult and continuing education, geared toward remediating some of the negative effects of downsizing the formal education system, and geared toward supplementing the formal education system in meeting priority goals for the future. For instance, the trend of some families (especially rural families) to withdraw children from school (and the tendency for some to be pushed out because of closure of boarding facilities and the upper grades of some schools) will create a large number of semi-literate and undereducated young people. Nonformal, adult and continuing education programs, then should be developed focused on how to reach these young people with appropriate educational opportunity in a cost-efficient manner.

Analytical Topics

139. Equity. Mongolia has had remarkable success in assuring equity in terms of access to education on the part of both boys and girls and both urban and rural populations. Until recently, enrollment in early primary education (grades one through three) was well above 90 percent in both urban and rural and among both boys and girls. Available information would suggest that achievement levels have been roughly equal in all parts of the country.

140. In addition, the government traditionally has assured that spaces are reserved at higher levels for students from all provinces, thus balancing out the environmental advantage that urban children have. Further, with boarding schools for children of cattle breeders, the government has assured that all children can benefit from compulsory education, currently eight years of schooling.

141. The situation appears to be changing rapidly. As noted repeatedly in other sections of this report, dropouts have been increasing dramatically during the past three years in all regions with the exception of Ulaanbaatar. In addition, with the closing of boarding schools and the reduction of many ten-year schools to eight in rural areas, the rural children will not fair as well in terms of education in the future as they have in the past.

142. The educational future for rural boys is particularly bleak. In the early years of schooling, boys and girls are about equal in number. As one moves up the scale, however, the girls clearly have the edge. In many rural areas, by the time the cohorts reach seventh and eighth grades (the final years of compulsory education), the girls outnumber the boys by two to one. At the secondary level (grades nine and ten), the situation is even more dramatic with the girls in some aimags outnumbering the boys more than four to one.

143. Even so, girls in rural areas do not fare nearly as well as girls in urban areas in moving up the educational ladder. Nor do girls from nomadic families fare as well as girls from settled families, even in rural areas. Table 4.11 compares the education levels attained by settled and nomadic women in selected rural provinces with the education levels attained by adult women in Ulaanbaatar. The differences are sizable. For instance, 9.5 percent of adult women in Ulaanbaatar have a higher education degree; the

highest percentage in a rural aimag is 2.3 percent among the settled women of the South Gobi province. About 33.4 percent of Ulaanbaatar women have either a complete secondary education or specialized professional education at the secondary level while only about 10 percent of the women in most of the rural provinces, either settled or nomadic, can boast of this level (East-Gobi is an exception with about 17 percent of the women with this level).

144. Table 4-11 shows that differences between settled and nomadic rural women are clear, with the settled women, for the most part, with a usually small but distinct advantage. Nonetheless, the data do show that it is likely that most nomadic families have one or more women in the family with at least eighth-grade education. At least a fifth of the nomadic women report that level of education or better. If a nonformal education system of reaching rural dropouts through home study materials is adopted, most rural and nomadic families will have someone available to help the children use the home study materials.

145. In general, rural aimags without a major city and an industrial base have considerably less total per capita school enrollment than those with such attributes. Table 4-12 shows the percentage of the total population in each aimag enrolled in school (grades 1-10) as of January 1, 1993. Dornod and Ulaanbaatar, both with an urban, industrial base, lead in enrollment, with over 18 percent of the population in school. Bayan-Ulgyi and Uvurkhangai bring up the rear with less than 14 percent of the population enrolled in school. With the higher dropout rates in the more rural aimags, the disparity in enrollments will increase. Clearly, an alternative method of delivering primary, middle and general secondary education is needed in rural areas if the relatively high levels of education of the past are to be maintained and if the rural areas are not to lag further and further behind the more urban areas in the future.

146. There are about 20 ethnic groups in Mongolia, though the Halhs make up an estimated 77.5 percent of the population. Mongolians make up over 80 percent of the population. Kazakhs (in the far west of Mongolia) make up about 5.3 percent; Dorvod, about 2.8 percent; Buriad, about 1.8 percent; Dariganga, 1.5 percent; Zachin, 1.3 percent; Urianhai, 1.2 percent; Oold, 0.6 percent; and Torguud, 0.6 percent. There is little evidence of discrimination in education in terms of minorities, other than the fact that a number of them are located in rural provinces such as Khovd in the west and Dornod in the east that share the same educational problems as other rural provinces. At the same time, there has been some migration of ethnic minorities from Mongolia to other countries nearby. Several thousand Kazakhs have reportedly left Mongolia during the past two or three years.

147. Many young dropouts are swelling the numbers of street children, some of whom seem to hop trains and move from town to town and city to city. There is much current debate as to what can be done to bring these children back into the mainstream. The two principle approaches discussed seem to suggest either rounding them all up to be placed in secure residential schools in a rural area of greater Ulaanbaatar in order to separate them from the mainstream children or to give them housing and counseling and place them in schools with the rest of the school population. However the issue is resolved, policy toward the educational future of these children must be established.

148. Equity issues, then, will increasingly be concerned with differences between numbers of students who continue in urban versus rural areas, differences in the numbers of boys and girls who continue to the upper grades, different educational needs of minorities, and the educational needs of street children. In the Mongolian context, it may be appropriate, as rural herds are privatized, for families to take their young men out of school earlier than before. However, other means of reaching these young men with educational opportunity must be found. Alternate ways of reaching other dropouts and street children must also be found. Similarly, with more and more children from rural areas dropping out, access to higher levels of education may be relatively more accessible to urban young people in the future. Means must be found to maintain access of rural young people to higher levels of education.

149. Internal Efficiency. Categories of major educational expenditures are dramatically different in Mongolia from other countries in that heating and energy in the bitter winters take up a sizable portion of the budget. Teachers, in turn, take up less than half the budget, in part because of low salaries.

150. There is a reasonable high ratio of staff to teachers - roughly one to one. These are low-paid people necessary for the upkeep of the buildings and grounds, cooks and other help for the boarding facilities (kitchens, dining halls, dormitories, laundry), and accountants and other administrative personnel. Actual school administration is fairly lean.

151. There is a somewhat lower student-teacher ratio than in many countries. Such ratios are reported to be around 20 or so to a teacher in general education in Ulaanbaatar. In rural areas, lower ratios are often a result of low population density in areas served by the school. In Ulaanbaatar, however, there may be options of consolidating schools if a higher student-teacher ratio is sought. Many schools, of course, have classrooms of limited seating capacity, so this option should be approached with caution.

152. No fees are charged at any level of general education (through tenth grade), but kindergartens are now charging half the cost of food to the parents. Parents normally buy their children's texts, and this can be a sizable portion of their salaries if several children are in school. Most schools appear to have multiple copies of texts in the library for loan to students, and this should be encouraged; otherwise it is possible that the cost of books will contribute to the drop-out rate.

153. School administration and management follows a kind of public administration pattern and school principals and state education officers are not trained in educational administration and management. In the long run, the internal efficiency of the system can probably be improved with increased administration and management training.

154. As students drop out, especially in rural areas, there will increasingly be under-employed teachers. One way to increase internal efficiency might be to turn these teachers into nonformal, adult and continuing education coordinators, charged with getting nonformal, adult and continuing education packets to students, organizing evening and weekend sessions for such students, and otherwise helping to supplement what goes on in the formal school. Rural families and nomadic families in Mongolia are reasonably well educated and the nomads maintain economic and social contact with towns and villages. A nonformal, adult and continuing education system can use existing service networks to help in program delivery without having to set up costly additional service organizations.

155. Some attention should be given to a more rational organizational structure within the Ministry of Science and Education. Externally-funded projects should not be managed outside the administrative unit responsible for that kind of activity. Projects should work within the priorities set by the Ministry and should fit within rather than compete with ongoing activities.

156. One way of reducing costs of schools might be to explore ways of conducting classes in premises other than the high ceiling, heat inefficient buildings now generally used. One option worth considering, for instance, might be a family school whereby nomadic families (some of whom travel and work together) would conduct a kind of family school in a large ger (traditional Mongolian transportable yurt) that they would carry with them. As virtually all nomadic families have a number of graduates of eighth grade, and many have graduates of tenth grade or beyond, they could conduct primary classes for children of the group if they had appropriate, easy to use teaching materials. This is one means of providing equivalent formal schooling but by nontraditional means.

157. One possible way of reducing costs would be to close schools for part of the winter when heating costs are high, and substitute open time during the warm summer months when heating is not necessary. Since the rural population needs its children in the short summer for economic activities, however, and the urban population similarly has summer activities that would conflict with schooling, such an approach does not seem feasible. A related option, however, might be to open ger schools in the winter in areas where there are small enrollments, closing the heat inefficient school buildings that now exist in those areas.

158. Another approach might be to shorten the school year. However, the Mongolian schools are open about 180 days a year (average or even light for many countries) and a complete secondary education is only 10 years, versus 12 in many other countries. To further reduce the school year would be a questionable tactic.

159. As many of the schools cut back from ten to eight-year schools and give up their boarding facilities, a careful examination of staffing patterns must be undertaken. It is likely that considerable savings can be made by reducing support staff, though the impact of this on an already unstable economic climate with high unemployment must be considered.

160. Further cuts in library materials, teaching supplies and maintenance seem unwise - there is currently little or nothing in these accounts now. For maintenance of anything approaching an adequate internal efficiency, budgets in the areas of teaching materials and supplies must be increased rather than decreased. If the schools are to function at all in the future, increased attention must be given to matters of maintenance, both of the buildings and of the electrical and heating systems. If the schools do not receive such attention soon, some will be unusable within a very short time (some may be uninhabitable in the coming winter of 1993-94).

161. External Efficiency. There is a general feeling that the education system is still, to some degree, producing the kinds of people appropriate under the social, political and economic structure prior to 1990. Although there is much more time in the curriculum for practical arts (pre-vocational) and the local authorities are encouraged to adapt up to a third or so of the curriculum to local needs, many teachers and administrators are not clear as to how to implement these changes.

162. Similarly, it is clear that some families are not finding education useful enough to keep their children enrolled. This is especially so for young boys in rural areas, although the boys are increasingly dropping out in urban areas as well. Any ways in which the school program can better meet the needs of these families and their children should be explored.

163. With apparently fewer and fewer jobs, at least for the time being, in the modern sector, the external efficiency of the system in preparing young people for rural and traditional sectors should be examined carefully. At the same time, young people from both urban and rural environments need career advice and counseling to help them see the employment possibilities of the future and the educational routes that will help get them there. Class teachers perform some counseling functions and they might well be trained, inservice, to undertake this kind of career counseling service.

164. Summary Analysis. In summary, the education system will continue for some time to shrink in terms of enrollments and in terms of facilities offered (boarding schools, ten-year schools and kindergartens will decrease in number, for instance). The number of children not in school will increase dramatically. Illiteracy rates will climb and semi-literacy will increase, especially among rural populations. The current generation of children will be less educated than their parents, certainly an unusual situation.

165. Ways must be found to slow down the erosion in the quantity and quality of general education offered. Attention must be given to curriculum and materials adapted to current needs; priorities must be set so as to use scarce resources in a focused way and so as to assure that the entire general education system does not collapse; nonformal, adult and continuing education strategies must be introduced to reach school dropouts with education and training appropriate to their life styles; educational administrators must receive training in how to manage in times of austerity; guidance and counseling services must be established to help guide young people and their families as they make educational choices and as they choose career options.

166. All of these things require programs of action within which various activities can contribute to the attainment of program goals. Some suggestions as to what these programs and supporting activities might be appear below.

SUGGESTED PROGRAMS AND ACTIVITIES

167. A national program of action in kindergarten and general education should be developed. This would involve examining all of the issues above, the setting of priorities and goals for the future that are realistic and attainable, and devising programs, actions and activities necessary to achieve these goals. Part of the plan must be a clear definition of who will be responsible for what actions and processes necessary to implement the various programs of the plan. Some of the sub-programs and activities that might be part of the national program of action include the following:

168. A standard-setting policy study should be initiated to establish floors below which the quantity and quality of educational services will not be allowed to fall. These targets should include enrollment indicators and an outline of minimum general educational services that all somons must have. A kind of simulation model, based on similar models used by the World Bank and UNESCO, might be developed for Mongolia to show the implications for the future of investment options in various levels of education. Included should be studies of standards in terms of achievement somewhat along the lines of those advocated by the Inspectorate Board. Achievement standards, however, should not be rigid and for the time being, attention should be given to maintaining some respectable level of quantitative standards (enrollment levels, regional equity, male/female enrollments) rather than spending an inordinate amount of time or resources in developing external academic standards. Such issues, important in the long run, can surface again when the current crises in financial support for basic educational services are resolved.

169. Academic achievement standards, for the time being, should be criterion- rather than norm-oriented. Essentially, a significant element of teaching materials developed for the schools should be criterion-referenced tests that show the teacher and the student how much of the material in the textbooks the students have learned and what they have not learned. Such

criterion-referenced tests, designed to assist in learning, can help teachers improve instruction and the students to improve their performance. External, norm-referenced examinations simply turn the curriculum into an examination-oriented curriculum and may motivate a few students, but rarely help improve relevant teaching and learning for the majority of students.

170. A carefully phased program should be devised for the development of curriculum materials that reflect the new curriculum goals, including materials in the practical arts that are adapted to the needs of each region. Current curriculum development activities should be considered a part of the plan, and individual projects that now exist and that will be added in the future should be considered part of the program. The six to eight specialists of the Institute for Curriculum and Methodology that are in each of the aimags should work with local schools, teachers and parents in the design of locally relevant materials to supplement the national materials in core subjects being done primarily in Ulaanbaatar. The various projects that have been developing teaching materials for English and other languages should be rationalized and if different approaches are to be encouraged, some policy established as to where one approach is to be used and where another is to be used. Needs for curriculum materials in nonformal, adult and continuing education should also be considered within the curriculum development program.

171. A program for preservice and inservice training of educational administrators should be developed. Currently, several government units and international agencies have taken interest in the problem of improving educational management. With limited resources, fragmented and mutually isolated activities in this area will not be internally efficient. A program must be devised that allocates appropriate roles to the Pedagogical and other universities, to the Institute for Curriculum and Methodology, to the Ministry of Science and Education and its Inspectorate Board, and to other appropriate institutions. When the program has been designed, appropriate activities within the program may be attractive for funding by international groups.

172. A program to assess maintenance and upkeep needs of school facilities nationwide should be initiated. If school facilities are allowed to deteriorate beyond repair, even greater cost will be incurred in the future to rebuild the system. Such a study might be initiated with the Ministry of Construction and Urban Development. The study should lead to a plan of activities with priorities set as to what must be done immediately to save schools on the brink of collapse, what must be done to preserve the structural integrity of those beginning to deteriorate badly, and what must be done as minimum maintenance in those schools that are in reasonable condition.

173. A program of retraining class teachers to act as educational and career counselors should be initiated. The children in each grade of school have one class teacher to whom they turn for advice and help when needed. These teachers need inservice training in career and educational counseling. This will require collaboration with the Ministry of Labor and Population Policy and others in order to develop materials on possible career options and on educational routes that can take young people in the direction of

careers that interest them. These materials and the inservice training, in turn, must be updated regularly. Perhaps a unit to manage this activity might be organized within the Institute for Curriculum and Methodology of the Pedagogical University. In addition, thought might be given to inviting the Inspectorate Board to help in this as well as other inservice training efforts. Of the moment, inspectors are thought of as having a coercive role, punishing teachers and administrators if they do not follow the rules. This role might be balanced with a constructive role within which inspectors help administrators and teachers embark on new programs and activities that will improve the school environment and the relevance and effectiveness of the instruction.

174. An in-depth study of the need for kindergartens in both rural and urban areas should be undertaken. This should include an examination of the cost of running kindergartens, where economies can be achieved, whether or not rural parents have the same desire and need for kindergartens as urban parents, and whether or not alternative, more cost-effective approaches to offering child care for working parents can not be found.

175. A national program of nonformal, adult and continuing education is needed. Already there are activities that contribute to such a program and there is a nonformal education officer in the Department of Pre-School and General Secondary Education at the Ministry of Science and Education. The Gobi Women's Project has established elements of a possible infrastructure that might serve the national program. The Educational Development Institute three-year study of continuing education can contribute to national program formulation. Health and nutrition education projects of the Ministry of Health are activities that contribute to the national program. Activities of the National Children's Center and affiliated units (International Children's Camp, Children's Center in Ulaanbaatar, other centers in other aimags) contribute to a national program of nonformal, adult and continuing education. The inservice teacher education program of the Institute for Curriculum and Methodology of the Pedagogical University, and its six to eight methodologists in each aimag, has activities that should be part of a national program. Other ministries have similar activities underway as do a number of private organizations, including cooperatives, that have continuing education and training activities underway.

176. The first step toward such a plan would be to inventory the many programs and activities that Ministries and private organizations have for reaching, influencing, teaching and training children and adults through means other than formal schooling. Resources of these activities could then be catalogued and ways of combining resources and of providing common services needed by all could be examined. Probably one activity needed is a national resource center for nonformal, adult and continuing education so that resources necessary for the planning and production of nonformal, adult and continuing education materials could be available to all programs and experience of the various programs shared.

177. Such a national program of nonformal, adult and continuing education should include a broad range of interests. Of special concern, however, in the general education subsector will be how to reach school dropouts with continuing education. One alternative might be to provide home study materials for children of nomadic families, easy-to-use self-study materials with clear instructions for parents as to how to guide the children through the materials. Most nomadic families have one or more members educated at eighth grade or better and these could help the children with their home study materials. The children, in turn, could be encouraged to attend workshops arranged from time to time in somons near where they are located for help from trained teachers and for evaluation of their progress. Although such home study materials would be most useful for the nomadic families, other families in rural or urban areas who for one reason or another take their children out of school may find the materials useful.

178. Such materials could be distributed in a number of ways. There is a well-developed system whereby nomadic families interact with consumer cooperatives that exist in most somons, and the materials could be distributed through these. Alternately, or additionally, they could be sent through existing schools, many of which keep track of nomadic families and their whereabouts.

179. Other elements of a national program of nonformal, adult and continuing education, of course, would involve innovative ways of attracting dropouts into evening classes in somons and cities, possibly using space and teachers made redundant by the shrinking of the formal education system, and by using youth centers under the National Children's Center in the Ministry of Labor and Population Policy. In addition, retraining of specialists, trades people, cooperatives managers, and continuing education programs of all kinds should be considered part of the national program.

180. Other options should be explored for structural reform of the way primary school education is delivered. One option might be to extend the integrated classroom upward through the sixth grade (currently, beginning in the fifth grade, students go to subject teachers in subject-specific classrooms). In large schools, there would be one teacher per grade, but in smaller schools, multi-grade classrooms would be possible. These might include family schools in rural and cattle-breeding regions of the country. Several families could build a large ger for a multi-school classroom of fifteen or so children and one teacher could be assigned the school to cover several grades. In cases where several cattle-breeding families travel together, the multi-grade ger classroom and its multi-grade teacher could

travel with the families. If home study materials are available (see nonformal, adult and continuing education options, above), these could be used in the multi-grade classrooms.

181. The idea of using less well-trained teachers as teacher's aides might be explored. Well-trained and experienced teachers would handle larger groups of children, perhaps two classrooms, while a teacher's aide would supervise classroom activity under the supervision of the experienced teacher. Options such as these, of course, would require new kinds of teaching and learning materials to facilitate such approaches. In addition, the preservice and inservice teacher training programs would have to be modified to prepare teachers capable of managing such a system. Experience with this option has been mixed in countries where it has been tried, and only those within the Mongolian environment can assess its possible application here.

182. A study should be undertaken of the textbook and teaching materials manufacturing capacity of the government printing system and of the private sector. This should lead to a plan for the development of the printing industry, both governmental and non-governmental, in Mongolia, and a clearer understanding of the logistics necessary for the manufacture of textbooks and teaching materials. The plan should recognize that textbook and teaching materials manufacture is an industrial process and is not efficient unless examined in conjunction with the entire printing and book manufacture environment of a country. Small reproduction facilities for pilot editions of teaching materials are often needed by educational institutions and publishing houses, but once the materials are ready for manufacture, they must be handled by a printing industry that can expeditiously and cost-effectively produce and package the materials. The difference between publishing and printing must be clearly understood. A publishing house plans the publications, contracts with authors, edits and formulates the layout of the publications, decides on print runs and pricing and distribution strategies but rarely has its own printing house. When publishing houses have manuscripts ready for printing, they then contract with printing establishments for their manufacture. The printing industry, both governmental and non-governmental, however, must be capable of responding to the needs of the textbook and teaching materials publishers, and this requires a plan of action to develop the industry.

183. A computerized information bank of programs, activities and projects having to do with educational development initiatives such as those suggested above is needed. Of the moment, activities and projects exist in many organizations that impact on the general education subsector, many of these supported by externally financed projects. If a national program of action is to be developed that has focus and that is more than the sum of its parts, better information must be available on a continuous and updated basis as to who is doing what to whom, using

what resources, and to what desired effect, in the various education subsectors.

184. The above list of suggestions is not exhaustive, but is included to illustrate the kinds of activities that might be in a national master plan of EHR reform. Initiatives have already been taken in many of these and other areas. Competent and motivated professionals are discussing these issues throughout government and in many private organizations. The challenge now is to focus these efforts within a national program that is more than the sum of its parts and that all Mongolians can understand and support.

CHAPTER 5

HIGHER EDUCATION

1. Higher education is probably the most rapidly changing segment of the education sector in Mongolia. In less than three years, the higher education sector has been changed from an essentially single, multi-purpose university into a decentralized set of very specialized universities, each with its own mission and resources. At the same time, a number of steps have been taken to bring the research enterprise, formerly housed primarily in independent institutes of the Mongolian Academy of Sciences, directly under the umbrella of the universities.

2. There is also an ongoing attempt to "rationalize" the system by bringing several regional specialized secondary and postsecondary "colleges" under the administrative oversight of the university-level institutions. All of this has been accomplished primarily by governmental law and regulation rather than through a systematic planning and design process. Consequently, there are serious questions about the extent to which this rapid change has actually resulted in desired system simplification and improvement as opposed to making it more complex and fragmented.

3. Accompanying these changes in the general structure of higher education in Mongolia has also been a serious economic crisis due to the country's shift from a command to a market economy and its attempt to become part of the international economic community. For higher education, in particular, this has meant that it is no longer possible for the government to assume responsibility for fully funding all costs of higher education. Consequently, beginning with the 1993-94 academic year, all students in higher education will have to pay tuition fees for the first time. Further, the high costs of scientific equipment and instructional materials along with withdrawal of resources formerly available from Russia have caused serious problems for the delivery of high quality instruction as well as for conducting research.

4. This chapter provides a comprehensive description of the higher education in Mongolia in an effort to identify important issues and concerns that have developed during this recent period of rapid change. The first section outlines the contemporary historical background of higher education in Mongolia, outlining the general patterns of change as well as the more recent policy decisions that have affected its development. In addition to a brief description of each university-level institution, there is some discussion of regional "colleges" as well as the emerging private sector of higher education. This section includes consideration of the organization and management structure of the higher education sector. Information is also presented about student enrollment, staff, curriculum, facilities, and costs. The chapter concludes with an analysis of system efficiency, equity, policies, plans, constraints, and potential along with identification of several important issues and suggested options for

dealing with them.

STATUS

Historical Setting

5. The first nationally funded institution for formal higher learning, the Mongolian State University, was established in 1942 in the capital city of Ulaanbaatar. Modeled after universities in Russia, it had three departments: pedagogy, medicine, and veterinary medicine. The primary emphasis of this new institution was teaching in the departments represented. Most of the limited advanced research was done under the auspices of the National Committee of Science which was not directly affiliated with the university. In order to meet the country's increasing needs for teaching personnel, the State Pedagogical Institute was founded in 1951 as a specialized secondary school. It was reorganized into the State Pedagogical College in 1957, becoming an institution where teachers with higher education were trained.

6. Even preceding the 1921 Mongolian revolution, there had been a government agency for overseeing scientific research. By the mid-1950's, there was a joint recognition by this body, the National Committee of Science, and researchers in the university of the need to establish research programs in several of the academic areas represented among the faculty teaching at the Mongolian State University. Thus, the first major reform of Mongolian higher education involved moving faculty at the Mongolian State University into partially autonomous research institutes where both teaching and research would take place but which would emphasize research. In 1958, the zoological-veterinary medicine faculty at the Mongolian State University was the first to transformed into the Agricultural Institute.

7. Even though the National Committee of Science was amalgamated with the Mongolian State University in 1959, this structure lasted only until 1961 when the Mongolian Academy of Sciences was founded, thereby perpetuating the pattern of concentrating advanced research in the Institutes of the Academy of Sciences rather than in the university. The Academy of Sciences also controlled awarding of the highest scientific research title, the Doctor of Science degree. Continuing this trend toward faculty autonomy, the Medical Institute was formed from the medical faculty of the State University in 1961. The polytechnical faculty was established as part of the State University in 1969 and became the Polytechnical Institute in 1982. The Russian Language Teachers' College, established as part of the State University in 1979, became the independent Russian Language Institute in 1982.

8. There was also some effort to establish higher education institutions in aimags with sizable populations located far from Ulaanbaatar. One example of this is the training institution for

secondary school teachers, the Pedagogical Institute at Khovd, located near the western border of Mongolia. Other examples were the Teachers Colleges in Dornod and Arkhangai, the Economics College in Zavkhan, and the Agricultural Colleges in Khovd, Darkhan, and Bayanchandman. Most of these institutions were originally technical or specialized secondary schools. Only a few were authorized to award certificates considered the equivalent of academic degrees. Under this system of higher education, all costs were fully subsidized by the Mongolian government which, in turn, received subsidies from the Russian government in the form of instructional materials and scientific equipment.

9. The strong Russian influence on Mongolian higher education continued until the break-up of the Soviet Union. Legislation for the second major reform of higher education, passed late in 1990, mandated major restructuring. Four institutes that had been parts of the Mongolian State University became independent universities in 1991: the Mongolian Agricultural University, the Mongolian Medical University, the Mongolian Technical University, and the Mongolian Pedagogical University. The Russian Language Institute expanded to include other languages, was renamed the Foreign Language Institute, and became part of the Pedagogical University. The arts faculty at the Pedagogical University became the Institute of Art.

10. At this time, the Mongolian State University was also renamed the National University of Mongolia (NUM), and the Pedagogical Institute at Khovd became a branch of it. The National University has had a faculty for the preparation of secondary school teachers since its founding, so bringing the Khovd Pedagogical Institute within NUM rather than in the Pedagogical University was not unreasonable. Also, from the perspective of the NUM, the Khovd region was seen as an appropriate place for research in such subjects as biology, geology, geography, ethnography, and Mongolian Studies.

11. A new public higher educational institution was created in 1991 by combining a set of institutes from the Academy of Sciences in Ulaanbaatar into the Mongolian Institute of Technology. In addition to the National University which had been the only university authorized to award advanced scientific degrees, all of these newly designated universities were also authorized to begin developing masters and Ph.D. programs.

12. Two degree-granting colleges designed to prepare students for various business, commerce, and finance positions in the developing market economy of Mongolia were also established in Ulaanbaatar 1991: the College of Commerce and Business, and the Economic College. Two special purpose higher education institutions also received a "university" designation in the 1990 higher education law: the Military Institute became the Military University, and the Art Institute became the University of Art.

13. In addition to the administrative shifts already mentioned, several regional specialized secondary schools were incorporated into the higher education sector and received the designation of "college"

in the 1990 legislation. In the interim, most of these institutions have been brought under the administrative umbrella of a Mongolian university. The Transportation Institute, formerly a school run by the Mongolian Ministry of Roads, Transportation, and Communication, became part of the Technical University. A branch of the Technical University was also established in Darkhan. A specialized secondary school in Zavkhan called the Economic College became a branch of the National University. Medical Colleges in East Gobi and Gobi Altai were brought under the Medical University.

14. Several institutes and colleges for the preparation of teachers that were located in Ulaanbaatar were brought under the umbrella of the Pedagogical University, including: Teachers College, Kindergarten Teachers College, Music Teachers College, and the Institute of Physical Education. The Institute of Foreign Languages in Erdenet, originally founded as a branch of the Foreign Language Institute, also became a branch of the Pedagogical University. Discussions are currently underway with the Pedagogical University about bringing two regional teachers colleges (at Arkhangai and Dornod) under it; and with the Art University about bringing the Music College, Culture College, and Arts College under it. Finally, the Agricultural Colleges at Darkhan, Bayanchandman, and Khovd were designated branches of the Agricultural University. Table 5-1 presents a list of all public higher education institutions in Mongolia, with the size of faculty and enrollments where available. Those whose enrollments are totally "specialized secondary education" have received the designation of "college" but have not upgraded their programs.

15. Yet another important result of the 1990 education reform was legislation enabling the establishment of private higher education institutions, with the first of these institutions being founded in 1991. All private institutions of higher education must receive operating approval from the Ministry of Science and Education. Table 5-2 contains a list of the eighteen currently authorized private higher education institutions and their areas of emphasis. Five additional institutions have applied for authorization.

16. A further reform proposed in 1992 was a change in the degree structure that would shift to an American-style pattern (e.g., bachelors, masters, and PhD). While this change has been approved, institutions must receive authorization for their new degree programs from the Ministry of Science and Education before they can begin awarding them. The bachelor's degree will require four to five years of post-secondary education (depending on the specialization and the institution); and the masters degree will require another two years. A graduate student who continues with doctoral study will be required to study at least three more years, and write a dissertation in order to earn a Ph.D. Several more years of study, research, and a major piece of research will be required to earn the Doctor of Science (D.Sci.) degree. For students who completed degrees under the old system, the following equivalencies are being used to classify different levels of study: (a) bachelors degree = four years of full-time study and a diploma; (b) masters degree = five years of full-time study; Ph.D. degree = two to three years beyond the masters; and Doctor of Science

(D.Sci.) = two to three years beyond the Ph.D. All post-graduate students except for those in medicine must earn the Ph.D. prior to beginning study for a D.Sci. degree.

17. There are some, particularly members of the Academy of Sciences, who are adamant about maintaining the old Doctor of Science degree as a post-PhD degree in the belief that it is a higher qualification than the PhD that should be retained as a symbol of the highest scientific preparation. Some fields, primarily technical ones, have also retained an intermediate certificate/diploma for students completing only three years of study. Table 5-3 shows the anticipated duration of study for each proposed degree in various fields.

18. A second law passed in 1992 sought to incorporate a research mission into Mongolian higher education institutions by bringing the Academy of Sciences Institutes into a much closer relationship with the universities. The Ministry of Education was renamed the Ministry of Science and Education and a new Department of Science and Technology was established. The pattern of financing the Academy of Sciences was also changed, with the newly created Department of Science and Technology responsible for approving funding requests. This law also provided the impetus for developing closer relationships among the universities, the research institutes, and enterprises.

19. Finally, with the beginning of the transition to a market economy in Mongolia, the government was no longer able to subsidize the full costs of higher education. Consequently, a tuition structure has been implemented. Beginning with the Fall Semester of 1993, all students in Mongolian institutions of higher education will be required to pay tuition. Those students who are studying in specializations that have been identified as manpower needs will be eligible for loans from the government to pay their tuition fees. Others will be expected either to pay tuition from their own or parents' funds or potential employers will provide the funds (with or without obligation for repayment, depending on the company). Tuition fees will be based on the estimated variable costs (e.g., salaries, social security taxes, instructional materials, library costs, etc.).

Goals and Priorities

20. There are five major goals of higher education in Mongolia. The first is to prepare the highly educated professional and technical people necessary to satisfy the development needs of the country in its transition to a democratic government and a market economy. This will require a careful assessment of the quality and relevance of the curriculum currently in place as well as a systematic analysis of the extent to which the current distribution of faculty effort meets anticipated needs for highly educated individuals. It will also require upgrading of instructional and library resources. The second is to bring higher education in Mongolia up to a level comparable with the best in the world. This appears in several of the higher education institutions' mission statements. It also reflects a desire on the part of the universities to improve the quality of their programs.

21. The third is to integrate research more fully into the university and develop ways of relating research much more directly to the needs of enterprises in order to further national development. This will require the establishment of much closer relationships among the Academy of Sciences research institutes and the universities. The fourth goal is to rationalize the structure of higher education by bringing colleges under the management of one of the national universities located in Ulaanbaatar. The fifth is to move from a fully government subsidized higher education system to one in which students and other beneficiaries pay a fair share of its costs. The government is in the process of establishing an agency, the State Training Fund, to provide loans to students who are specializing in areas that have been identified by the National Development Board's manpower planning group as being necessary for national development.

Institutional and System Structures

22. The following is a brief description of the general management structure of higher education in Mongolia. Each public institution of higher education is relatively autonomous, with its own administration and budget. The chief administrative officer is the rector, appointed by the Minister of Science and Education, usually from recommendations made by duly constituted search committees. While institutions differ in some ways, the general pattern in the national universities is for the rector to appoint up to three vice rectors, most commonly one for academic affairs, one for financial affairs, and one for research.

23. Faculties are organized into departments with chairs and a dean. There are also directors of the various research institutes. This group of deans and institute directors, along with the vice rectors, tends to comprise the Rector's Council and meets two or three times per month to advise on various procedural issues. A second group, the Learned Council, is larger and represents the senior scientific people in the institution. This Council meets only two or three times per year and advises primarily on academic policy issues. Finally, there is a University Council which is representative of all major constituencies - faculty, students, staff, and administrators. This body tends to meet twice a year and provides advice to the rector on institutional quality of life. Members of all councils are appointed by the rector, who is the primary decision-maker in all aspects of institutional management.

24. Most major decisions are, however, subject to approval by the Ministry of Science and Education, often in consultation with other responsible ministries. For instance, budget requests submitted by the university rectors to the Ministry of Science and Education must also receive subsequent approval by the Ministry of Finance; and requests for student spaces in the various fields of study must receive subsequent approvals by both the Ministry of Finance and the National Development Board. While there is no "system-level" administrative structure, the Ministry of Science and Education is responsible for

oversight and regulation of both the public and private sectors of higher education.

25. There are two other bodies that play advisory roles in Mongolian higher education: the Higher Education Reform Commission, and the Council of Rectors. The Higher Education Reform Commission (HERC) was established by the Great Khural in 1990 to provide advice on facilitating the reform of higher education, with a special emphasis on making it more responsive to the demands of a market economy. The chairman of this commission is a member of the Great Khural and reports to the Chairman of the Standing Committee on Education, Science, and Culture Policy. Members include a former legislator as deputy chair; the Director General of Science and Education in the Ministry of Science and Education as secretary; the vice president of the Academy of Sciences; the rector of the National University; the Director General of Postsecondary Education in the Ministry of Science and Education; the rector of the Technical University; the vice rectors of the Medical University and the Pedagogical University; the rectors of the College of Commerce and Business and the Economic College; the deputy director of the Educational Development Institute in the Ministry of Science and Education; 2 additional members of the Academy of Sciences; and another member of the Great Khural.

26. A second advisory group is the Rectors' Council which was established by the Ministry of Science and Education and includes all of the rectors of the public universities, the rector of the College of Commerce and Business, the chairman of the Association of Private Higher Education Institutions, and the General Director of the Postsecondary Education Department in the Ministry of Science and Education. The rector of the National University is chairman of the Rectors' Council. It advises the Ministry primarily on regulations and operational procedures related to public and private higher education.

27. There is also the Foundation for the Improvement of Higher Education, established primarily to support the Higher Education Reform Commission through fundraising, liaison with the developing private enterprises, and working on international cooperation. Members include a former legislator as president (also on HERC); the rector of the national university as vice president (also on HERC); the Director General of Science and Technology at the Ministry of Science and Education as chairman (also on HERC), the rector of the College of Commerce and Business as secretary (also on HERC); a legislator; the vice president of the Academy of Sciences (also on HERC); the director of the National Institute of Physical Training; the Ambassador to France; the president of the Mongolian Association of Cooperatives; the assistant to the Vice Prime Minister; the Head of the Foreign Relations Division at the Ministry of Science and Education; the Director General of Postsecondary Education at the Ministry of Science and Education (also on HERC), two rectors of private higher education institutions; and the vice rector of the Pedagogical University (also on HERC).

28. The impact of these bodies is very hard to judge. Each is perceived to be a "non-governmental" agency because each has no direct decision-making authority even though members of decision-making bodies

are represented. There seem to be no effective mechanisms for structuring the work of such advisory bodies. Hence, each has difficulty in determining the extent to which its work is being taken into consideration by either the Ministry of Science and Education or the Great Khural. There is also considerable overlap of membership among the three groups, with several people serving on all three groups.

29. In addition, there are several Mongolian academic societies devoted to advancing their respective disciplines through public awareness programs, fundraising, and international cooperation. Four of these societies (mathematics, physics, chemistry, and biology) organize national Olympiads for secondary school students in 8th, 9th, and 10th grades. Local competitions are also held.

30. Each of the public institutions of higher education in Mongolia was established with a particular mission, though as the institutions have developed some commonalities have also evolved. Hence, it is important to provide a brief description of the mission and emphases of each public institution of higher education either now offering or in the process of building the capacity to offer at least a first academic degree (soon to be the bachelor's). An overview of the emerging private sector of higher education will also be provided in the following paragraphs.

31. The National University of Mongolia. This institution is the only one in Mongolia which could be said to be comprehensive, offering degrees in the natural sciences, social sciences, humanities, and law. According to its most recent mission statement, the National University is different from other Mongolian universities and institutes in that it:

- prepares advanced specialists to work at the corporate, company, and government levels as well as in local administrative levels;

- prepares graduates in the natural sciences, social sciences, and humanities as lecturers and scholars to work in research institutes, state and private universities, colleges, and special secondary schools;

- carries out combined training and research in the natural sciences, social sciences, and in the humanities to prepare scholars to organize fundamental technology; and

- is a chief center for studying and disseminating Mongolian traditional knowledge and technology as well as in the development of Mongol studies.

32. To accomplish these objectives, the National University is organized into five faculties and four training and research institutes with 53 departments. Each faculty and institute has a dean or director and there are chairs for each of the departments. The Faculty of Mathematics contains the Departments of Mathematical Analysis, Algebra, Theory of Probability and Mathematical Statistics, Geometry and Methods of Teaching Mathematics, and Computing and Programming. The Faculty of

Physics has Departments of Theoretical Physics, Optics and Spectra, Solid State Physics, Radiowave Physics, Nuclear Physics, Electronics and Programming, Geophysics, and Meteorology. The Faculty of Natural Sciences has Departments of Chemistry, Organic Chemistry, Ferrous Metal and Rare Element Chemistry, Chemistry and Technology of New Materials, Geography, and Geology. The Faculty of Social Sciences includes Departments of History, Political Science, Philosophy, Sociology, and Psychology. The Faculty of Law includes Departments of State Administration and Structure, Civil Law, and Criminal and Criminal Process Law.

33. The Institute for Mongol Studies has Departments of Linguistics, Mongolian Language, Literature, Textology, Folk Art, and Journalism. The Biological Institute has Departments of Zoology, Botany, Biophysics, Biochemistry and Microbiology, Genetics-Molecular Biology, and Ecology. The Economics Institute contains the Departments of Theory of Economics, Management, Accountancy, Credit and Finance, Statistics and Economic Data Processing, Demography, and Marketing. The School of Foreign Service includes the Departments of Oriental Studies (Chinese, Japanese, and Korean), Western Studies (English, French, and German), and Russian-Slavic Studies.

34. As part of an apparent effort by the Ministry of Science and Education to consolidate the higher education system, the Pedagogical Institute in Khovd and the Economics College in Zavkhan became branch campuses of the National University in 1992. The Pedagogical Institute in Khovd is a well-established institution for preparing school teachers and has a curriculum that is the equivalent of a four-year bachelors program. The Economics College in Zavkhan provides only specialized secondary education, so it is currently not offering programs at the higher education level. Administrative, financial, and programmatic relationships of these two branches to the National University will have to be worked out over the next few years.

35. Finally, the National University operates a secondary school for gifted students. This is one way of attracting the brightest students to attend the National University. Also, as the requirements and expected levels of competence in the various disciplines increase, some higher education institutions have found it necessary to develop a post-secondary preparatory course that lasts approximately one year so that students can begin university studies at the desired levels. This is occurring with greatest frequency among students wishing to concentrate their university studies in the natural sciences and technical areas. By providing an enriched curriculum in its secondary school, the National University is able to avoid requiring an additional year of post-secondary preparation of the students who complete its school.

36. Because textbooks and other print materials are in short supply and library resources are severely limited, most instruction and student learning occurs in classrooms, seminars, and laboratories. This means that students can spend more than 30 hours per week in instructional settings. Most programs average about 1000 hours of instruction per year, with the longest bachelors degree programs (e.g.,

those in the natural sciences and engineering) averaging approximately 5000 total hours and taking five years to complete. While most programs are full-time and require attendance during the day, there are some evening and part-time programs. For instance, there are evening programs in language (English, Japanese, German, Chinese) offered by many teachers from a number of foreign countries.

37. The Technical University of Mongolia. This institution is the primary provider of preparation for Mongolian engineers in a variety of fields. The Technical University consists of four schools and three institutes, offering more than 40 specializations. It includes a School of Electrical Engineering, a School of Mechanical Engineering, a School of Geology and Mining Engineering, and a School of Civil Engineering. Also part of this university are the Computer Science and Management Institute, the Telecommunications Institute, and the Transport Engineering Institute. There is also a branch of the Technical University in Darkhan which emphasizes construction technology, offering programs in construction engineering, metallurgical engineering, mechanical engineering of building materials, machinery technology, and building material technology. The Technical University maintains a postsecondary "Lyceum" to provide students with the additional year of education perceived to be prerequisite for many admitted students prior to their entrance into the regular bachelors degree programs in engineering.

38. As with the other universities in Mongolia, the Technical University has changed over to the new degree structure offering bachelors, masters and PhD degrees. It has also retained several middle level technical programs of an average three years duration that lead to a "diploma" or technical certification. Most bachelors degree programs will take five years to complete, six if students take the "Lyceum" preparatory course.

39. Diplomas and degrees are offered in more than 40 areas, including: thermal engineering, electrical engineering, electrical power automation, radio and telegraph, measurement electronics, information technology, civil and industrial engineering, architecture, agricultural construction, sanitary engineering, wood processing mechanics and technology, construction and road machines, building materials technology, hydro-engineering, construction equipment, forestry, geology, mining, hydro-geology, survey, geodesy, geotechnical survey, mining machine complex, auto engineering, metal processing, food industry mechanics and technology, light industry mechanics and technology, cabling technology, software engineering, automation electronics, industrial management, oil drilling, highway, metallurgy, and oil(construction, preservation, and transportation). Post-graduate studies are offered in computer science, civil engineering, geology, mining, telecommunications, and food industry mechanics.

40. In the past, programs have been highly specialized and focused on preparation for narrowly defined professions listed in a rather detailed job specification manual which was developed to describe the various posts available in the centrally planned economy that existed before 1990. This manual drew heavily from the Russian

system of job classification. The Technical University is continuing a process of reviewing and revising its programs to make them more compatible with a market economy so that the emphasis on training for these detailed job specializations will be reduced greatly in favor of preparation for more general professional specializations which will make it possible for graduates to fit into a variety of positions and types of organizations.

41. The Technical University has traditionally admitted students from the ten-year secondary schools; from postsecondary technical colleges; and those who are already working who have finished a complete (ten year) secondary education. Applicants are given a university-prepared examination which covers mathematics, physics, and foreign language (usually Russian, but it may be others). Those who have high scores can be admitted directly. Another route is for workers with a complete secondary school education to take a ten-month preparatory program, and those who do well in that program are admitted. Depending upon test scores and desired major field of study, students may be required to take a one-year postsecondary school course at the "Lyceum" prior to entering the regular academic degree programs.

42. Most bachelors degree programs within the Technical University are expected to be five years in duration, based on an academic year that runs from early September through late May. The university estimates that a degree consists of about 5,000 hours of academic work (about 1,000 hours a year), divided roughly equally between lectures and laboratory work. In addition, another 1,200-2000 hours of field work are required in an industrial plant or other relevant field site (e.g., mine, power plant, construction site, etc.).

43. Basic studies which all students receive (regardless of specialization) cover about 40 to 50 percent of the program. These subjects include social and political sciences, and disciplines such as mathematics, physics, and foreign languages. Within the basic studies, required of all students, are some introductory engineering courses. After the second year, students begin to specialize. About 35 to 40 percent of the total program is devoted to the student's professional specialization; and during the final years the student further specializes within that profession. About 15 to 20 percent of the total program is in the specialization. At least ten percent of the total program consists of field work and thesis work. All students must prepare and defend a thesis in their field of specialization to get their bachelors degree.

44. <u>The Pedagogical University</u>. The Pedagogical University prepares secondary school teachers, teachers for primary and kindergarten teachers colleges and, to some degree, organizers and teachers for youth organizations. Its structure includes four academic divisions (Mathematics; Natural Sciences; Mongolian Language and Literature; and Fine and Creative Arts), three institutes (Institute of Foreign Languages, Institute of Physical Education, and Institute of Curriculum and Methodology), and three colleges (Teachers' College of Ulaanbaatar, College of Kindergarten Pedagogy, and College of Music Pedagogy). There is also an affiliated regional institution

in Erdenet, the Institute of Foreign Languages.

45. Most secondary teaching specialties require five years of study, with more than 4300 hours of instruction. In addition, students are required to complete a six-week student teaching experience. Basic studies (social sciences, foreign language, pedagogy, psychology, and computer science) comprise 30 percent of the total program. More than half of the required hours of instruction are completed in laboratory research and seminars. With the great push toward teaching more foreign languages within the school system, the Pedagogical University is being pressed to produce language teachers rapidly (700 English teachers are needed in the secondary schools for the upcoming school year, 1991-92). The program of the Pedagogical University, in general, will stress foreign language skills for all teachers, and through the Foreign Language Institute will prepare foreign language teachers, interpreters and translators.

46. All programs at the Pedagogical University require candidates for admission to present a certificate of graduation from a ten-year (complete) secondary school. A three-part entrance examination is also required: two exams based on the area in which the student wishes to specialize and a foreign language exam (a Mongolian language exam if the student wishes to specialize in foreign languages).

47. The Pedagogical University has programs, most requiring five years of study, to prepare teachers in the following areas: physics and mathematics, physics, chemistry and environmental studies, biology and environmental studies, geography and environmental studies, Mongolian language and literature, foreign languages, history and social science, fine arts and painting, vocational education, pedagogy for individuals wishing to teach in a primary school teachers college, pedagogy for those wishing to teach in a kindergarten teachers college, and physical education and sports (including a program to prepare athletic coaches). In order to graduate, students must pass examinations constructed by their teachers at the end of each semester as well as two and sometimes three state examinations given at the end of the last term of study. Programs to prepare kindergarten and primary school teachers offered at the three affiliated colleges of the Pedagogical University in Ulaanbaatar require only three years of study and lead to a certificate rather than a first academic degree.

48. The Foreign Language Institute of the Pedagogical University is expected to face an increasing demand for teachers of foreign languages and interpreters. Starting from academic year 1994-1995, English will be taught as a compulsory subject in schools at all levels. German, French, Chinese and Japanese will also be taught in some schools. It is also expected that evening courses will have to be expanded for adults. Thus, the target is that every year some 300,000 people will be enrolled in foreign language training, including 250,000 in the 6-10th level classes in secondary school, 30,000 in vocational schools, and 20,000 in universities and institutes. Some 2000 are expected to be accommodated in evening classes in the Foreign Language Institute which will offer English, German, French, Chinese, and Japanese. Up to 90 percent of these students are expected to be

enrolled in English classes.

49. Originally established to prepare teachers and interpreters of Russian language, The Foreign Language Institute has been making the transition to providing most of its programs for languages other than Russian. The Foreign Language Institute has a Rector who is also the Vice-Rector of the Pedagogical University. It has an administrative structure that mirrors the one at the university level, with an Academic Council, a Rector?s Council, and two Vice-Rectors (one responsible for academic studies and the other for finance). There are seven departments: English Language and Literature; Russian Language and Literature; French and German Languages and Literature; Oriental Languages and Literature (Mongolian, Chinese, Japanese and, perhaps in the future, Korean); General Linguistics; Pedagogical Sciences and Psychology; and Social Sciences. Programs to prepare foreign language teachers for general education schools, linguists, and interpreters require four years of study.

50. In addition to specialized language training in at least two foreign languages, all students in the Foreign Language Institute (preparing to be both interpreters and teachers) must complete basic studies consisting of the following subjects: philosophy, economics, political science, general linguistics (including stylistics, lexicology, theory of grammar, etc.), and physical education. Teachers must also do basic preparation in literature, psychology and pedagogical sciences. The four-year program for interpreters consists of 4,500 classroom hours while the five-year program for teachers consists of about 5040 hours. The first foreign language for teachers will typically require from 47 to 53 percent of all classroom hours. The first foreign language for interpreters typically requires about 53 to 56 percent of the total classroom hours. Students generally do individual study with their instructors beyond the required classroom hours. All programs include practice in teaching or interpretation.

51. The Medical University. This university prepares general practice physicians, pediatricians, public health managers, pharmacists, dentists, and practitioners of Mongolian traditional medicine. There are 12 departments providing fundamental instruction (chemistry, biophysics, physiology, anatomy and histology, microbiology, genetics and immunology, foreign languages, social sciences, public health, pharmacy, pharmacology, and pathological anatomy). Clinical instruction is provided by 6 departments (skin diseases, neurology and psychiatry, Mongolian traditional medicine, dentistry, infectious diseases, and gynecology) and two institutes (therapy and surgery). There is no teaching hospital affiliated with the Medical University, but there are agreements with 14 clinical and base hospitals (2060 beds) in Ulaanbaatar as well as 17 hospitals in the country-side where students receive practical training. The university is administered by a rector and two vice-rectors. A small academic council oversees instruction, gathers statistics on the various academic programs, supervises curriculum and teaching methodology, and sets examination policies.

52. Attached to the Medical University is a large in-service education and training unit, the Institute for Improvement of Medical Professionals. A variety of short in-service training courses in some 30 specialties are offered, often of three to four months' duration. Advanced post-graduate training leading to specialist certificates is also offered. Every year, nearly 200 physicians improve their qualifications through this Institute. The National Center for Anthropology is also attached to the University. This center has sections dealing with Physiology and Ecology, Genetics, Social Psychology, and Informatics. Research laboratories are attached to each of these sections. There is a specialized secondary school affiliated with the Medical University in Ulaanbaatar that offers programs for preparing nurses, lab technicians, medical technologists, dental hygienists and technicians, pharmacy technicians, and medical records administrators.

53. Two regional institutions are also affiliated with the Medical University: the Medical College at East Gobi and the Medical College at Gobi Altai. The first of these colleges is used as a site for clinical training of medical students. Both also have specialized secondary education programs for the preparation of nurses, midwives, and other dental and health care technical and support personnel. There are several technical/vocational health professions schools located in the provinces and there has been some discussion of attaching these schools to the university. Students finishing any of the specialized secondary programs for the training of medical support personnel may compete for admission into one of the university's degree programs.

54. To be admitted into the Medical University, students must have a ten-year (complete) school-leaving certificate as well as high scores on the institution's entrance examination. Starting in 1992, students of general and tradition medicine will study basic medical science and other fundamental subjects during the first two years of their six-year medical training. The programs in public health and dentistry require five years of study, which includes 1.5 to two years of basic courses and three to 3.5 years of clinical training. Starting from their third year through to graduation, medical students are required to do annual summer practical training directed by university faculty and physicians. Masters degree programs require two additional years of study beyond the first professional degree.

55. The National Agricultural University. A variety of agricultural specialists are prepared in this university's five faculties: Veterinary Medicine, Animal Husbandry and Zoology, Agronomy, Agricultural Technology, and Agricultural Economics. It also has branches in Bayanchandman, Darkhan, and Khovd. The Agricultural College in Khovd has had only specialized secondary school programs, but will begin shifting to a postsecondary program in September of 1993. The Academy of Sciences' Agricultural Research Institute in Khovd and a laboratory there will also become part of the Agricultural College. Planning for this transition is one of the many challenges facing the Agricultural University. Not only will is be a model for integrating the research function into higher education, but it will

also have to find ways to upgrade the qualifications of teachers in affiliated regional colleges who do not hold advanced scientific degrees.

56. Entrance to the university is on a competitive basis for students who have graduated from a 10-year (complete) secondary school, and graduates of secondary technical and vocational schools. Students must take entrance exams in the following basic subjects: mathematics for those wishing to specialize in agricultural economics and agricultural technology; chemistry for those seeking admission to veterinary medicine, and biology for those wishing to specialize in agronomy. All applicants must take a foreign language exam and a second exam related to their desired specialization (social science for agricultural economics, physics for agricultural technology, biology for veterinary medicine, and chemistry for agronomy).

57. Programs will require between four and five years of study for the bachelors degree, and range from 4300 hours of instruction for economics and engineering mechanics to 5400 hours for veterinary medicine. About 45 percent of the content of all programs consists of basic subjects (e.g., mathematics, physics, biology, chemistry, social science, foreign language, etc.), with the remaining 55 percent devoted to work in the specialization. Lectures are typically about 50 percent of instructional time, with the other 50 percent devoted to laboratory work, practical study, and seminars. All specializations include three months of supervised practical work in cooperating agricultural enterprises. Within the past year has the Agricultural University has received authorization to acquire its own experimental farm near Darkhan. In fact, there are ongoing discussions about moving the entire Agronomy Faculty to Darkhan and the Agricultural Engineering Faculty to Bayanchandman.

58. The Institute of Technology. The higher education reforms of 1992 urged the integration of teaching and research within higher education. This institution represents a different approach, namely, combining several institutes of the Academy of Sciences into a new higher education institution oriented specifically toward the preparation of high technology specialists. Some of these institutes were formerly affiliated with enterprises and the new institution is seen by its rector as maintaining close working relationships with industry. He thinks of this as a small scale, innovative institution that will prepare highly qualified specialists for small enterprises. Among its emphases will be software engineering and informatics, including cognitive science, computer networking,and digital image processing. Other emphases will include mineral resources, construction of high technology tools and devices, processing of agricultural products (biotechnology), and materials science. The new institute will combine research and teaching, including establishing relationships with related disciplinary groups in the other universities. The Rector sees the possibility for obtaining income from the university's own production facilities as well as contracts for specific types of products and services with business, industry, and possibly even the government.

59. As research institutes of the Academy of Sciences, only advanced training leading to the Doctor of Science degree was available. Consequently, the Institute of Technology is trying to build a brand new bachelors degree curriculum as well as identify teachers to deliver it. While the research staff of the constituent institutes have very high scientific qualifications (80 percent hold at least a Ph.D. degree), few have much experience teaching beginning students in higher education. Hence, a major task is to both build the new curriculum and identify staff (either through recruitment of teachers from the universities or through retraining of researchers working in the constituent institutes) to provide the instruction. It is anticipated that bachelors degree students will require at least five years of study. The first three years will be devoted to basic subjects (e.g., mathematics, physics, chemistry, English, computer science, etc.). In the fourth and fifth years, students will work in one of the research institutes while completing their specialization. The first class of projected bachelors degree students enrolled in September of 1992, and a graduate (masters) degree program is expected to be begun in September of 1993.

60. Students are admitted competitively, based on presentation of a ten-year (complete) secondary school certificate and scores on entrance exams. Similar to what has been mentioned with respect to the admission of science and engineering students at other Mongolian universities, the rector of the Institute of Technology feels that most students entering his university require a one-year, post-high school preparatory program prior to beginning their bachelors degree study. Such a preparatory program has been started for the 1993-94 academic year.

61. The National University of Art. This institution was established as the Institute of Art in 1990, when the faculties of theater and cinema performance, voice, and studio art separated from the State Pedagogical Institute. In March of 1993 it was renamed the National University of Art. It prepares students for professional careers in Mongolian and classical music performance, conducting, voice, theater and cinema performance as well as production, and studio art. It also has programs for music and voice teachers, and will begin a dance program this year. Programs are four or five years long and will lead to a bachelors degree.

62. The full-time faculty of close to 90 is supplemented by an equal number of part-time faculty, most of whom are experienced performers and artists. A masters degree program in national music was started this year. Except for those living in five western aimags, prospective students must have a ten year secondary education certificate and come to Ulaanbaatar to audition or present a portfolio of their work. It also admits graduates of the Arts College in Ulaanbaatar. There are approximately two candidates for each space. Tuition is expected to be 28,000 tugrugs, and most students will be eligible for loans from the State Training Foundation.

63. The Economic College of Mongolia. This college was originally founded in 1924 as the Financial and Technical School.

Under the Ministry of Finance, the mission of this school was to train accountants and economists for the command economy in a two-year (postsecondary) non-degree program. In February of 1991, the government of Mongolia created the current Economic College on the basis of the old technical school with a mandate to prepare its students for careers in economics, banking, accounting and business in a market economy. It is anticipated that graduates will be qualified for positions in industry and government, one of the newly privatized banks, the stock exchange, brokerage firms, the central bank, or to establish entrepreneurial enterprises. Its degree programs aim to provide a broad education in fields of business, accounting, finance, and economics. Students must have a ten-year (complete) secondary school certificate and are admitted competitively by examination. Degree programs will require four years of study. The first two classes of projected bachelors degree students were admitted in September of 1992 and 1993, respectively.

64. At present, three degree programs are offered: accounting, business studies, and banking and finance. A new economics degree is also being considered to fill the training gap in this field in Mongolia. Since many Mongolians do not have the time, opportunity, or money to undertake a full-time degree program, part-time evening degree programs are also offered in all three areas. A variety of non-degree courses will also be offered by this college. They include intensive short courses, generally lasting less than a month, on such subjects as market economics, accounting, business, marketing, and computing. Anticipated offerings are the areas of financial markets, trade promotion, and international business. A second type of short course would be of six months to a year's duration and lead to a diploma. Such courses would not be as intensive as the short courses but would be narrower than the degree program. Subjects such as banking, accounting, stockbroking, and tax inspecting could be covered. A third type of short course would be professional courses for students wishing to prepare for licensing exams (e.g., accountants, stock brokers, etc.). The fourth type of short course would be distance education (e.g., correspondence courses, and as phone and telecommunications improve, courses via other media).

65. The Economic College has a rector who oversees three groups of departments, each group with its own director: Teaching, Research and Consultancy, and Administration. Each department, in turn, has a head. Within the Teaching Group, the three degree-granting departments are accounting, banking and finance, and business. The latter two of these departments are aided by volunteers from the Peace Corps and Voluntary Service Overseas (VSO) who help with curricula, course design, and training of teachers. There are also departments for languages and informatics. The Research and Consultancy Group is responsible for the administration and promotion of the college's consultancy activities as well as research. The Administrative Group includes departments for accounts, building maintenance, the dormitory, and maintenance of technical equipment.

66. The College of Commerce and Business. This institution was originally established in 1924 as a training center for traders and

later became the Traders Technical School, a specialized secondary school under the Ministry of Trade. The College of Commerce and Business was set up in 1991, replacing the earlier school. It is now providing pre-service and in-service training of managerial staff in business and industry; developing a program of research and development on marketing and business practice in a market economy through its Marketing and Business Research Center; and is beginning to offer consultancies and research services to private firms and companies.

67. The College has begun a bachelors degree program for specialists in trade and business which requires 3.5 years of study (4000 hours of instruction). Among the subjects to be studied by bachelors degree students are mathematics, English, management, marketing, economics, international trading, laws and regulations, and computers. When completing their degrees, students will work as marketing managers, enterprise managers, and trade and enterprise accountants. The first students were admitted in September of 1991. Admission to the bachelors degree program is open to holders of ten-year (complete) secondary school certificates and based upon scores on competitive examinations. The college also offers vocational training through short-term (2-12 months) courses organized to train brokers, workers for public service, hotel and restaurant workers, and accountants. On the request of companies, it will provide courses to improve workers' qualifications. Short-term courses are paid for either by the individuals enrolled or the companies ordering the training.

68. National Military University. This institution was founded in 1921 as a training institute for commissioned officers, but became the "General School for all Soldiers" in 1924. Over the years it has included programs for training both commissioned and non-commissioned officers. It was renamed a university in 1991. The Military University enrolls about 700 students, only 20 percent of whom are studying for an academic degree, and has 150 faculty (100 of whom are full-time). Since the Military University is funded by the Ministry of Defense, no statistical data about its students and faculty are available from the Ministry of Science and Education.

69. Specializations offered include a variety of military and engineering subjects. Candidates for admission must have a ten year secondary education certificate, be no older than 26, pass a physical exam, and score high on the entrance examinations. There are five applicants for every student space. The bachelors degree program is five years long, but some non-degree programs preparing military officers are as short as two years. A post-graduate (Ph.D.) program was begun in December of 1992. All academic programs are subject to approval by the Ministry of Science and Education. The Military University has the same general problems as the other higher education institutions in Mongolia: qualifications of teachers need to be improved; training facilities and equipment are outdated; and library resources are inadequate. Most military equipment is Russian. This institution is fully funded by the Ministry of Defense. Students pay no tuition and costs of textbooks, uniforms, housing, and food are also covered. Bachelors degree recipients are required to serve ten years

in the military or repay the costs of their education on a prorated basis.

70. Private Higher Education. There are now 18 private institutions of higher education that are authorized to operate by the Ministry of Science and Education, and five more have requested approval to begin operations in September of 1993. Table 5-4 shows the numbers of teachers and students in those private institutions for which data were available. Most of them are quite small and very specialized. One third of these private institutions emphasize foreign language training which is clearly an area of high demand in a time of market transition. Four emphasize Mongolian language or culture. The oldest of these institutions will be entering their third year of operation in September of 1993. Both the University of Mongolian Knowledge and the "Otgon Tenger" Institute of Foreign Languages are housed in former school buildings that have been purchased by their founders.

Programs

71. Trends of Enrollments and Institutions. According to government statistics, the enrollment of Mongolians in degree-granting institutions of higher education peaked in 1985 at over 24,000. This include 6,110 Mongolians studying at foreign universities, 3,514 part-time students, and 14,627 full-time students. By 1990, as the transition to new economic and political structures got underway, higher education enrollments in Mongolia had dropped from 18,141 to 16,910. In 1991, the overall enrollment figure in Mongolia was 16,801 and in 1992, it was 16,917. For the short term, at least, the numbers of students enrolled in higher education degree programs seems to have stabilized. There are 2,900 Mongolians still completing their studies in other countries but only 41 new students will leave this year.

72. This nation-wide plateau masks, however, some very real differences in trends across institutions. Table 5-5 shows enrollment and graduation figures since 1990 in the higher education institutions in Ulaanbaatar. Both the National University and the Art University have been increasing their enrollments since 1990, the former by close to 30 percent and the latter by almost 40 percent. Because the Economic College and the College of Commerce and Business are both in the process of building new bachelors degree programs, they are also both increasing their enrollments. This suggests that there is a strong demand for courses and programs preparing people for business and financial positions in the emerging market economy of Mongolia. Enrollments at the Pedagogical University and Technical University have been stable since 1990.

73. Two institutions show decreases in enrollment. The Medical University's enrollment declined, but only by about 10 percent. The most dramatic decrease in enrollment appears for the Agricultural University which declined by almost half over the past three years. This is particularly striking for a country in which agriculture plays so significant a role in the economy. When asked about this trend, the

rector and vice rector of the Agricultural University indicated that it was primarily due to the closing of part-time degree programs and some reduction in the number of new student places authorized by the National Planning Board. The enrollment goal is 1200-1300 students. Finally, across all the institutions included in Table 5-5, graduation rates over the past three years have been reasonably stable. This suggests that the changes in enrollments will not be reflected in decreased numbers of graduates for a few years.

74. Admission quotas are set by the National Planning Board in consultation with the higher educational institutions. There appears to be a concerted effort on the part of the National Planning Board to keep the number of positions available for new students in higher education sufficiently low to virtually guarantee a continuing high level of employment of graduates. New students slots are also allocated by aimag, based on both manpower projections and specific requests from local government authorities. According to figures published by the Asian Development Bank in 1992, the number of new students entering Mongolian higher education dropped from 5367 in 1985 to 3768 in 1990. A recent newspaper report indicates that for September of 1993, the number of new students entering higher education in Mongolia will be only 2100 (about 18 percent of the graduates from ten year secondary schools). Mongolian higher education institutions enrolled only 278 foreign students in 1992-93, of whom 51 percent came from China and 23 percent from the former Soviet Union.

75. Competition for admission to higher education is intense. Only one in five of all students taking entrance examinations this year qualified for admission to higher education, and competition varied considerably by specialization. At the National University, for instance, 651 secondary school graduates took the entrance examinations for admission to the six slots allocated by the National Planning Board for students from Ulaanbaatar to study foreign languages. From the 282 who passed the exam, the top six applicants who were admitted all had perfect scores.

76. Universities do have some discretion to admit more students than are actually authorized. The National University, for instance, expects to admit about 25 percent more students that were officially authorized, but two-thirds of them will be the highest scorers from Ulaanbaatar and all will be expected to pay full tuition. When establishing enrollment quotas, institutions of higher education should begin thinking about the demands of self-financing secondary school graduates for higher education as well as the projected manpower needs for the country. If recent patterns of restricting admissions continue, institutions will have to shrink in size of staff in proportion to the reductions in enrollment. Clearly, one way to increase revenue is to authorize increased admissions of self-paying students with high test scores in specializations for which there are many applicants.

77. Teachers. Table 5-6 shows the patterns in the number of teachers at the major higher education institutions since 1990. Staffing has been reasonably consistent with enrollment patterns,

though only for the large increase at the National Art University and the large decline at the Agricultural University have the shifts in numbers of teachers followed the enrollment shifts in direct proportion. The following are the teacher/student ratios for the 1992-93 academic year:

National Art University	- 1 to 3.8
University of Technology	- 1 to 4.6
Technical University	- 1 to 7.7
National University	- 1 to 8.4
Medical University	- 1 to 9.7
Agricultural University	- 1 to 10.3
Pedagogical Institute at Khovd	- 1 to 10.9
Pedagogical University	- 1 to 12.1
Economic College	- 1 to 12.9
College of Commerce and Business	- 1 to 13.9(including specialized secondary students)

78. Data on gender of teachers, available only for the 1991-92 academic year, are also shown in Table 5-6. Most institutions have predominantly male teaching staffs, ranging from 54 percent at the Medical University to 80 percent at the Agricultural University. Female teachers predominate only in the Institute for Foreign Languages (82 percent) of the Pedagogical University, the College of Commerce and Business (77 percent), and the National Art University (52 percent).

79. There are no data that indicate directly how current the academic knowledge of teaching faculty in higher education really is. It is reasonable to expect, however, that faculty who have many years of experience were educated under very different social and economic systems than that which currently exists in Mongolia. Thus, it is appropriate to examine some indicators of the age of faculty in order to get some indication of the numbers and proportion of faculty who might be candidates for some sort of further education to improve knowledge of their academic fields as well.

80. Table 5-6 shows the proportions of teachers who have more than 21 years of experience in higher education as well as what proportion are older than age 50. With more than 25 percent of teachers having worked at least 21 years in higher education, the universities in Mongolia have a very experienced group of teachers. The National University and the National Agricultural University have both the most experienced and the oldest teaching staffs. Consequently, they might be targeted initially for a review of teacher qualifications and the establishment of a professional development program to upgrade qualifications in areas found to be substandard. While not included in this table, the faculty in many of the regional colleges being brought under the administrative authority of the national universities are also in need of re-training to meet the standards of contemporary knowledge in their fields of specialization.

81. In a rapidly changing society, it is important to have teachers in higher education who are both highly trained and have up-to-date knowledge of their academic fields. Table 5-7 shows the

distribution of faculty by academic rank and highest degree. In Mongolian universities, the ranks of professor and associate professor are reserved for the most senior scholars, so the numbers of professors at these ranks are deliberately kept relatively low. A better indicator of academic qualifications is advanced degree attainment. As shown in Table 5-7, the greatest concentrations of teachers holding either the Doctor of Science (D.Sci.) or the Ph.D. degree are in the National University (35 percent), the Agricultural University (32 percent), and the Medical University (25 percent). The pedagogical institutions and those emphasizing cultural subjects have smaller concentrations of advanced degree holders, as would be expected for institutions emphasizing more field-based types of instruction.

82. Curriculum. The higher education institutions in Mongolia prepare specialists in over 100 different professions, from physicians to veterinarians, from secondary-school teachers to engineers and research workers. The average age of students in higher education institutions is 21 years and the time of study for a first academic degree averages between 4 and 5 years. The proposed change to an American-style degree structure has already been mentioned as a major influence on the curriculum. Faculty groups in each of the universities seem to be working on curriculum revision that includes improving existing curricula, introducing more up-to-date materials into the curriculum, and redefining degree structures. Foremost among them is an effort to move away from narrowly defined specializations into higher education that prepares people to be able to adapt to the wide variety of employment opportunities that will develop as the country shifts from a command to a market economy. Given the severe shortage of textbooks, most instruction takes place in lectures and other organized activities in formal classrooms. Recently, the National University instituted a requirement that 25 percent of a student's semester grade must be based on independent work, 25 percent on short exams during the semester, and 50 percent on the final exam. Much work remains, however, to be done to develop a curriculum that is current and effective.

83. Administration. Each of the institutional descriptions in the foregoing included a brief discussion of administration which suggested that there is a general pattern which seems to characterize the internal organization of most higher education institutions. Administration tends to be very much "top down," with the rectors assuming direct responsibility for most decision-making. They do seem to involve faculty and their deputy administrators in various types of deliberations, and through the Rectors' Council, consult with one another. The pattern of academic organization (e.g., deans and directors with chairs of departments) is typical of higher education in many parts of the world.

84. What is much less well-defined is the administrative relationship between the universities and their newly designated "branch campuses." Not only are many of these branches located at some distance from Ulaanbaatar, they also tend not to be exclusively higher education institutions, nor are they on the same academic level as their "parent" universities. A challenge for this transitional period

is to develop mechanisms for coordinating programs and resources while, at the same time, providing ways for teachers to upgrade the level of their academic qualifications.

85. Table 5-8 shows the distribution of teachers, administrators, and other staff in each of the universities. This table suggests that there may be an excessive number of employees other than teachers and administrators in many of the universities. At the National University, for instance, only 37 percent of the total staff are teachers and 59 percent are other employees. That none of the institutions have an unreasonably large number of administrators reflects, in part, the very rector-focused type of management that is common among them. Given the proportions of teachers to total staff shown in Table 5-8, a target of 50 percent or more teachers should be considered.

86. Facilities and Equipment. All indications are that facilities and equipment present major problems across all levels of education in Mongolia. Buildings and other facilities are in increasingly poor repair due to lack of funds for maintenance. Heating costs have increased so rapidly that many educational institutions are forced to spend half or more of their budgets simply to keep buildings warm in winter. In higher education, scientific equipment tends to be outdated (much of it received from Russia a decade or more ago) and computers are in short supply. It is not unusual to have computer labs in which three or four students share a single computer. Few of the desktop computers have hard disk drives and maintenance problems are common.

87. Library resources are extremely limited throughout the country. Universities cannot afford to purchase expensive books and journal subscriptions from western publishers, so obtaining access to current scientific literature is very difficult. The biggest single type of material in virtually all of the university libraries is textbooks (or poor quality photocopies) for students' courses. The most readily available scientific and textual materials are printed in the Russian language, but funds to purchase even Russian language books have been very limited since 1991.

88. To give a few examples of library holdings, the National University library has 240,000 books, approximately 30 percent of which are textbooks. The Technical University has 150,000 books, of which two-thirds are textbooks. The Institute for Foreign Languages of the Pedagogical University has 54,000 books, 60 percent of which are textbooks. Libraries tend to have closed stacks and access to books is monitored very closely. At least two of the university libraries are computerizing their card catalogs, but each seems to be working independently rather than coordinating efforts with an ultimate goal of a union catalog. There is also the National Library in Ulaanbaatar which was funded under the Academy of Sciences, but cooperation among the universities and the National Library in the acquisition of scientific materials appears to be quite limited.

89. Current scientific publications are very scarce, except in

some of the institutes of the Academy of Sciences which, until the past two years, had its own special budget for such materials. Academy of Sciences research institutes tended also to have better laboratory facilities than the universities. This is apparent, for example, at the developing Institute of Technology. Some of the university libraries have agreements with institutions in other countries for the acquisition of library materials. Recently, a Mormon church group donated $3,000,000 worth of English language textbooks to the universities in Mongolia. Finally, there are no funds to support the acquisition of materials on electronic data bases. In short, access to current research findings through periodicals or electronic data bases is severely limited.

90. Costs and Financing. Broad figures for government expenditure on higher education indicate that in the years 1990-92, post-secondary colleges consumed about 8 percent of the government education budget and universities consumed about 9 percent. Taken together, therefore, the higher education sector consumed about 17 percent of the total. One of the measures that has been taken to "rationalize" higher education is to bring most of these postsecondary colleges under the administrative control of a related university. This might also be seen as one way to begin reducing the amount of money being spent on postsecondary colleges, many of which include specialized secondary programs as well as higher education, in order to concentrate limited resources on the universities.

91. The government distinguishes between three main categories of expenses: fixed expenses, variable expenses, and student stipends. Fixed expenses include infrastructure and administrative costs which have to be paid more or less regardless of the size of the institution. Variable expenses include teachers' salaries and other costs which depend on the number of students. Stipends aim to cover part or all of students' living costs. There are three types of stipend: the first is effectively a prize for excellent performance, awarded to the students with the highest academic standing for the previous two semesters; the second is an award sponsored by an enterprise or named after a famous person and also often conditional on good academic performance; and the third is a general grant to cover students' living costs. Until 1992, all students were given stipends. However, it has been decided that, beginning in September of 1993, general stipends will be given only to poor students, and that these stipends will be given on a loan rather than a grant basis. Applications must be supported by extensive documentary evidence.

92. Figures for 1992 indicate that, in both postsecondary colleges and universities, salaries consumed about 35 percent of the total variable expenditures. Stipends to students formed the second largest item, followed by administrative expenses which included heating and other utilities. Tables 5-9, 5-10, and 5-11 show the universities' variable cost budgets for 1990, 1991, and 1992. Probably most striking about these tables is the strong inflationary pressure on costs, with total budgets virtually doubling between 1990 and 1991. Increases for 1992 were smaller, except for the Pedagogical Institute at Khovd, which doubled again. For 1993, faculty pay will be raised an

average of 3000 Tugrugs per month, so salary costs will increase by another 35-40 percent. Fixed costs will also increase, primarily due to the large increases in fuel costs for winter heating. Table 5-12 shows the 1990-93 budgets of the Economic College and the College of Commerce and Business. There is some variation in the proportion of costs in each category across the institutions. This may reflect the flexibility rectors have to move funds among expenditure categories as needed.

93. As one major cost-recovery measure, the government has decided that its higher education institutions should charge tuition fees. This decision was originally announced in July 1992, and was to have taken effect that year. A few public higher education institutions did admit some fee-paying students in 1992, but the government, after having been alerted to complexities in the implementation of the new policy, decided to delay general implementation until 1993. According to the policy, the government remains responsible for fixed expenses, but expects the variable expenses to be covered from students' fees. The scale of fees varies widely, both between and within institutions. Most institutions will charge at least 20,000 tugrugs per annum, and some will charge over twice that amount. Further, students will no longer be given stipends, and will have to borrow to cover living costs or finance them from family or other sources.

94. One way to estimate per student cost for each higher education institutions is to divide the total variable cost budget by the total number of students enrolled. (For 1992, this would require dividing the total figures from the bottom row in Table 5-11 and the 1992 column in Table 5-12 by the total enrollment for 1992 shown in Tables 5-1 and 5-5.) This calculation leads to the following costs per student (in tugrugs):

National University	(42,963,100/2430)	-	17,680
Pedagogical Inst Khovd	(15,743,500/413)	-	38,119
Technical University	(47,155,400/3083)	-	15,295
Pedagogical University & Foreign Lang Inst	(32,462,900/2722)	-	11,926
Medical University	(43,016,700/2662)	-	16,135
Agricultural University	(27,916,000/976)	-	28,602
University of Art	(6,256,000/358)	-	17,475
College of Commerce and Business	(8,982,600/556)	-	16,156
Economic College	(7,779,000/358)	-	16,342

95. These figures would, of course, have to be adjusted upward (probably on the order of 60 percent) to compensate for inflation and increases in faculty salaries in order to estimate the actual per student cost for 1993-94. This calculation does show very clearly, however, that the per students costs at both the Pedagogical Institute in Khovd and the National Agricultural University are much higher than those at the other universities. Recent declines in enrollment are largely the cause of the high per student costs at the National Agricultural University. Both institutions have reduced the number of faculty, but this reduction will not be reflected fully in the salary

budget line until the 1993 fiscal year.

96. A different approach to estimating fees is being used by the Technical University which initially proposed charging different amounts for different courses and for different years of study. The university trains people for 41 professions, and most courses last five years. Fees for the first four years of study that are proposed for 1993-94 range from 23,000 to 49,000 tugrugs, and are based on a detailed estimate of the costs of different variable cost components for each year of study that is shown in Table 5-13. Presumably, estimated fees for the fifth year of study are much less than for the other years because students are in the field doing practical work and, consequently, not using equipment or spending time in classes that require distribution of other materials.

97. Finally, Table 5-14 shows the actual fees that were proposed by the higher education institutions along with some of the modifications recommended by the Ministry of Science and Education. Comparing these recommendations with the estimates based on 1992 per student costs (and adjusted upward by 50 percent for inflation and salary increases), the fees are likely to cover variable costs at the National University, the Pedagogical University, the Medical University, and the Art University. Recommended fees are not likely to cover costs at either the Pedagogical Institute in Khovd or the National Agricultural University.

98. To help assess the potential social impact of these fees, it may be noted that in July 1993 the salary of a secondary school teacher with higher education at the top of the scale was only 6,800 tugrugs per month (6,630 after tax). The government had promised an across-the-board increment of 1,500 tugrugs on 15 September, but even with this increase the salary would be only 8,300 tugrugs per month. The average salary for a teachers at the National University for 1993-94 is projected to be only slightly higher at 9,300 tugrugs per month. Against this scale, fees on the order of three to four months of an education professional's salary appear quite high. However, for average urban families in 1993, salaries formed only about 57 percent of total incomes. Further, compared to the cost of other items, the fees do not seem quite so high. For instance, a pair of good quality boots cost 18,000 tugrugs, a double bed 29,500 tugrugs, and a television 171,000 tugrugs.

99. Moreover, even with fees exceeding 20,000 tugrugs, the majority of institutions found that they have many applicants. For example, the College of Commerce and Business, which in 1993 proposed to charge 25,000 tugrugs per annum for the bachelors' level course, was able to admit only 25 students from Ulaanbaatar, even though it had 250 applicants. Likewise, the Technical University had spaces for 220 students from Ulaanbaatar but had 800 applicants. The Otgon Tenger Institute of Foreign Languages, a private institution founded just two years ago, had 520 applicants for 80 spaces, even though it will charge 40,000 tugrugs. Over the entire country, there were an average of five applicants for every available student place in higher education. It appears that, at least in 1993, a sufficient number of students for

most specialties are willing to pay the fees, and considered such payment a good investment. It remains to be seen, however, whether all of the current and newly admitted students will actually arrive at the various higher education institutions in September with the funds necessary to pay their fees.

100. Recognizing that fees could discriminate against students from poor families, the government has established machinery for providing student loans from the State Training Foundation. To get loans, students must first find employers, such as enterprises, ministries or local governments, willing to sponsor them. These employers are asked to guarantee repayment of loans. It is anticipated that the loans will be repayable within ten years of graduation, and a grace period of three years will normally be provided. The scheme, as presently designed, envisages interest charges of 3 percent per annum for fees, and 5 percent per annum for stipends, with no grace period for repayment. If inflation continues at anything more than a very low rate, it will be necessary to charge higher rates of interest on the student loans if the final repayments are to be anything other than nominal. In the absence of higher interest rates, the loans will be de facto grants. That, of course, may not necessarily be a bad thing; but it is important to have concepts clear from the start. One benefit of requiring students to have sponsors before they can have loans is that links may be improved between training and employment. However, this linkage could become an undesirable form of rigidity if the graduates are bound to the employers and/or the employers are bound to the graduates for a full ten years after graduation.

101. A further question concerns the financial viability of the State Training Foundation itself, especially since in July of 1993 it did not yet have any money. The officer in charge of the fund hoped that in the first instance the Ministry of Finance would transfer to the fund the money which it would previously have paid to the higher education institutions for their variable expenses. Under the present plan, there will be no cost savings for government in the short run. It may, however, be possible to secure inflows from enterprises and other agencies. The committee in charge of the fund is chaired by the Minister of Science and Education. In mid-1993, the system was still evolving, and the nature of its final shape was still uncertain.

102. One apparent anomaly of the new payment structure was a continuing mixture of the old and new systems for assignment and recruitment of students. On the one hand, students were permitted to make their own applications to universities and colleges, to pay (outright or by borrowing money, either from the State Training Foundation or from a private sponsor) all fees if they were admitted, and to have subsequent freedom in the labor market. But on the other hand, the number of university places was still determined by the National Planning Board, including <u>both</u> the number reserved for students sponsored by ministries and local governments who are eligible for loans through the State Training Foundation and the number who will be expected either to pay themselves or be sponsored by a non-government employer. The overall number of these students had been determined by the National Development Board; the Ministry of Science

and Education had allocated them by specialization and region; and the receiving ministries and local governments had made further modifications in the admissions quotas.

103. In short, the process seems still to be proceeding as if there is a command economy with little or no consideration of student demand for admission to the various specializations. What is occurring, however, is that individual institutions are exercising some autonomy and expanding the number of students admitted (some by up to 25 percent above the approved quotas). These students will be selected from the next highest scoring applicants, will be mostly from Ulaanbaatar, and will have to pay their own fees. None of these students will be eligible for government loans because they are all being accepted outside of the quota system.

104. In 1993, therefore, aspects of central planning were still identifiable. Local governments were still being allocated quotas of people to sponsor, with the implication that those local governments would employ the graduates at the end of their training, thereby enabling the students to repay the loans. The system was still operating in this fashion even though the labor market included unemployed people who had already been trained. This means that, had they wanted to (and had the resources), ministries and local governments could have recruited at least some people who had already been trained and who did not have a loan-repayment "price-tag" attached to them. If the competitive market economy develops as planned, it seems likely that this system of quotas and allocation of training places must also change to take into consideration student demand for training (as well as their concomitant willingness to pay for it).

105. Another effect of the new system will be to increase competition between institutions as well as within the constituent units of institutions. Students who are paying their own fees will be especially keen to get value for money. Institutions and departments with poor reputations may find themselves short of students, even to the point of having to close. While this might appeal to advocates of free-market economics, it does also bear risks. It could lead to a major shift from such subjects as philosophy and history into such subjects as business and veterinary science. Broader issues of culture and nation building are involved here, and need to be considered carefully. Building purely demand-driven systems of enrollment and staffing of higher education institutions is not necessarily the most effective or efficient way of utilizing their full potential for national development.

106. This imposition of student fees in the public sector also presumably increases the possibility that students might choose to enroll in private institutions of higher education in which programs are perceived to be of high quality and/or the competition for places may not be as intense. Also, since most of the private institutions are very specialized, they may be able to mobilize their resources in ways that enable them to compete very favorably with similar programs in the public universities. Such a potential for significant competition from the private institutions exists for specializations

such as foreign languages which do not require heavy investment in facilities and equipment. In fact, the three largest private institutions of higher education (Otgon Tenger, Orkhon, and Tsog) all emphasize foreign languages.

107. The possibility also exists that students will try to leave the country for higher education in an effort to avoid paying the new fees. This seems rather remote because, while there are currently still close to 2900 Mongolian students studying in foreign countries, only 41 new students are expected to go away this year. During 1992-93, there were 142 foreign students studying in public higher education institutions in Mongolia and just 5 foreign students enrolled in private institutions. It is uncertain whether or not the foreign students enrolled in the public sector will be able to pay the new fees.

108. Despite attempts to protect lower income students through the loan arrangements, the fee-paying system also brings a threat of discrimination against students from poor families. In 1993, the system was operating in a mixed way. On the one hand, local governments and employers were assigning students to institutions according to quotas that had been assigned by the Ministry of Science and Education, sometimes without those students having been screened by the institutions themselves. On the other hand, students in Ulaanbaatar were commonly sitting for institutional entrance examinations, securing the results, and then seeking employers to sponsor them. In the latter arrangement, the authorities assumed that students who were bright but poor would be protected because the potential employers would see from the students' examination results that they were bright and would be keen to employ them. In contrast, students who were less bright but poor could find difficulty in securing sponsors. Their places could be taken by students who may have been even less bright, but who had enough money to pay for themselves.

109. Financially disadvantaged students may also be discriminated against by the change in the system of stipends from outright grants to loans. The new regulations do require considerable documentary evidence which may be difficult for some applicants to secure. Also, the State Training Foundation will give priority in its allocations to loans to cover fees rather than loans to cover stipends; and, as noted above, as of July 1993 the Foundation did not actually have money to pay for anything. The danger exists that some students may still be prevented from studying by the fact that they cannot afford to cover their living expenses while attending university.

110. The new system also brings a danger of further inequity in favor of students from Ulaanbaatar. Even in the old system, there was some bias because the majority of post-secondary institutions are located in Ulaanbaatar and because the urban schools are more closely fitted to further study than are the remote ones. It seems likely that emphasis on fees will further increase the inequity because (a) applicants from urban areas are more firmly in the cash economy and will therefore find it easier to secure the fees; (b) students in

Ulaanbaatar will find it easier to "shop around," comparing institutions and programs (including taking advantage of opportunities to attend a private higher education institution) and seeking admission to alternative courses if they are not successful with their first choices; and (c) students from Ulaanbaatar will not necessarily need stipends to cover living expenses because they can live at home with their parents.

111. An additional aspect of potential inequities concerns gender. Compared with other countries of comparable per capita GNP, Mongolia has a very high proportion of females in post-secondary education. This proportion may change as a result of the fee-charging policy if, as occurs in many countries, families and individuals prefer to invest in the education of males more than females.

112. A second form of cost recovery is income from enterprises conducted by institutions of higher education. For example, most have a canteen where employees can purchase lunch. Many maintain cattle and sheep. Fees are charged for short courses offered to various groups. There are a few small printing shops that contract for the production of flyers and other small publications. Yet another source of income is through contracts with companies for research and other services. Estimates for the proportion of total costs for 1993 that are covered through these types of income range from three percent at the Medical University to almost 14 percent at the National University.

113. Evaluation of Quality and Effectiveness. Given the limitations on facilities and equipment discussed in the foregoing, the higher education system manages to be remarkably effective. Instruction is delivered, students seem to be reasonably successful at finding employment after graduation, and some faculty even manage to programs of research. There does, of course, appear to be considerable variation in quality across programs within institutions as well as across institutions. In the absence of any real evidence on quality of the curriculum, it is very difficult to judge the level of preparation in Mongolia in comparison with bachelors degree study, either in other Asian countries or in Europe and the United States.

114. The Ministry of Science and Education has developed a set of criteria for the accreditation of higher education institutions that are shown in Table 5-15. These criteria are drawn primarily from standards developed by American accreditation associations, but adapted to the particular characteristics of Mongolian higher education. As can be seen from Table 5-15, the standards are being used for two, somewhat different purposes. One is to define three types of higher education institutions (national university, university, and college). The second is to define the level and type of faculty activity in a higher education institution that should characterize programs for bachelors, masters, and doctoral degrees. These standards are being used by a commission in the Postsecondary Education Department to review and assess the level of all public higher education institutions. As degree programs are submitted for approval, these criteria will be used to assess whether or not the requested degrees should be approved. While the present regulations say they should

apply to private institutions as well, there has been no enabling legislation authorizing this. The only standards currently applied to private institutions are those shown in Table 5-16.

115. This is clearly an effort by the Ministry of Science and Education to assess the quality of higher education institutions in Mongolia. Many commonly used indicators of faculty quality and student outcomes are included on the list of what are actually the "indices." The percentages listed are the "criteria" and the "percentages of indices met" establish the classification scheme for each of the three types of institutions. The only drawback of the system is that there are only two indices that refer to the actual quality of instruction that should characterize programs at each degree level: scientific information units per student, and percentage of students carrying out research work. What is missing from this list is a set of criteria about the actual type of instructional content and student work that should characterize each level of degree. For example, how much study of what subjects should be required for each degree? What are the international standards for the level of content knowledge that graduates should have? How much of the instruction should be in required subjects? In elective subjects? What evidence should be provided that graduates have mastered the required subject matter? All of these represent refinements that can be made easily as the accreditation process evolves. The important thing is to maintain the capacity to be somewhat flexible while still in the developmental stage of the process.

116. Another issue with respect to the instruction received by students in higher education is that they must rely heavily on rote learning and careful notetaking as opposed to studying material in current textbooks or using library resources for independent study and research. There is an expectation that students will be supplied with all needed learning materials by the higher education institutions rather than having to purchase any textual materials themselves. Hence, virtually all student learning appears to take place in the classroom where material is delivered by teachers. There appears to be only very limited supplementary work expected in the library. Furthermore, access to books is strictly controlled, so there is little opportunity for students to explore materials in their fields of study. This means that students in higher education are almost entirely dependent on their teachers for the content of their academic programs. Further, higher education in Mongolia is becoming increasingly self-contained. Neither students nor faculty can afford the costs of travel outside the country for advanced training.

117. A particular strength is that most higher education students in Mongolia do attend on a full-time basis and dropout rates are very low. As can be seen from Table 5-17, only 703 of 14,014 students (5 percent) enrolled at the beginning of 1992 actually left higher education permanently due to failing grades, disciplinary or criminal problems, accepting a job, or other unspecified reasons. Another 451 stayed within higher education, but transferred to another institution. What is perhaps more striking, taking all reasons together, a larger number of students returned to higher education during 1992 than left.

ANALYSIS

Needs

118. Four issues were raised consistently by university rectors in Mongolia: qualifications of faculty, quality of laboratories and facilities, library resources, and organizational structure. As is true for most parts of the world, Mongolian higher education institutions have very aging faculty, most of whom were trained under the Soviet system during the command economy period. There is concern that, without re-training and upgrading of their knowledge, many faculty will be ineffective in preparing their students for the expectations of market economy. Given the very limited access to books, journals, and other scientific materials, there is also concern that faculty will be increasingly less able to prepare students with the most up-to-date knowledge in their specializations. Instructional resources (especially computers and laboratory equipment) are often outdated and funds to acquire new ones are severely limited. Since the highly subsidized books, equipment, and other materials that had been provided by the Soviet Union are now available only at market prices, there is a real danger that the quality of Mongolian higher education will decline rapidly. Similarly, there is concern that research has already fallen far behind world standards.

119. Considerable improvement is also needed in libraries. Most higher education libraries are little more than repositories for student textbooks. Access to scientific information is very limited because of the high price of books and journals. In fact, often individuals who have access to such books prefer to keep them for their own exclusive use rather than finding ways to share them with colleagues. Libraries have no electronic databases which could be use by faculty and researchers to keep up-to-date in their fields, and they have no international information links via computer networks such as BITNET, a system of telephone and satellite communications lines that link computers throughout the world in a way that is funded largely through national agencies. Costs to individual institutions tend to be quite reasonable because they need only to pay the full cost of a local communication line (usually a telephone connection to the nearest participating computer installation). Of course, direct communication with others outside of Mongolia is generally quite difficult because of high telephone costs (not to mention an erratic, at best, phone system).

120. The fourth area of concern was the organizational structure of higher education in Mongolia. One aspect of this is related to the decisions made in 1991 that established several independent, specialized universities from what had been originally a single national university with several constituent faculties. Advisory bodies were established, the Higher Education Reform Commission by the Great Khural and the Rectors' Council by the Ministry of Education, but

neither has provided effective mechanisms for oversight and coordination because neither has a direct line of influence or authority in the higher education policy-making process. Some would argue that this has actually led to conflict over higher education policy-making between the legislative (Great Khural) and executive (Ministry of Science and Education) bodies of the government, fragmentation of the system, duplication of programs, and undesirable competition among institutions for scarce resources.

121. In short, there are serious problems with the solicitation and use of advice by executive and legislative officials, largely because Mongolian officials are accustomed to dealing only with decision- and policy-making in which there are established lines of formal authority. This also illustrates an apparent problem with division of responsibility between the legislative and executive branches of the government, which does not make a clear assignment of the policy-making responsibility to the legislative branch and the implementation of policy to the executive branch. At the moment, the Rectors' Council is probably more influential with respect to higher education than the Higher Education Reform Commission because the Council tends to be kept informed of regulations relating to higher education and reports directly to the Ministry of Science and Education through the Director General of the Postsecondary Education Department who also is a member of it.

122. A related organizational policy decision was to begin bringing the research institutes of the Academy of Sciences under the organizational umbrella of the universities, thereby integrating their scientific resources into higher education. This change would also, it was hoped, eliminate the separation of the research and teaching functions in higher education. Except for the agricultural institutes, the actual integration of them into the organizational structure of the universities is still in the very early stages and proceeding very slowly. Also, the integration of the specialized secondary schools that were renamed "colleges" into the universities has occurred without a clear definition of how this relationship might evolve. The colleges will have to receive substantial professional development investments (unlikely under current conditions) if they are to operate at the higher education level.

Existing Policies

123. The higher education reform law of 1990 encouraged the establishment of new universities from institutes that had either been independent or previously part of the National University. It also elevated two specialized secondary institutions that had been under the control of government ministries to the status of colleges, authorizing them to award bachelors degrees in the area of economics, finance, and commerce. This pattern of establishing autonomous institutions seems to reflect an underlying notion that shifting to a market economy requires that institutions be autonomous and expected to be responsible for their own success or failure, independent of the fate of similar or related types of institutions. As one senior official observed, the

"current decentralization is a misunderstanding of the real essence of democracy."

124. Simultaneously, there seems to have been a rejection of any sort of centralized oversight since that is perceived to be a holdover from the days of the command economy in Mongolia. Unfortunately, in the absence of any real system-level authority for monitoring the continuing development of higher education in Mongolia, there seems to be a real danger that initiatives are both overlapping and duplicating one another. This appears to be especially true with respect to the many developing programs (both academic degree and further education) for preparing people to work in organizations functioning under a market economy (e.g. programs in business, marketing, finance, and accounting are being developed in the NUM, the Technical University, the Economic College, and the College of Commerce and Business). To its credit, the Postsecondary Education Department of the Ministry of Science and Education has developed regulations for accreditation of institutions and has begun using them to review institutions and proposed new degree programs.

Plans

125. There is no clear strategic planning process for higher education at the national level, in large part because of the problems outlined in the foregoing paragraphs. This is an area of great need and efforts should be exerted toward the development of an effective higher education planning process. Currently, most of the universities and colleges are seeking support for their own particular needs rather than having requests reviewed by some oversight body that might set priorities and strategies for development of higher education within the total national context.

Constraints

126. The biggest constraint is quite simply lack of money. The economy of Mongolia cannot afford massive investments in the human resource and education sectors because there are too many other pressing needs, particularly those in the areas of energy, transportation, and communication. All of these, in turn, are quite important for the development of the higher education sector. There is no shortage of desire and enthusiasm among the Mongolian people for reform and improvement of higher education, but there is just not enough government funding available to make very many of the changes necessary to upgrade the system.

127. One major source of funds for upgrading and improving higher education is the fees that all students will begin paying in September. Unfortunately, in the short run the government will have to cover a large portion of these fees because it is the primary source of student loans. Until this loan fund becomes entirely self-perpetuating through re-payments, the net amount of funds released for developmental purposes will be very small. It must also be remembered that there is

a tendency for government to reallocate cost savings from one sector to spending needs in other sectors, so a concerted effort will have to be made to reserve some of the cost savings for developmental purposes in higher education. The other way to increase higher education revenues would be to increase the number of self-financed students; this would require a significant relaxation of the admission quota system and that would probably require full cost tuition to prevent the government from incurring additional budgetary obligations.

128. Equity. There is an interesting anomaly in Mongolian higher education with respect to equity. On the one hand, women predominate. As Table 5-18 shows, 64 percent of all students pursuing academic degrees in Mongolia are women. In fact, in all major fields except mathematics/computer science, engineering/architecture, and transport/communications, women comprise at least half of the enrolled students. As is shown in Table 5-5, even at the Technical University, almost half of the 1993 graduates were women. Not surprisingly, almost 41 percent of all students enrolled in higher education come from Ulaanbaatar. This is certainly due to the concentration of the national universities in the capital city, but also reflects, to some degree, the relatively high quality of secondary schools there. The system of determining admissions quotas does virtually guarantee that each students from each city and aimag will have the opportunity to attend higher education, so all of the aimags had between 400 and 600 students enrolled during 1992-93, except for the remote aimag of Bayan-Ulgyi which had only 280.

129. On the other hand, the proportion of women teachers does not reach the proportion of women studying for bachelors degrees in any of the universities except at the Institute of Foreign Languages which is now part of the Pedagogical University. This stands in sharp contrast to the newly developing Economic College and College of Commerce and Business, where women are well-represented on the faculty. However, the distribution of students at the post-bachelors level from which higher education faculty are primarily drawn provides a very different picture. In 1992-93, only 16 percent of those studying for an advanced degree beyond the bachelors were women, and fewer than 10 percent of the advanced degree recipients in 1993 were women. This suggests that concerted efforts will have to be made to increase significantly the numbers of women enrolled in advanced degree programs if their representation on the higher education faculties is to begin moving toward the proportion of female graduates at the bachelors degree level.

130. Women are also not well-represented in university administration; only one woman holds a senior administrative position in any of the public higher education institutions, a vice rector at the University of Art. Things are quite different, however, in the private higher education sector. The founders (all also the current rector) of four private institutions (Otgon Tenger, Orkhon, Onol, and Gurvan Erdene) are women, as is the rector of a fifth (Mongolian Script Institute). With respect to other types of jobs, there is no difference in the employment rates of men and women with higher education, largely because student spaces have been allocated on the

basis of manpower needs.

131. Internal Efficiency. The primary problems with internal efficiency have to do with funding levels, duplication of facilities and programs, and the variation in per student costs between institutions. As has already been mentioned, each higher education institution is currently operating quite independently of others which may have similar programs and/or resource needs. Consequently, there is no real cooperation or coordination among institutions, except on an occasional project.

132. Even though a tuition fee payment system will be started in September of 1993, individual institutions are not free to increase revenue by increasing admissions in high demand areas such as foreign languages and business. Enrollment quotas are set by the National Planning Board, though individual institutions can extend offers of admission to additional students whose entrance test scores are high and who are willing to pay the fees on their own. There is also some uncertainty about the new fee system because (a) the State Training Foundation which is supposed to receive government funds to provide student loans had not been appropriated any money by late in July of the year the fees were to be initiated, and (b) it is not known how many fee-paying students will actually enroll in September of 1993.

133. Estimates of per student costs show that most of the universities are within a reasonable range of one another, except for the Pedagogical Institute in Khovd (now part of the National University) and the National Agricultural University which are both much more expensive. In both instances, careful analysis needs to be made with respect to the enrollment capacity and decisions made about whether to reduce the size of the faculty or increase enrollments (if that is possible) if per student costs are to be reduced. In addition, the ratio of total employees to faculty is rather large in the universities, ranging from almost two to just under one staff employee for each faculty member (Table 5-8). It is not clear that higher education institutions actually need to employ so many staff people. Because salary schedules are set by the Mongolian government, there is a very small range between the highest and lowest paid staff members in higher education institutions. Consequently, reductions in the numbers of non-faculty positions would result in significant cost savings that could be reallocated to faculty.

134. External Efficiency. Unemployment data suggest that those who earn degrees in higher education do very well in the workplace, constituting only 1.8 percent of the unemployed. Also, data from the Rector of the Technical University suggest that virtually all graduates, with the single exception of those trained in fields related to construction, find employment immediately upon graduation. Of course, as has already been mentioned, enrollment quotas are still being set at the national level, regardless of student demand for certain specializations. As long as manpower projections driving these quotas are accurate and they continue to be used for higher education admissions, graduates are virtually assured of employment. However, as the many state enterprises are privatized, employers may be reluctant

to request specific kinds of graduates. This, along with increasing consideration of student demand in the admissions process, may result in increased difficulty for graduates to obtain employment. Of course, even under conditions of reduced demand for graduates, people who have completed a higher education degree are still likely to have much lower unemployment rates than those with less education.

135. Summary Analysis. The higher education sector is functioning reasonably well, considering the serious shortages of instructional materials and deterioration of physical plant. It is, however, rapidly losing its capacity to prepare students whose training is competitive with world standards. The scientific research establishment in Mongolia is also suffering because it, too, is increasingly not competitive with world standards. Hence, if graduates of Mongolian higher education institutions are to be prepared adequately for the demands of a world economy and for the future development needs of the country, there is a need for some major organizational reform through more effective coordinating mechanisms as well as an infusion of funds for a variety of instructional materials and equipment.

OPTIONS FOR POLICY AND PRACTICE

136. Organization of Mongolian Higher Education. The recent changes that resulted in the decentralization of Mongolian higher education should be reviewed and analyzed carefully. There appear to be serious problems with fragmentation, duplication of programs and facilities, and competition among institutions for scarce resources. One alternative would be to consolidate the now independent universities into a single, comprehensive institution as was the original structure when what is now named the National University of Mongolia was founded in 1942. There are certain economies of scale that would be realized under such a consolidation, especially enabling the concentration of resources on improvements that would benefit more than a single faculty. Such a consolidation should include bringing the regional postsecondary colleges under the administrative control of the university.

137. A second alternative would be to establish an administrative structure at the national level which would have overall authority for the universities but allow individual universities to maintain an appropriate level of institutional autonomy. Examples of this pattern are the State University of New York or the University of California System which have an administrative office responsible for the entire system of universities they encompass but also have separate administrations for each individual university. A third alternative for accomplishing a similar objective would be to maintain separate universities, but establish an effective planning and monitoring agency that would oversee higher education in Mongolia and have the authority to establish system-wide priorities and policies. This is not to say that current bodies could not accomplish this task, and the Higher Education Reform Commission might be an appropriate agency, but conditions of operation and understandings about responsibilities and authority would have to be established in a clear and consistent way in order for it to be effective.

138. Integration of Research Institutes within Universities. There should be a continuing effort to integrate the faculties and researchers from the Academy of Sciences into the Universities. This is proceeding in the Agricultural University but has made little progress elsewhere. The Institute of Technology should be merged with the National University or the Technical University and used to strengthen graduate programs in technology.

139. Retraining of Faculty. Because of the age of faculty, most received their training under the Soviet system of higher education. Also, many faculty in the new higher education institutions do not meet the basic standards of such programs. Further, because of problems with access to scientific materials, it is increasingly difficult for them to keep up with advances in their areas of specialization. One alternative is to send faculty abroad for additional training. A second is to bring in scholars from abroad to conduct lectures and seminars in Mongolia, probably the more cost-effective alternative. A third alternative is to establish exchanges with partner universities in other countries.

140. Improving Facilities, Equipment, and Libraries. There should be a careful inventory of facilities and equipment held by each institution that is reviewed by a central body for the purposes of targeting areas needing upgrading as well as to identify unnecessary duplication. The initial focus should be on resources for instruction, with facilities to be used primarily for research a secondary concern, at least in the beginning stages of this process. A similar inventory should also be done of library holdings in each higher education institution. Ideally, these holdings should be catalogued on an electronic data base that would be accessible to users and researchers. These types of inventories can be used to identify priorities and solicit donor funding. It must be emphasized, however, that external funding may provide start-up or initial acquisition costs, but most agencies are not willing to fund long-term costs of maintenance and equipment upgrading. Institutions and the government will also have to be working together to develop the capacity to provide continuing funding for externally funded initiatives.

141. Improving Scientific Communication. Because of the high costs and relatively low coverage of books and limited journal subscriptions, there should be an assessment of the feasibility of establishing a link into the international computer communications network already used by scientific researchers in many parts of the world that would be accessible via modem. This would greatly facilitate the exchange of research and scientific information with colleagues in other countries. There should also be an exploration of the feasibility of purchasing electronic data bases on CD-Rom that would provide inexpensive access to scientific information. Related to this is the provision of support for faculty to reproduce the results of their research and curriculum development work. Access to secretarial staff, word processing, and facilities for printing and duplication is an important resource for these activities.

142. Planning, Policy Analysis, and Monitoring. While there is a

great deal of information collected routinely by the Ministry of Science and Education, there should be greater standardization of this activity so that information is readily available and consistent from year to year. An effort should be made to develop a "data dictionary" which would catalog all of the types of information that are collected. There should be a policy analysis section that would be responsible for producing annual reports about the status of education in Mongolia and for providing analyses of policy. This unit should be responsible for studying all levels and forms of education and needs to be relatively independent and free to present its findings, whether or not they support existing policies.

143. Accreditation. There is a need for the ongoing work on higher educational institutional quality assessment and accreditation to be continued and refined. Institutions should be reviewed periodically to make certain that they are maintaining high standards in their programs. Standards and processes of review should be similar for both public and private institutions. An accreditation body should be established for this purpose that might also assume the responsibility for curriculum review and working with faculty to establish standards for programs in their areas of specialization. The accreditation agency should also be concerned with establishing international equivalencies for higher education degrees in Mongolia. This might include consideration of a uniform system of student examinations and standardized instructional units (e.g. credit hours).

CHAPTER 6

VOCATIONAL-TECHNICAL AND NONFORMAL EDUCATION

1. Vocational and technical education are important components of the education sector because they are one source of the trained manpower on which Mongolia's economy depends. A majority of manpower training occurs through organized means (formal schooling) and to a lessor extent through nonformal means such as out-of-school training. The formal Mongolian manpower training structure makes a clear distinction between vocational education and technical education. Vocational education is training aimed at craft or trade skill development for jobs such as welders, cooks, waiters, shop assistants, herdsmen, and farm mechanics. These are the people who actually operate machines and tools to produce goods or provide personal services directly to clients. In more complex or high technology work situations, operatives carry-out tasks in conjunction with or under close supervision of technicians.

2. Technician training is the other major group for which job training is provided. Technical education involves academic and occupational training aimed at developing higher order skills and knowledge -- such as evaluating, analyzing and synthesizing. Such higher order training prepares manpower for technician or semi-professional grade work. This level requires people who are capable of translating theory into practice. Technicians and semi-professionals are often the bridge between engineers and operatives. Some may hold bachelors degrees, others may not. The nature of the profession will determine whether or not a degree is required -- the more highly complex or technical an area, the more likely a degree will be required for full employment. A bachelors degree is more likely to be sought by someone seeking work as a technologist, engineer, or researcher. The distinction between vocational and technical education and higher education becomes clouded when the granting of degrees is considered. This section will focus on the means by which operatives, technicians and semi-professionals are trained and only peripherally on the institutions providing higher level education leading to degrees.

3. Nonformal education is an equally important part of the education sector because it touches those people who do not have easy access to programs in the formal education system. Review, analysis and description of the goals and priorities of the nonformal education subsector is difficult because there is little documentation and/or action to illustrate a comprehensive effort at organizing this subsector. Nonformal education efforts are independently directed at meeting the learning needs of specific subgroups at the national level or in targeted rural settings. These learning activities are carried-out by international non-governmental organizations (NGOs), voluntary agencies, church affiliated groups and enterprises. Each uses their own structure and means to carry-out unique and specific functions.

4. This section describes the status and complexities of

vocational and technical education and nonformal education. Relationships between the two subsectors are elaborated in hopes of providing an understanding of the individual and collective potential of each. Status, goals, priorities and institutional and system structures are described. Programs are described according to enrollments, institutions, curriculum and resources. Component parts are analyzed in terms of needs, policies, plans, constraints, equity and internal and external efficiency. Issues and options for policy, practice and further study are presented in concluding statements.

STATUS

Historical Setting

5. Prior to 1921 a formal vocational education structure did not exist in Mongolia. A rural society produced what it needed through independent efforts. Skills required to produce clothing, food, and other necessities were taught in a nonformal manner. Elders often taught the young. As people began to gather in settlements and cities their lifestyle required different products and services. These needs, in turn, required workers with new and different skills. Only through organized training could these skill be acquired. Therefore, the first vocational schools were organized in selected aimags to meet the needs of a changing society. An increased need for formalized vocational education arose (1921 to 1933) when newly formed industry, transportation, trade and communication sectors along with infrastructure development called for increased numbers of skilled workers. Unable to fulfill this need through traditional training means, vocational schools were established within factories and cooperatives. Apprentice training emerged as a primary means of developing desired skills.

6. The next 30 years saw continued need for more qualified workers as industry and commerce expanded. Specialized vocational primary schools were opened in Ulaanbaatar. Industry and agriculture schools were also established to aid and abet development of the mining and agriculture sectors. It was during this period that Mongolian learners were first attached to Russian masters. The Soviet training system greatly influenced development of formal technical vocational training in Mongolia.

7. In 1963 the "Great Khural" (Parliament) adopted legislation strengthening the link between the school and life -- thus developing a public education system. For the first time, goals and objectives were specified for technical and vocational schools. There followed a period in which technical vocational and education flourished. Construction schools were established in Ulaanbaatar and in aimag centers (1964-1965). Secondary vocational training with three years of schooling was initiated in 1978-1979. Three kinds of technical and

vocational schools emerged -- those providing two years of training for eighth grade graduates of general education schools, those offering one year of training for tenth grade completers of secondary schools, and those at the secondary level providing three years of training. This system worked reasonably well until 1990 when Mongolia embarked on a program of transition to a market economy. Because the system was designed to meet the exigencies of a planned economy it encountered difficulties meeting the training and retraining needs of the transitional economy.

Goals and Priorities

8. The Education Law of 1991 constitutes one of the significant steps toward making the education sector, in general and the vocational and technical education subsector in particular, appropriate for a market economy. The new constitution which was adopted in 1992 ratified the basic tenants of the Education Law. The respective roles of public and private vocational and technical training institutions are recognized, as was the need to combine formal and nonformal means of education. Nonformal education carried out by non-governmental organizations, businesses, industries and individuals is encouraged. National policy places responsibility for training operatives and technicians with vocational and technical institutions and states that they are responsible for the quality of the graduates. It further states that such institutions must adjust instructional content and in-plant training to meet the needs of a changing workplace.

9. Vocational and technical education, by virtue of its key role in national development, is an important component of the government's social policies and programs. Therefore the government supports actions taken to strengthen Mongolia's system of manpower development through vocational and technical education. Since passage of the 1991 Education Law, a new approach to development of the vocational and technical education system has provided for structural and organizational change, as well as modifications in methodology and content of workforce training programs. Specific goals and priorities for the vocational and technical education system are evolving and have not as yet been documented, approved and adopted. During this developmental phase efforts to contribute to national development through vocational and technical education are being guided by group and individual interpretations of the 1991 Education Law. Those articles of the Law appearing to form the basis for and serving to guide actual (though not formally approved) workforce training reform include, but are not limited to:

Article 3

3.1 There must be discrimination free education.
3.2 There must be free, open and varied training methods.

Article 6

6.1 Education must be provided through formal and nonformal means.
6.2 Nonformal education may be conducted by citizens, institutions and/or enterprises.

Article 16

16.1 Provisions must be made for practice in cooperating enterprises.
16.3 Schools must enter into formal agreements with practicum sites.

Article 22

22.2 Teachers must carry out training that is based on scientific knowledge and in coordination with production activities and life requirements.
22.4 Teachers must provide students with the ability to succeed in daily life.

Article 27

27.1 Enterprises and organizations may enter into agreements and contracts with individuals for the purpose of providing specialized training.
27.2 Enterprises and organizations may make suggestions for individual trainee contracted training plans.
27.3 Enterprises and organizations may support/sponsor professional training organized by educational institutions.

10. These articles, in combination with others, serve to point the way for reorientation of the vocational and technical education system. That way provides for structural and organizational reform at the system and institutional levels. It is reform leading to educational equity for all citizens. That equity will be achieved through revision of curriculum and programs, development and retraining of teaching staff, linking public and private interests, and combining formal and nonformal education methods.

11. There is little evidence to suggest that comprehensive goals and priorities exist for nonformal education. Two efforts, however, hold promise as vehicles for lending direction to and providing structure for a comprehensive nonformal education system in Mongolia. The first effort occurred in June 1992 when a national workshop on the preparation of literacy follow-up materials was conducted in Ulaanbaatar and Argalant somon. The workshop was jointly organized by the Ministry of Science and Education of Mongolia and the Asian Culture Center for UNESCO (ACCU), in cooperation with UNESCO and National Commissions of Mongolia and Japan. While the workshop developed

materials for school drop-outs and for housewives of nomadic families, it also provided momentum for development of a non-formal education system in Mongolia. Workshop participants adopted a set of recommendations directed at three parties -- the Mongolian Ministry of Science and Education, ACCU, and UNESCO.

-Recommendations to MOSE

-Work out a plan for setting-up a nonformal system.

-Establish institutions responsible for nonformal education.

-Organize national and local workshops for introducing nonformal education.

-Expand research work carried out in the field of nonformal education.

-Introduce nonformal education issues into the curricula of universities and other educational institutions.

-Recommendations to ACCU

-Assist in supplying Mongolia with printing equipment and financial support necessary to develop nonformal education.

-Assist in conducting the national workshop for teachers of nonformal education.

-Invite Mongolians to participate in regional and sub-regional meetings and workshops on nonformal education.

-Provide Mongolia with information and papers published by ACCU.

-With assistance of UNESCO, conduct joint ACCU and Mongolian surveys of nonformal education in Mongolia.

-With assistance of UNESCO, support projects in nonformal education.

-Recommendation to UNESCO

-Support establishment of nonformal education in Mongolia and extend necessary technical and financial assistance.

12. The second way concepts and programs of nonformal education are being introduced to the Country is through the goals of the National Program of Action (NPA) of Mongolia. The NPA reflects the aspirations of the Government for the betterment of its children and is based on the goals called for at the World Summit for Children (1990).

While seven major goals and 20 supporting ones were adopted for achievement by the year 2000, two directly influence the nonformal education sector.

1. Educate an estimated 60,000 children who dropped out of schools and who are considered illiterate.

2. Reduce the adult illiteracy rate by 50% of 1990 levels by the year 2000.

13. This requires an action program to: 1) initiate nonformal education activities to cover 80 percent of dropouts through evening courses, correspondence and distance learning and 2) introduce through a national seminar the concept and programs of nonformal education to increase adult literacy and to address the problem of drop-out from primary schools.

Institutional and System Structures

14. Institutional and system structures designed to train and retrain qualified operatives, technicians and semi-professionals are in transition. At this time Mongolia provides formal workforce training at the secondary, postsecondary and higher education levels. The formal training structure consists of distinct, yet interrelated components providing operative, technician, semi-professional and degree level training (Figure 6-1). A complete listing of institutions reporting that they provide subjects for vocational and technical education is shown in Table 6-1. One of the major system components includes single and multi-step training and production centers (TPC). These centers were created by closing and/or combining all but three of what were formerly known as secondary vocational and technical schools. The three remaining secondary vocational and technical schools continue to provide limited operative training. The TPC's are part of a three-step training structure. They focus on operative training at the first step and higher order training at steps two and three. Completion of step one enables the graduate to enter the labor force as an operative. Successful completion of steps two and three qualify the graduate as an operative and/or a technician or semi-professional. Graduates of three step institutions may elect to continue their training by entering a higher form of education -- institute, school or college.

15. A second structural component includes institutes, schools and colleges. Some were formed through a combination of institutions that were formerly postsecondary technical professional schools. Among their many offerings, these new institutions develop higher order skills and knowledge for those students wishing to enter the labor market as technicians or semi-professionals. Some of these same institutions also deliver selected operative skills training. Universities too, play a role in the preparation of a qualified workforce. While not delivering operative training, these institutions

provide a means by which technically or semi-professionally trained graduates of TPC's, step schools, institutes, schools and colleges can earn bachelors, masters and doctorates degrees.

16. Training and production centers are one of the key means by which vocational and technical education are delivered. Their structure is part of a three-level, three step configuration. It includes 26 TPC's at levels one and two. The third level includes four institutions -- two colleges, one school and one institute. There are 22 level one training centers who provide one to two years of operative skill training for graduates of grades eight and ten. Sixteen level one training centers are located in the provinces and provide a general mix of vocational skill development appropriate to the locale. Four specialized level one training centers are located in Ulaanbaatar -- two construction and one each energy and public service training centers. Two level one specialized training centers are located outside Ulaanbaatar -- one light industry center in Erdenet and a construction training center in Darkhan. Graduates of level one training centers enter the labor market as operatives who possess hand, tool, and machine skills required by crafts, trades or service enterprises. Because these graduates possess only basic skills they cannot enter a level two or three training program.

17. There are five level two industrial training centers who provide two-step training in 2 to 3-1/2 years for eighth grade graduates. These centers prepare operatives at the first step in 2 to 2-1/2 years and technicians or semi-professionals at the second step in 3 to 3-1/2 years. At level two - step one, operative training is more theoretical than what is experienced at level one. Students cannot transfer from one level to another. Three level two training centers are located in Ulaanbaatar and provide training in light industry, food and construction. One agriculture level two center is located in Dornad. A construction training center serving as both a level one and two training center is located in Darkhan. Training centers are attached to the Ministry of Science and Education (MOSE). Relationships between the Ministry and training centers will be described in the section on administration.

18. The third level of the structure is comprised of four individual three-step institutions. They accept both eighth and tenth grade graduates and prepare them in up to three steps for work as operatives, technicians, engineers, technologists or researchers. Level three institutions include the College of Agriculture at Bayanchardman (operated under the auspices of the Agriculture University) and three institutions in Ulaanbaatar. These institutions include the Transportation School and the Information Technical Institute, both of which are associated with the Technical University. The fourth level three institution is the Railway College which is an independent organization.

19. A comprehensive structure for nonformal education does not exist. However, a significant step toward achieving a national

structure for nonformal education was taken on 27 May 1993 when the National Program of Action (NPA) was approved by the full body of the Cabinet. This action has created a working committee to coordinate and monitor implementation of the NPA in collaboration with the United Nations Children's Fund (UNICEF). The working committee is chaired by the Minister of Labor and Population Policy (MLPP). The National Development Board (NDB) and the MLPP are directed to ensure that the NPA becomes a part of the Program of Action for the Government. The National Center for Children (NCC), a special unit of the MLPP, has been designated by the Government to take charge of coordinating and monitoring implementation of NPA. The NCC, as coordinating body, is charged with securing close cooperation and well linked complementary activities of government agencies such as NDB, MOSE, MOH, MFA and others. In particular, the MOSE is responsible for attainment of the NPA goals in early childhood development, general education and literacy. Together with the General Department of the Police and the NCC, the MOSE is also responsible for implementing programs for children in especially difficult situations. The NCC is also charged with mobilizing active support to NPA by non-governmental and religious organizations, public and private organizations, and trade and service units in all sectors. The NCC and cooperating agencies are further responsible for enlisting as wide as possible support and assistance from bilateral and international NGOs and charitable organizations for implementation of NPA objectives.

Programs

20. Trends of Enrollments and Institutions. Enrollments in vocational and technical education have been declining since 1990 (Table 6-2). The number of enrolles in vocational and technical schools at the secondary level (now called TPCs and step schools) declined by 17,382 students during a three year period. Only 194 students enrolled in foreign vocational study in 1992 whereas 2,636 were enrolled in similar programs in 1990. New admissions were off by 5,705 registrants over the period. The decline in graduates from secondary level schools (TPCs and step schools) is illustrated in Table 6-3). Shown by vocational specialism and year of graduation, the figures illustrate reduced output in all five reported vocational areas -- agriculture, construction, industry, trades and public service.

21. During the 1990 school year approximately 45 percent of the TPC student population was female. In 1991 there was an unexplained drop in female enrollment to only 36.5 percent of the school population. Female representation dramatically reversed itself in 1992 when it accounted for approximately 52 percent of the student population thereby achieving equity balance by gender.

Gender	1990	1991	1992
Male	14,481	11,351	3,786
Female	11,950	6,340	4,047

Total	26,431	17,691	7,833

22. September 1993 enrollment estimates for TPCs suggest still further reductions in student numbers. Table 6-4 illustrates the number of available TPC seats and September enrollment projections by location (city) and region. For the country as a whole, there will be 5,139 vacant seats at the TPCs in fall 1993. Those TPCs located in cities will have 1,015 unused seats. The central region will have the greatest number of unused seats with 1,790 vacancies. The western region has the next highest vacancy rate with 638 empty seats. The southern, northern and eastern regions follow with 692, 603 and 401 unused seats respectively. A continued decline in enrollments and subsequent under utilization of training capacity is, in part, caused by collapse of the command system wherein the State ordered-up exact numbers of people to be trained for specific jobs. Those jobs are no longer available, but the seating capacity is. Lack of student interest in schooling, particularly in the rural areas, may be the result of privatization of livestock offering new opportunities for herders to make money. Urban students too, may wish to try their hand at earning a living through trade, rather than attending school. In combination with a compressed job market, these factors contribute to under-used training capacity at all levels.

23. Labor market needs are determined on a yearly basis using a process carried-over from the former command training system. This yearly survey of needs is conducted by the Ministry of Science and Education through the Economics and Social Welfare officer. He gathers employment needs information with the assistance of designated personnel in each of 18 aimags and four cities. Local personnel identify how many and what kinds of workers are needed by both State and private sector employers. Local information is submitted to and analyzed by the MOSE officer-in-charge. Employment needs of all Government ministries are also included in the analysis. Needs are reported by major occupational area and specialization according to locality and by public/private sectors. These needs are checked against available job market information in the Ministry of Labor and Population Policy where discrepancies are resolved. Verified labor market needs serve as a basis for ordering-up training for specific numbers and types of job titles. The following number of training slots by occupational area were ordered-up based on the 1992 survey.

Occupational Area	Number
Construction and Transportation	70
Economics and Business	306
Communications and Electronics	30
Agriculture	58
Science	9
Food Industry	29
Commerce	3
Plumbing and Piping	430
Mining	47

Operatives	2,642
Total	3,624

Because the labor market is in such a state of flux, officials admit their information may well be obsolete by the time it reaches the training centers and schools. Officials recognize the problems associated with the transitional economy and are seeking better ways of determining labor market needs.

24. Specialized postsecondary technical/professional programs (many of whom have been reassigned to institutes, schools and colleges) registered similar declines in student numbers. There were 18,476 students enrolled in specialized postsecondary programs in 1990. Just 8,703 students registered in these institutions in 1992-93. During the three year period, local enrollments in specialized postsecondary programs declined by approximately 53 percent and foreign programs by approximately 32 percent. New admissions for both local and foreign study programs declined. Local admissions were off by 3,428 students during the period. Just six foreign admissions for post-secondary technical and/or professional study were granted for 1992 in contrast to 209 in 1990. The foreign study program has been dramatically reduced because support has been withdrawn from its primary sponsors -- the former Soviet Union and eastern European countries. Efforts will need to be made to revive the foreign study program with market driven economies thereby providing students with direct experiences in such environs.

25. Following the shift to a market economy, increasing numbers of youth dropped-out of the formal education sector. A lack of interest in further education may be a combined result of the change to a market economy, privatization of livestock offering financial rewards for livestock breeders, elimination of stipends for vocational students and boarders, and the prospects of a tuition fee for all students. The tuition fee is scheduled to go into effect in September 1993. Its influence on school drop-outs remains to be seen. The drop-out rate at the end of the sixth grade is reportedly five percent. By the end of the eighth grade the rate is reported to be 37 to 45 percent and by the end of tenth grade the drop-out rate is 67 to 70 percent. There is little documented evidence to suggest that the needs of the drop-out are being served through either the formal or nonformal education sectors. There is one project that did, for two years, provide job training for rural unemployed youth. In 1992, the Ministry of Labor and Population Policy determined that there were 20,000 unemployed eighth and ninth grade graduates in rural areas. The Ministry distributed 3 million tugrugs to labor organizations in local aimags where there was documented high youth unemployment. The local recipient organizations conducted 45 day to six month long training sessions for 1,514 unemployed youth. Sixty-five different courses were delivered in areas such as shoe repair, cooking, and food services. There was no follow-up of program completers. The program has been discontinued due to lack of funds. While lacking documentation, the

project does provide an information base upon which to build subsequent youth training activities.

26. In May 1993, 55,343 Mongolians were reported by the Ministry of Labor and Population Policy as out-of-work. There were 13,677 graduates of training and production centers reportedly out-of-work at that time. This group represents 24.7 percent of the total unemployed. Out-of-work professional and technical trained graduates numbered 4,021 accounting for 7.3 percent of the unemployed. Those persons with higher education accounted for 1.8 percent of the unemployed. A large number of persons, 36,641, classified as "other" accounted for 66.2 percent of the total unemployed population.

27. Declining enrollments and passage of the 1991 Education Law have given impetus to structural and organizational change at two levels of vocational and technical education. Most specifically vocational and technical secondary schools and specialized postsecondary technical/professional schools have undergone reorganization. Where there were once 44 vocational and technical secondary schools, there are now 28 training and production centers and step schools. There were 31 specialized postsecondary technical/professional schools in 1990. Through reassignment of functions to institutes, schools and colleges that number of institutions has been reduced to 14.

Type of School	1990	1991	1992
Technical Vocational Secondary	44	40	28
Specialized Postsecondary	31	32	14
Total	75	72	42

28. Teachers There have been dramatic reductions in numbers of vocational and technical education teaching staff in the past three years.

Teachers by School	1990	1991	1992
Technical-Vocational Secondary	1,817	1,142	746
Specialized Post-Secondary	1,260	1,260	460
Total	3,077	2,402	1,206

During this time the total number of vocational and technical teachers declined by 1,871 persons. Teachers in training and production centers (formerly secondary technical vocational schools) experienced the greatest reduction in force with 1,071 positions becoming redundant. Vocational and technical teacher reductions in institutes, schools and colleges (some of which were former specialized postsecondary technical professional schools) number 800. Vocational and technical teachers

reportedly provide instruction at four levels of the formal public education structure -- TPCs, step schools, institutes, colleges and universities. They do not deliver vocational instruction (operative training) in either professional education schools or private institutions (Table 6-5). Vocational and technical education teachers do provide varying levels of specialized technical instruction at all TPCs, step schools, professional secondary schools, colleges, universities and private institutions. The primary focus of their instruction, however, is at the training and production centers and step schools.

29. A profile of vocational and technical education teachers by gender, years of experience, age and professional preparation follows. There were nearly an equal number of female and male teachers delivering instruction in training and production center programs in 1992 (501 females and 505 males). This represents a decline of 477 female and 334 male teachers during a three year period.

	1990	1991	1992
Male	839	556	505
Female	978	586	501
Total	1,817	1,142	1,006

30. The number of years teaching experience of vocational and technical teachers is shown in Table 6-6. Approximately 65 percent of the TPC teachers have less than 15 years experience while nearly 51 percent of the step school teachers possess 15 years or less experience. These teachers, which represent a majority of those teachers directly engaged in delivery of vocational and technical instruction, mirror the experience level of all teachers in professional schools, colleges, and universities. Approximately 56 percent of all those teachers possess between one and 15 years of teaching experience. This group of teachers represents a large and valuable resource that will influence the direction and quality of vocational and technical education for years to come. For them to grow professionally and in turn contribute positively to education, they will require continuing renewal and retraining opportunities. The professional development of this group will be both a problem and challenge during this time of declining resources.

31. The age distribution of vocational and technical education teachers is not unlike that of their colleagues in professional schools, colleges, universities and private institutions (Table 6-7). The largest number of vocational and technical education teachers are between 30 and 50 years of age. The next largest group is less than 30 years of age. Slightly less than seven percent of the TPC teachers and approximately 10 percent of the step school teachers are 55 years of age or older.

32. Three hundred-sixty TPC teachers received their preparation at universities or higher institutions with 298, 70 and 18 teachers receiving their education at colleges, special secondary schools and secondary schools respectively (Table 6-8). Approximately 77 percent of the step school teachers received their training at higher level institutions, none at colleges and approximately 23 percent at the secondary level. Prior to 1991, vocational school teachers were graduates of higher education institutions with teaching qualifications for vocational schools. Additionally, the former German Democratic Republic and the USSR provided visiting master teachers to Mongolian institutions. Engineers from industry also provided another source of vocational teachers. They were provided with short courses and seminars to help them develop teaching skills. This practice has been discontinued due to the lack of funds. The specific nature of vocational and technical education requires teachers possess a unique and specific blend of educational and practical experiences unlike those needed by their teaching colleagues in non-vocational or non-technical programs. Qualified vocational and technical teachers are deemed to be those who possess an appropriate blend of higher education along with actual experience in the operative or technical area for which instruction is given. Maintaining that quality through continuing professional development will be a challenge in the transitional economy.

33. A five-step teacher salary schedule is shown in Table 6-9. To offset the cost of living, the Government has decreed a two-step 3,000 tugrug adjustment to each teachers salary. The first installment was paid on May 1, 1993 and the second will follow in September 1993. The salary range for a TPC teacher is from 3,500 tugrugs per month at the first level to 4,700 tugrugs a month at the fifth level. If employed during 1992-93, that person will also receive the 3,000 tugrug cost of living allowance. For example, a teacher working at the third step of the salary schedule can expect to earn 4,100 tugrug per month plus the cost of living adjustment. Depending on the operative or technical area in which the vocational and technical education teacher is delivering instruction, his industrial counterpart can make as much as three-to-four times more tugrugs a month as can the teacher. This leads to the loss of good teachers and lowered morale among those who remain in education.

34. Curriculum. The course of study followed at training and production and centers represents a substantial part of the Nation's formal effort to provide vocational and technical education. These centers provide training in three broad curricular areas -- agriculture, construction and industry -- each offering instruction in 15, 24 and 70 professional specialties respectively (Table 6-10). For example, the course of study in agriculture covers professional titles such as herdsman, tractor and agriculture machine operators and well and irrigation system operators. Sample job titles for which the construction curriculum prepares operatives includes carpenters, construction electricians and painters. The third course of study followed by TPCs encompass industry-based professions such as cook, fur

sewer, meat processor and heating equipment repair persons. The length of the school year for both students and teachers is approximately 36 weeks. Some programs may run longer due to the nature of the profession and its requirements for practice at the worksite. Students spend approximately 36 hours per week in school. They attend classes six days a week. The primary language of instruction is Mongolian. Some highly specialized and technical courses may occasionally be taught in Russian.

35. Curriculum, to a large extent, reflects the needs of the former command system where specific numbers of students were ordered trained in narrow specialties. This training is characterized by a collection of long-term school-based courses of one, two and three years in duration. Changing workforce needs may well require a judicious mix of short and long-term instruction both in-school and out-of-school. These experiences will need to address job orientation, career planning, pre-occupational training and retraining.

36. Vocational curriculum must be developed in new areas that address the changing nature of the labor market. For example, training and complementary support for self-employment should be more fully developed to meet the needs of a growing number of private enterprises. Courses of study need to be developed for new training purposes in the emerging banking and financial sector, small-scale trading, livestock-related rural employment, raw material processing, and infrastructure maintenance. The entire vocational and technical education curriculum needs to be assessed in terms of new and emerging labor market needs. Programs, to be justified, must enhance the occupational success of the worker.

37. There is a decided lack of instructional materials at all levels of vocational and technical education. There are insufficient numbers of current textbooks and reference manuals to meet the learning and instructional needs of students and teachers. Those materials that are available are mostly outdated and are usually printed in Russian. There is also a shortage of paper and related instructional supplies. Teachers do a remarkable job of instruction given the lack of instructional materials. They do a great deal of lecturing using the chalkboard. They are, however, quite inventive. Teachers have devised models, mock-ups, and other instructional aids to help them communicate ideas, concepts and skills to their students. Master teachers too, are to be commended for their ingenuity and resourcefulness as they struggle to teach students good practice without benefit of appropriate workshop resources. They teach by example and demonstration and expect students to emulate good practice.

38. All TPC courses of study require instruction in four broad areas -- general education, basics of the chosen profession, professional qualification (technology) and practicum. The hours required for completion vary according to the profession for which instruction is undertaken. Two sample programs illustrate the similarities and differences in courses of study (Table 6-11). A one-

year TPC sewing program requires 1,494 total hours of instruction with 150 hours in general education, 200 hours in basics of the profession, 250 hours in professional qualification and 894 hours in practicum. For comparative purposes, a two-year TPC program in agriculture is also shown. The course of study contains the same major areas -- general education, professional basics, professional qualification and practicum. Because it is a two-year program the total instruction hours change to 2,709 -- 243 in general education, 350 in professional basics, 280 in professional qualification, and 1,836 in practicum. Transition to a market economy and its changing employment needs suggests that the entire curriculum be examined in terms of new workforce requirements. New and emerging employment opportunities will require a different mix of general education, basic professional preparation, technological qualification and practice.

39. The percentage of instructional time spent in study of general education courses, professional basics and technology qualification according to years is shown in Table 6-12. Time spent in study of general education courses ranges from 9.2 percent for operative trainees to 34 percent for three-year technician level trainees. Study of basic professional subjects ranges from 33.5 percent for operatives to just 6 percent for three-year technical students. The percentage of professional qualification technology study varies by just 2.7 percentage points between one-year and three year students reflecting the continuing emphasis on technical and work related content.

40. The relationship of theory to practice for operative, technician and higher level education varies. As students move along the vocational and technical education continuum their course of study increasingly becomes more theoretical in nature and involves less practice. Students engaged in operative training will first spend 20 to 30 percent of their time in theory with 70 to 80 percent devoted to practice. As students seek to learn higher order skills and knowledge they experience more theory instruction and less practice. This relationship continues, until at the conclusion of the higher education experience, 70 to 80 percent of the instruction is theoretical in nature. In some instructional areas, however, there is considerable difference between the amount of practice that really occurs and that which is stated in curriculum documents. In actuality a far less amount of time may be devoted to practice because of the shortage of raw materials and/or a lack of funds to purchase them. For example, student practice in furniture and machining specialties is limited by availability of woods, fabrics, finishes, metal sheet and blank stock. In the absence of raw materials, the only alternative these teachers have is to revert to theory instruction.

41. Employers report a general dissatisfaction with the amount of practical experience possessed by vocational and technical school graduates. They feel too much pre-employment training time is spent on theory and not enough on practice. Employers reportedly spend far too much time away from production activities helping new employees perfect

skills that should have been developed in schools. Additionally, employers prefer to conduct their own worker retraining programs because the formal system is not able to adequately provide relevant content and curriculum in an acceptable timeframe. Vocational and technical schools have recognized the problem and taken steps to alleviate the situation through establishment of in-school enterprises.

42. Prior to 1990, vocational and technical education students gained actual work experience in government factories. Because of the privatization of industries and a sluggish economy, these on-the-job training sites have all but disappeared. In fact some industries reportedly charge fees to TPCs for placing students on-the-job. In response to this loss, TPCs have initiated in-school enterprises -- furniture manufacturing, bread and pastry making, and crafts production to name just a few. These enterprises not only replace lost on-the-job training sites in industry, but generate income for both students and TPCs alike. Students receive a portion of the income generated by their on-the-job training. The remainder of the income generated from these in-school enterprises reverts to TPC revolving funds.

43. The process by which decisions are made about curriculum is in transition. Formerly curriculum decisions were made centrally and handed down to the local level. Now the intent is to localize this decision making process. A process is emerging whereby educational personnel at the local level are assuming increasingly more responsibility for curricular decision making. The emerging process by which educators at the local level plan for, develop, gain approval and implement curriculum is described in five-steps. The first step occurs at the local level when teachers initiate some form of curriculum related action. They collaborate with the resident methodologist and together document a curriculum proposal. At the second step the TPC director or representative sanctions the proposal for transmittal to content specialists in the appropriate ministry (Step 3). For example, curriculum proposals for construction programs are submitted to the Ministry of Construction and Urban Development. There, a committee of construction content specialists reviews the proposal and rules on the appropriateness of the curriculum proposal. These experts are expected to ensure relevance of content to the students' subsequent work activities. When approved, the proposal is forwarded to the Ministry of Science and Education for endorsement (Step 4). Upon approval of the MOSE, the endorsed document is returned to the originating TPC for implementation (Step 5). A plan for annual review of curriculum is in the discussion stage. The process for curriculum development and review must be expanded to provide for greater representation of the emerging private sector and the nonformal education subsector. The current process depends too heavily upon educators and specialists within the formal education sector. Mongolia's changing economy and workplace require that decisions about vocational and technical training be made by a cross section of people who have a vested interest in employment and productivity.

44. Comprehensive curriculum does not and should not exist in the

nonformal education subsector. The very nature of the subsector demands unique and specific courses of study be made available to users. These courses of study must be flexible to meet the varying needs of people in a variety of different locations and at different times. The Gobi Women's Project is one such effort. It is designed to meet the basic learning needs of nomadic women in the Mongolian Gobi. Funded by DANIDA and executed by UNESCO, the project commenced in 1992. The long-term project aim is to empower Gobi women, through learning, to make decisions and take actions that will enhance the quality of their lives and the lives of their families. The first project year was devoted to a needs assessment, training and establishment of an administrative infrastructure. A valuable information base has been developed and should be reviewed by others to facilitate their efforts to deliver education in the nonformal subsector.

45. A three-year study of basic problems facing nonformal education was initiated in June 1993. Funded by the Ministry of Science and Education, the project is being carried-out by a six-person team in the Institute of Educational Development. That team has produced a handbook on continuing nonformal education. They will further study the problems other countries have encountered while initiating and conducting nonformal education activities. The project will also conduct experimental studies with secondary school drop-outs in three aimags and in Ulaanbaatar. The results of their work may serve as still another source of foundational information for the developing nonformal education subsector.

46. The Small Enterprise Promotion Center provides support programs for new and existing small businesses. Approximately 800 entrepreneurs have received training since the Center's inception in 1991. A tracer study found that approximately 300 businesses had been started by training program graduates. The Center's six-week training program focuses on basic management skills covering marketing, export and trade, basic accounting and business law. A foreign study program with the Moscow Center for Management Innovation is still another component of the Center's training activities. The structure and processes of the Center should be studied for application to nonformal education activities.

47. Volunteers from Korea, United Kingdom and United States are also contributing to nonformal education efforts. For example, a United States peace corps volunteer is currently working in the office of the Central Union Mongolian Consumers Cooperatives in Ulaanbaatar. This volunteer is providing management assistance to the Cooperatives' officers. The Cooperatives, in turn, provide training for their managers in the aimags. Volunteers from the Church of Jesus Christ of Latter-Day Saints also provide nonformal educational assistance to the Ulaanbaatar library, city police, business women's association and boy and girl scouts.

48. Government ministries also provide education and training for their employees outside of the formal education system. The Ministry

of Labor and Population Policy, for example, provided local training for unemployed youth (described earlier in this section) and is currently engaged in a joint effort with the Indian government to train entrepreneurs. A program is being conducted by the Ministry of Health to train volunteer rural health workers. Nearly all ministries are engaged in some form of nonformal education activity for their constituents. A variety of nonformal education activities are occurring independently without coordination. The quality of these activities may be improved and better use made of limited resources by establishing a mechanism for coordination of effort. Through such coordination all parties will learn which methods work best, what comprises successful facilitators and which materials are most effective. Much remains to be learned about the nonformal sector and its linkages, methods, teachers, and materials. The lessons learned from the Gobi Women's project, Ministry of Labor and Population Policy youth unemployment training efforts, and Ministry of Health's volunteer health workers program provide a valuable information base for subsequent action.

49. Administration. Training and production centers are the responsibility of the school director, both for day-to-day operations and for policy. The TPC director is the link to the Ministry of Science and Education, other ministries, and universities. For example, the director of the Construction Training and Production Center in Ulaanbaatar is the link to the Ministry of Construction and Urban Development when the Center seeks to validate the content of new curriculum for a construction course. At the same time the director links with the MOSE to gain final approval of that course once it clears the Ministry of Construction and Urban Development. Three institutions are affiliated with two Universities and their directors are links to the parent institutions. The Transportation School and Information Technology School are both affiliated with the Technical University and the directors are links to the University. The Agricultural College at Bayanchardman is affiliated with the Agricultural University and the College's director is the link with the University.

50. Directors of TPCs link directly to the Postsecondary Education Department of the MOSE (Figure 6-2). That department is headed by the Director General of Postsecondary Education and consists of a deputy director of management and administration for the department and five officers in charge of various programs. The officer in charge of vocational education -- management, administration and methodology -- is the person with whom TPC directors make direct linkages. Directors of institutes, schools and colleges in which vocational and/or technical education takes place link with the officer in charge of post-secondary, technical and professional schools -- management, administration and methodology. The remaining officers are in charge of students studying abroad, higher education, policy and integration of training practice. When and where appropriate, directors link with these officers, usually through their designated MOSE officer. The officer in charge of vocational education has

primary responsibility for:

- vocational policy
- administration of this area
- training process and content
- student study abroad
- equipment and materials
- relations with other ministries
- teachers

51. The organization of a sample training and production center is shown in Figure 6-3. In this illustration the center director has a deputy director for training and a business or finance manager. The deputy director for training supervises four main areas or departments -- methodology, equipment and maintenance, chief training officer in charge of theory and senior master trainer in charge of production. The training officer for theory supervises the theory teachers while the senior master teacher supervises other master teachers. The business or finance manager supervises accountants and facilities personnel. During the 1992-1993 school year there were 101 persons reportedly carrying-out administrative functions at 26 TPCs and 4 step schools (Table 6-13). These functions were performed by directors, deputy directors, senior teachers for methodology, senior masters and finance/economic assistants.

52. Management personnel at the MOSE, TPCs, and schools, institutes and colleges with vocational and technical programs possess limited formal management training. Their management skills and knowledge have been developed through on-the-job experience and with the aid of short-term training seminars or courses. For a majority, their formal preparation has been in higher education through study in engineering, science, mathematics or similar areas. Still others have come through the ranks of teaching. There is little immediate need for additional management personnel in either the MOSE Department of Postsecondary Education or in TPCs, step schools, institutes, schools or colleges. The MOSE has experienced a reduction of nearly one half of its staff since 1990 thus requiring no further management personnel. Vocational and technical training sites too, have undergone dramatic reductions in number since 1990. At that time there were 44 vocational and technical schools and 32 professional technical schools. Today there remains 26 TPCs and 12 professional technical level institutions. There is little need for additional school management personnel in the short-term.

53. The administrative costs associated with operating training and production centers and step schools are illustrated in Table 6-14. The overall monthly administrative cost of operating the 33 reporting institutions is 234,107 tugrugs. The average monthly administrative operating cost for all institutions is 7,094 tugrugs. When considered by location and region, the highest average monthly administrative cost (9,182 tugrugs) is found in the northern region of the Country. The second highest monthly administrative cost of 8,851 tugrugs occurs in

the eastern region. The western and central regions and cities expend an average of 7,984, 7,403 and 6,110 tugrugs respectively for monthly administrative costs. The southern region expends the smallest average monthly amount for administrative costs at 4,553 tugrugs.

54. Facilities and Equipment. The age of facilities and equipment used for vocational and technical education purposes at 26 training and production centers is shown in Table 6-15. The average age of all 26 TPC facilities is 20 years. Instructional equipment used in the 26 facilities is, on average, 17 years old. When categorized by location, the eastern region of Mongolia has the oldest, on average, TPC facilities and equipment -- 27 and 26 years old respectively. Those facilities and accompanying equipment found in western Mongolia are, on average 25 and 20 years old. The central region's TPC facilities are an average 22 years old with equipment averaging 17 years of age. Those TPCs located in cities are housed in facilities averaging 18 years of age with equipment of 13 years average age. The central region does have one four year old facility with equipment of like age. The northern region has three TPCs averaging 13 years in age with equipment of like age. This region also possesses a four year old TPC facility and instructional equipment. Three training and production centers in the southern region average 15 years of age with equipment being, on average, 12 years old. One of the southern region's TPCs is only four years old.

55. Facilities are adequate for the number of students seeking instruction. A table (6-4) referenced earlier in this section shows the number of seats available in each of 26 TPCs and corresponding enrollments for September 1993. There are 13,180 available seats with 8,041 registrants resulting in 5,139 unused seats. When available seating is examined by region, the central portion of the country exhibits the greatest unused seating capacity (1,790). Facilities located in cities exhibit the next largest unused seating capacity. The southern, western and northern regions follow with 692, 638 and 603 empty seats respectively. The shift coefficient over the last three years for all Centers has been 1.0, i.e. one shift of classes per day. Under-utilized space might be put to good use by private enterprise and/or organizations, groups and individuals engaged in delivering education through the nonformal subsector. Renting unused space could help offset reductions in the formal education budget and build linkages with business and industry.

56. The Nation's buildings in general, and vocational and technical training facilities in particular, are at risk. The exteriors of instructional facilities are under constant attack of Mongolia's severe winter weather conditions. Alternate freezing and thawing conditions literally chip away building facades creating constant need for repair and maintenance. Preventing interior damage due to water leaks is a continuing problem. Additionally, heating, plumbing and electrical systems are under constant stress from prevailing weather conditions. A shortage of construction materials, pipes, welding rod, boiler parts and related building supplies coupled

with a deepening financial crisis makes routine maintenance nearly impossible. Whenever possible, local vocational and technical school directors attempt to brighten their buildings with new coats of paint and other cosmetic treatments. However, deterioration of the facilities infrastructure continues. Only emergency repairs are undertaken to stem complete shut-down of threatened facilities. Deferred maintenance is the order of the day and places all physical plant at risk.

57. Equipment which averages 17 years of age and has been used for both instruction and production activities is in need of overall repair and/or replacement. Machines are operator controlled and not fitted for computer control. Safety guards and devices to protect the health and safety of students and teachers are in short supply. Power machines and hand tools used in vocational and technical workshops are primarily of Russian and eastern European manufacture. Repair parts, lubricants, special hand-tools and manuals are in short supply.

58. Costs and Financing. The status of government expenditures on all levels of education is described in section two of this report. Only costs and financing related to vocational and technical education are reported in this section. All costs are drawn from 1992 sources. Unit costs for vocational and technical education are 9,333 tugrugs. The vocational school drop-out rate is reportedly 2.7 percent and therefore does not significantly increase costs. The unit costs for other levels of education are listed below for comparative purposes.

Unit Costs by Education Level	Tugrugs
Kindergarten	5,944
General Education	2,035
Vocational Schools	9,333
Postsecondary Schools	14,204
Universities	12,954

59. The costs of operating five selected vocational and technical schools is shown in Table 6-16. Vocational schools are unique in that they require practice workshops, machines, hand tools, materials supplies and maintenance/repair that are not regularly required by primary, general and higher schools. Costs associated with these unique and specific vocational training requirements are substantial. This is particularly true of training and production center workshop buildings that are on average 20 years old. They require continual costly repair and maintenance of special features such as ventilation, electricity, water, and chemical storage. Similarly, power machines averaging 17 years of age are in need of constant repair and maintenance or costly replacement. Workshop practice also requires costly raw materials. To complicate matters, changing workplace technology and subsequent worker skill requirements will necessitate purchase of new and different machines, tools and materials. The costs of these unique and special needs are competing with other high cost items such as student stipends, teacher salaries and benefits and

heating. Teacher salaries are already well below those for similar professionals working in other sectors. Reducing teacher salaries to increase spending for buildings, equipment and the like would serve to place the entire training system at risk. Attempts to reduce costs by eliminating student stipends and tuition support have been initiated. A plan to eliminate out-right grants-in-aid is scheduled to go into effect in September 1993. At that time students requiring assistance will apply for low interest loans (three percent repayable over ten years) to cover expenses and tuition. While at first glance this action may seem to provide a sizable source of additional revenue to support building repair and equipment maintenance and purchase, this is not the case. A declining education budget will offset the use of uncommitted resources. Ever increasing heating bills will also continually erode savings derived from decreased spending in any category.

60. Addressing current and emerging special needs of vocational and technical training requires substantial financial resources which must be obtained from an ever decreasing pool of support. Vocational schools, perhaps more than other institutions, generate income through a variety of ventures -- raising animals and through in-school enterprises. For example, a construction school in Ulaanbaatar produces and sells furniture in a joint venture with a Chinese school. Last year that venture earned 1.3 million tugrugs for the school and its students. Students share in distribution of the profits. Similar in-school ventures supplement training budgets by producing and selling bread, hides, and finished leather products. Others operate small food shops and lunch counters. In-school production and service enterprises are viable means of supplementing a training budget. However, there is rising concern that the real purpose for operating these ventures be lost in the rush to increase earnings. These enterprises first exist to provide students with an environment in which to practice and improve their trade and professional skills, and secondarily to raise revenue. While these enterprises help to offset costs, they are by no means the answer to the financial crisis faced by education. Vocational schools must explore with the private sector and nonformal education subsector ways in which to use human and material resources in a more effective and efficient manner. They must consider pooling professional talent, facilities and equipment to minimize costs while at the same time maximizing instructional effectiveness and efficiency.

61. Vocational and technical training is financed through a combination of State support from the Ministry of Finance and local funding. Funds are provided to aimags through the Ministry of Finance. The manner in which State and local funds are allocated for educational purposes is left to the discretion of local authorities. Vocational and technical schools must compete for finances along with schools of all other educational levels. External support of vocational and technical education disappeared when the former Soviet Union and eastern European countries discontinued their aid to job training programs. In combination, vocational and technical education, nonformal education, and the private sector must seek external support

of their efforts to prepare a qualified workforce for Mongolia's emerging market economy.

62. Evaluation of Quality and Effectiveness. The quality of vocational and technical instruction varies greatly among institutions. Quality in vocational and technical schools has suffered in recent years. This has been the result of the transition from a command society to a market economy. A transitional period plagued by severe monetary problems adversely impacted the vocational and technical education system and its supportive components -- administration and finance, population/access, personnel, student services, facilities and equipment and instructional programs. The management, planning and financial system component has undergone significant change since reforms first began. A pre-occupation with structural and organizational reform has left much remaining to be accomplished:

- review, revision and adoption of new mission, priorities and goals.

- develop long-range and annual management plans specifying roles and responsibilities for vocational and technical education.

- modify vocational and technical education budget, accounting system and financial records in accordance with reforms.

- develop a comprehensive plan for vocational and technical education.

While awaiting new directions for the 21st century, the quality of vocational and technical programming has suffered. Critical decisions regarding programming issues have gone unresolved in anticipation of clearer signals about new horizons for vocational and technical education.

63. Access to vocational and technical programs which result in related employment and/or continuing education for all students has also suffered during the transition period. While access to vocational and technical education for all students is facilitated by offering a sufficient number and variety of programs (approximately 100 different ones), a majority of these programs do not prepare students for occupations that have employment potential and/or results in related employment and/or continuing education. Rather these programs of study reflect the heavy industry manpower needs of the former command system. Comprehensive studies of potential employment needs of the new market economy have not been undertaken. Data resulting from follow-on studies of vocational-technical program completers is sketchy, at best, making it difficult to substantiate whether or not programs are meeting existing employer requirements.

64. The quality of vocational and technical education programming

has also suffered because of the large number of teachers (1,871 since 1990) who left teaching. Some were made redundant by declining numbers of students and the subsequent restructuring of institutions while others left teaching for higher paying jobs in the private sector (some receiving three to four times their former salary) or to open their own businesses. Whatever their reason for leaving, their departure effected the quality of vocational and technical instruction. Those teachers remaining in the system found that institutional budgets were reduced such that professional development activities were no longer offered to them. This too, influenced the quality of instruction.

65. The period of transition has also influenced the quality of facilities and equipment used in support of instructional activities. Budget reductions coupled with shortages of building materials serve to place the entire vocational and technical education physical plant at risk. Facilities (average building age is 20 years) maintenance has been deferred except in emergency situations. Deferred maintenance of equipment (average age 17 years old) is likewise the order of the day. Finally, reduced budgets leave little room for the purchase of new equipment to meet the emerging needs of a changing economy. In combination, these conditions serve to negatively impact the quality of instruction.

66. The quality of the instructional program has also suffered under these conditions. A lack of mission, limited access to programs with employment potential, fewer teachers, curtailed professional development opportunities, limited instructional resources, and an aging and poorly maintained physical plant all adversely affect the quality of vocational and technical education.

ANALYSIS

Needs

67. The preceding discussion of vocational and technical and nonformal education in Mongolia suggests that the needs are many. Mongolia is facing serious problems in vocational and technical education and in meeting the needs of people who must be served through the nonformal education subsector. The current formal vocational and technical education structure was designed to meet the needs of a plan economy. That structure may have served well, but is no longer relevant to current and emerging needs of a market economy. As the country moves to a market economy amid a deepening financial crisis, the existing system of vocational and technical education must undergo structural and organizational change as well as modifications in resource allocation, methodology, and content of workforce training programs.

68. Given that a contraction of the vocational and technical

education system has occurred and will likely continue for the near future, there is need to explore alternative means of delivering both pre-employment training and worker retraining. Joint training ventures between vocational schools and private enterprises need to be explored and where feasible initiated.

69. There is a need to develop a national employment training policy beyond the general directives of the 1991 Education Law. A clear statement of goals, objectives and priorities must be developed and adopted. That policy must first clarify the role of the State and then clearly delineate the role and responsibilities of government ministries in the national training scheme. There is further need to clearly specify the role and responsibilities of those at the local level who would carry-out national employment training policy. Additionally, there is need to involve and clarify the role and responsibilities of the emerging private sector, non-governmental organizations, charitable groups, and religious units and other relevant groups.

70. In the face of declining enrollments, under-utilization of facilities and declining training budgets, there is need for a fundamental rethinking of the way in which human and physical resources are allocated for purposes of employment training. There is need to reallocate these precious resources in ways that serve the training needs of Mongolians through both formal and nonformal means. There is need to find ways of using idle facilities to enrich both formal and non-formal training efforts. Similarly, there is a need to find ways of delivering both formal and nonformal training using teachers who were made redundant by declining enrollments and budget reductions. These actions may well create a need to retrain teachers in new ways of delivering instruction.

71. In spite of the good efforts of administrators at all levels of vocational and technical education, there is still need for extensive management development. A majority of these administrators possess little formal management training. They primarily rely on personal experience to guide their actions. The need to bring about major reforms in vocational and technical education will require ministry personnel and local directors who possess a judicious mix of management training and on-the-job experience.

72. There is a need to review and analyze the vocational and technical education curriculum in terms of the employment needs of an emerging market economy. Within this framework it is necessary to look at the large number of long term, school-based programs offered in narrow specializations -- most of which prepare people for industry and may have disappeared along with the command economy. Therefore, study of training needs in emerging fields of work as well as revisiting existing ones is critical to developing curriculum that truly reflects real needs. Curricular revision is sorely needed as Mongolia is too poor to train its workers for the wrong jobs. Emerging training needs and subsequent curricular revision may well necessitate

extensive retraining of the existing teacher population and pose new challenges for teacher training institutions. New curriculum will also give rise to the need for extensive study of existing training equipment and its appropriateness for the tasks at hand.

Existing Policies

73. Mongolia does not have a specific policy governing vocational and technical education or nonformal education beyond the directives of the 1991 Education Law. The basic tenants of the Law recognize the respective roles of public and private vocational and technical training institutions. The tenants further recognize the need to combine formal and nonformal means of education. Nonformal education carried-out by non-governmental organizations, businesses, industries and individuals is encouraged. The potential for the MOSE to assume leadership in bringing about a merger of formal and nonformal education with the emerging private sector is great. What is first required is recognition of the critical need to merge these sectors into a fully functioning partnership and secondly a commitment of resources to this cause. With a mandate and commitment of resources the MOSE can move forward to formulate a comprehensive policy, structure, organization and plan of action.

Plans

74. The Law has provided impetus for structural and organizational change, as well as modifications in methodology and content of vocational and technical education programs. Specific goals and priorities for the vocational and technical education system are evolving and have not as yet been documented, approved and adopted. Plans too, are being formulated. They will be completed following specification of goals and priorities. During this developmental phase efforts to contribute to national development through vocational and technical education are being guided by group and individual interpretations of the Law.

75. The Education Law also addresses the need for development of the nonformal education subsector. Significant steps toward achieving a unified plan of action for nonformal education were taken on 27 May 1993 when the National Program of Action (NPA) was approved by the Cabinet. This action created a working committee to coordinate and monitor implementation of the NPA -- nonformal education is addressed as one viable means of providing citizens with equal access to training. A separate, yet supportive effort occurred in June 1992 when a national workshop on the preparation of literacy follow-up materials was held in Ulaanbaatar. That workshop resulted in the adoption of a set of recommendations regarding policy for and establishment of a nonformal education system in Mongolia. In concert, these efforts may well provide the impetus for further development of a comprehensive plan of action for nonformal education in Mongolia.

Constraints

76. There are two primary external constraints to vocational, technical and nonformal education in Mongolia -- the transition from a command to market economy and the onset of a serious economic crisis. The termination of substantial external assistance from the Soviet Union and the collapse of markets in Central and Eastern Europe which had accounted for approximately 90 percent of Mongolian trade have severely limited the government's ability to finance vocational and technical education reform as well as initiatives in nonformal education.

77. The primary internal constraint to vocational and technical education is that which remains of the former command training system. Remnants of that system which serve to restrict the attainment of educational reforms include structure, methodology, content, personnel and facilities/equipment. Development strategy under Soviet domination emphasized central planning that focused on rapid capital-intensive industrialization. In 1989, half of the country's industrial production was accounted for by heavy industry. The industrial sector as a whole was characterized by a high level of concentration -- geographically and in size. Large, capital-intensive enterprises dominated the scene. There were no small enterprises. To fill the needs for qualified industrial workers, large numbers of school leavers at grades eight and ten were admitted to vocational and technical training institutions. The State ordered-up specific numbers of people to be trained for industry in over 100 specializations. Employment for virtually every program completer was guaranteed by the State. What remains is a vocational and technical education system geared to respond to a command system -- responding to orders to train fixed numbers of workers in very specialized trades, crafts or professions. Educational personnel -- administrators and teachers alike -- are struggling to adapt methodology, content, facilities and equipment to new ways and means of providing training that is relevant to the new market economy.

78. The primary internal constraint to development of the nonformal education system is the very nature of the subsector itself. Description and analysis of the subsector is difficult because of the variety of programs and their sponsorship. Nonformal education efforts in Mongolia are not coordinated in any way. Some are located in small and remote locations making data collection costly and time consuming. Information on nonformal education activities must be collected from a variety of sources. These sources often are not readily available and have to be sought out. Additionally, such programs are often conducted by small private organizations, church groups or voluntary agencies who do not possess sufficient finances to keep detailed records of their programs. Therefore, reliable data about nonformal program organization, content, methodology and participants is hard to find. One final internal constraint to systematizing nonformal education

activities is the extent to which key people are knowledgeable about current practice in the subsector. For without competent people to lead the way, there is little hope of organizing a comprehensive nonformal education system.

Analytical Topics

79. Equity. Regionalization of vocational and technical educational opportunity has been achieved through training and production centers and schools located in various parts of the country as well as in the cities. These institutions adequately serve those within their immediate vicinity. However, the extent to which regional institutions are accessible to cattle breeders and other rural dwellers is questionable. It may well be that regional institutions will need to establish extension offices in the somons or provide some form of short-term, on-the-road training. With the country's vocational and technical education facilities vastly under-utilized and a vast number of their teachers redundant, time may be well spent in studying the feasibility of using these resources to improve accessibility to education. The TPCs and other schools are equally accessible to either gender. However, imbalances between gender occur on a continuing basis by specific training program. Males traditionally follow construction trade training, while females dominate practical nurse training. Programs such as these are, however, open to either gender. More females than males in a given program is not caused solely by the school, but is also a function of the culture. Young people are "taught" that females become nurses and males become plumbers. Students self-select training programs. Schools and families must work together to remove stereotypic thinking and promote gender equity in vocational and technical programs.

80. Internal Efficiency. There are six critical issues impacting the internal efficiency of vocational and technical education -- instructional methods, teachers, instructional materials, qualification testing, facilities and the nonformal education subsector. The instructional methods used by teachers comprise the first issue. Instructional methods tend to have a "teacher focus" versus a "learner focus." The teacher assumes major responsibility for learning. The emphasis is on hand and machine skill development with the instructor presenting students with teacher-designed projects. In developing hand and machine skills, teachers use direct methods of instruction (didactic, demonstration). Changing workplace requirements, however, demand people who can solve problems while at the same time performing hand and machine operations. Teachers could become a more effective resource if they adopted a problem-solving approach to instruction. In order to develop this capacity, teachers will need to supplement their repertoire of teaching methods to include indirect teaching styles (guided discovery, investigation, cooperative learning). Students will have to accept greater responsibility for their learning and accept the idea that there is likely to be more than one right answer to any given technological problem. For both teachers and students, this shift will

mean the development of a variety of thinking skills and problem solving strategies. Vocational and technical teachers have done well in their role as designers of projects. Now, to become a more effective resource they will be challenged to design problem centered activities and to move away from being the source of answers to working as a catalyst for ideas.

81. The skills and knowledge possessed by vocational and technical teachers poses the second major internal efficiency issue. A majority of these teachers received their preparation in institutions of higher education or specialized secondary schools. Others possess experience in the trade and profession for which they teach. All, however, possessed no formal training in methods of teaching before beginning their work as instructors. Some, but not, all participated in short-term courses or seminars on teaching methods sponsored by their institutions. This professional upgrading practice was discontinued when the country's economy went into decline and educational budgets were reduced. A situation now exists where a major system resource is not being developed and used to its fullest potential. The problem is compounded by large reductions in the teacher workforce. There is a continuing need to provide retraining for those remaining teachers who may have to deliver instruction in a subject for which he/she was not formally trained. Those teachers who have left the formal system comprise a vast resource base that should not be overlooked. Given appropriate opportunity, some may elect to continue delivering instruction in the nonformal education subsector. These people too, will require retraining. Serving the professional development needs of both formal and nonformal education subsector teachers in combination may well be a way of making maximum use of declining financial resources.

82. The availability and utilization of instructional materials comprises still another internal efficiency issue. Reduced instructional budgets and a general shortage of instructional materials poses a real problem for teachers. There are few textbooks available that are up-to-date. Current reference manuals, periodicals and supportive materials are also in short supply. Audio-visual and other supportive technology are either non-operative or not available. While a major problem for instruction under the current teacher dominated system, availability and full utilization of materials under the learner-centered approach proposed above will become an even more critical issue.

83. The absence of a systematic student qualification evaluation process poses another internal efficiency issue. Currently teachers give tests and examinations at the end of instructional periods. There is little consistency among qualification tests and few comparable measures of performance in the schools. The challenge is to establish an appropriate level of quality at vocational and technical institutions to ensure that students desiring additional training receive appropriate instruction for advanced education while the needs are met of those not wishing to continue their studies.

84. Declining enrollments have left the vocational and technical education system with under-utilized physical plant. Under the former command system the shift ratio at times reached 1.49. A shift ratio of 1.0 during the last three years has left much valuable plant idle. Currently physical plant is used six hours a day, six days a week for 36 weeks. Better use of this expensive resource could be made through dual use -- both for instructional purposes and as school-based production or service oriented enterprises. The concept of school-based enterprises is more important now than ever before. Since privatization occurred, industries that once served as on-the-job training sites for students have either closed down operations for good, charge a fee for providing on-the-job training or simply refuse to accept trainees. Facilities utilization could also be improved by opening them to the private sector and nonformal education subsector. In this manner community support of vocational and technical education may be gained as well as financial and material support for maintenance of buildings and upgrading of workshop equipment. Multiple use of vocational and technical education facilities may be mutually beneficial for the formal and nonformal education sectors and as well as the private sector.

85. Internal efficiency issues for the nonformal education subsector were difficult to identify because of a lack of data on inputs and outputs. The Mongolian government has just begun to address the nonformal education subsector. The Education Law of 1991 specifies that; a) education must be provided through formal and nonformal means and b) nonformal education may be conducted by citizens, institutions and/or enterprises. A major question arises over how nonformal education can be best coordinated with other educational and training systems. Action to develop a nonformal education system was initiated at a national workshop in 1992 when participants adopted a set of recommendations directed to the Ministry of Science and Education. Those recommendations set forth the following:

- work out a plan for setting-up a nonformal education system.
- establish institutions responsible for nonformal education.
- organize national and local workshops for introducing nonformal education.
- expand research work carried-out in the field of nonformal education.
- introduce nonformal education issues into the curricula of universities and other educational institutions.

It remains for the Ministry of Science and Education to carry these recommendations forward and take action on each. This Ministry is in a

position to become the catalyst for change. It is the logical link between formal and nonformal education. Once the structure and organization of the nonformal education subsector is realized, efforts can be directed toward elaborating the characteristics of successful nonformal instructional methods and facilitators and what can be done to increase their effectiveness.

86. External Efficiency. Two major dimensions of external efficiency for the vocational and technical education system will be presented. The first describes the extent to which system institutions are producing sufficient numbers of graduates to meet two basic needs -- meeting manpower demands and providing students with adequate preparation for further study. A second dimension describes the extent to which training is appropriate to education and skill requirements of employment. Currently vocational and technical institutions are producing far more graduates than what can be absorbed by the depressed economy. Reported unemployment statistics for May 1993 show 55,343 men and women as unemployed. Of that number 13,677 were graduates of training and production centers trained as skilled workers. There were 4,021 professionally and technically educated persons reported to be out of work. This may well be one of the major reasons for dramatic reductions in vocational and technical program enrollments. These same institutions are also preparing far more students for further study than what is currently needed. Opting to stay in the formal system for further training merely delays the inevitable -- having to find employment in a depressed labor market. One reason, however, for pursuing further technical or professional study is that in May, only 7.3 percent of the technically and professionally prepared people were reported as out of work compared to 24.7 percent of skilled workers reported as unemployed. For the time being, institutions are over producing graduates on both dimensions. Over-production creates both problems and challenges. Training people for work must be the result of national consensus requiring strategic planning and insightful policy making addressing both the short and long term employment needs of Mongolia. Vocational and technical education can and must contribute to easing the transition to a market economy. The system can help solve certain labor market and employment problems, raise levels of productivity and income and enhance social equity. Admittedly, there are limits to what vocational and technical education can do. It remains to identify precisely how the training system can contribute to the transition and then take appropriate action on these items.

87. A second dimension of external efficiency addresses the extent to which formal training is appropriate to the education and skill demands of employment. There is evidence to suggest that the content of vocational and technical education is a carry-over from the former command system where the state ordered-up specified numbers of people to be primarily trained for employment in heavy industry. That curriculum consisted of approximately 100 specializations. While reduced to approximately 75 specializations, the current course of study includes content which is of questionable relevance to an

emerging market economy. Furthermore, the curriculum is composed of long-term, school-based programs which focus on pre-employment training. Employment needs in the emerging private sector may require short-term, high impact training sessions delivered at the worksite at times and in manners heretofore not envisioned. It remains to systematically study the needs of the emerging workplace and develop policy and action plans for delivery of relevant employment training content in the most expeditious manner possible.

88. The nonformal education sector has not evolved sufficiently enough to analyze its efficiency in terms of personal and social utility. There is insufficient data to suggest that nonformal education efforts are producing significant numbers of people to meet manpower needs of the country or that it is providing significant numbers of students with adequate preparation for further study. Some work is being done in basic literacy, adult education, and worker skill development and foreign language instruction, but impact data on these efforts is not available. The relevance of these efforts to employment or further education needs has not been substantiated.

89. Summary Analysis. Mongolia's system of vocational and technical education still retains much of past -- its structure, organization, teaching methods and instructional content. Training outcomes are not always relevant to the workplace or further study and not always of the highest quality. Additionally, the system lacks adequate resources to carry-out its mission in a market driven economy. To meet these challenges, action must be taken to establish policy, increase training relevance and make better use of resources. The first step taken must provide direction and give order to the system. Direction and order can be achieved by first establishing national training policy. Once policy is established, attention can be aimed at achieving relevance in instruction. Finally, efforts must be made to make better use of available resources.

90. National training policy must clearly define training goals and propose ways of achieving these outcomes. That policy must also set priorities in view of resource constraints. Policy should cover all employment related training and in all sectors of the economy, especially the nonformal education subsector. It must pay particular attention to the emerging private sector and its needs for employment training. Similarly, national training policy must examine the roles and responsibilities of all ministries to determine where workforce training should be housed and administered.

91. Vocational and technical education must respond to real workforce needs and employment opportunities. It is imperative that action be taken to determine, in both the short and long-term, where these needs and employment opportunities will be, how many people are needed, and what kinds of specific skills and knowledge are necessary.

92. Efforts must be made to make better use of available resources. This may involve providing management training for

vocational administrators, changing from teacher directed to student directed learning, reducing the number of narrow content specializations thus broadening instruction to include clusters of related job skills, training and retraining teachers in new and emerging fields, initiating a system of qualification testing, converting facilities to multiple-use functions, and providing for shared use of resources between the formal and nonformal education sectors.

93. Finally, a contraction of the vocational and technical education system that began around 1990 is likely to continue for some time to come. Changing workforce needs and an economic crisis will require continuing reductions in scale and changes in direction to serve a society in transition. A high priority must be given for redirection of vocational and technical education both at the pre-employment and worker retraining levels. While attempting redirection, efforts must be made to avoid massive deterioration of the system before alternatives can be developed to support it. Infrastructure and staff exist to support workforce training efforts. The challenge is to preserve those elements of the existing system that provide a sound foundation for workforce development while at the same time creating new approaches to training for a changing labor market.

OPTIONS FOR POLICY AND PRACTICE

94. Transition from a command training system to one driven by the market requires a fundamental rethinking of the way in which people are prepared for employment and retrained for new and emerging jobs. For example, reduced educational funding may cause continued contraction of the formal vocational and technical training system thereby increasing the need for direct private sector involvement in training and retraining activities. The future may see some training and production centers directly attached to private enterprises. The following options are offered as means for understanding and meeting the challenges and problems of a system in transition. A reasoned and orderly transition can be achieved by first addressing the following key issues.

-Determine the role and responsibilities of vocational and technical education in the total education of all Mongolians. Where and how does vocational and technical education fit into the total education scheme from "cradle-to-grave?"

-Determine the extent to which the Government of Mongolia is responsible for the training and retraining of the workforce. Should a ministry or governmental unit have responsibility for workforce training and if so, which one(s)?

-Determine the role and responsibilities of the emerging private

sector for pre-employment training and retraining of workers. To what extent is the private sector able and willing to train and/or retrain people for work?

-Determine the role and responsibilities of the nonformal subsector for the education of Mongolians in general and their workforce training in particular. To what extent should nonformal education be responsible for developing basic literacy, continuing education and workforce training and retraining?

-Determine the extent to which the Government is responsible for the nonformal education of its citizens. Should a ministry or governmental unit have responsibility for nonformal education and if so, which one(s)?

Resolving these issues will allow decision makers to focus on specific items such as: policy formulation, administrator development, curriculum and content relevancy, teacher renewal, program quality, facilities and equipment, nonformal education and resource development.

95. National Workforce Training Policy. The Education Act of 1991 specifies guidelines for the conduct of formal educational activities in Mongolia. The Act briefly addresses vocational and technical education, private enterprises and organizations and the nonformal education subsector. Several articles call for collaboration among those public entities, private enterprises and individuals who have a vested interest in training and developing a world class work force. This calls for a program of work to bring people and organizations together in a collaborative effort to generate national training policy. That policy should elaborate mission, goals, priorities and responsibilities of a workforce training system. A ministry official should be given responsibility for this endeavor and given top-level support. That should bring representatives of the private sector, other Ministries, labor, and the nonformal subsector together in efficient combination. Their purpose will be to serve as a steering group to guide subsequent policy development efforts. With the aid of the steering group, procedures for soliciting input from across the country will be developed and implemented. A series of regional meetings held in the aimags and cities is a good way to initiate action. A blue-ribbon committee of people representing both the public and private sectors should be convened to review input, hear testimony and make recommendations for national training policy. Recommendations should be drawn-up from the committee's input and forwarded to appropriate officials for ratification.

96. An activity central to development of policy is to solicit the opinion of those most influenced by that policy. Therefore, a number of forums on workforce training issues could be conducted throughout the country. Participants should include workers, parents, employers, and public and private sector representatives. Their comments and recommendations should be recorded, documented and distributed for reaction and comment. Action to develop national

training policy must be based on information derived from these sources.

97. Administrator Development. An educational system in transition creates many problems and challenges for MOSE administrators and those responsible for the day-to-day operation of training and production centers, step schools and the like. Faced with an economy in transition, they must administer training programs amid declining enrollments, a changing employment market and decreasing resources. It is for these reasons that a program of work should address the needs of vocational and technical administrators to improve their management skills through short-term training activities. This training should be delivered through seminars, workshops, and symposia focusing on management practice, not theory.

98. Several activities could support the development of administrators better suited to work in the new free market environment. The first focuses on the development of a comprehensive administrator needs assessment system. It can serve as the starting point for determining administrator needs and in setting priorities at the local and national levels. The aims of this activity are to develop a process by which priorities for administrator development are generated from an individual administrator base. In this manner each administrator can have a personalized professional growth plan to serve as a benchmark for monitoring efforts toward improvement. In this system professional growth plans will include activities that are unique to the individual as well as group inservice programs. Activities to be included in this system could include visitations to business and industry, summer subsidized employment or credit classes at a university. The activity could produce a document that elaborates a process of the system. It could describe how to:

- conduct needs assessments and compile data.

- develop regional and national needs summaries.

- establish priorities for providing regional and national inservice.

- develop individual professional growth plans.

- monitor and update professional growth plans.

99. A second activity option for administrator upgrading involves short-term, intensive workshops conducted by teams of experienced administrators. Comprised of both Mongolians and international management experts, these teams will deliver practice oriented instruction on aspects of management planning, coordination, leadership, supervision, staffing and evaluation. Private sector managers could also benefit from participating in such activities. For example, managers representing the Central Union Consumers Cooperatives may contribute as much to the upgrading activities as they receive. A

mix of private and public administrators addressing management problems together may well be one means of bringing about closer relationships between the sectors.

100. Another activity option in support of administrator upgrading and renewal involves overseas fellowships wherein Mongolian vocational and technical school administrators engage in on-the-job training in another country.

101. A fourth activity option for administrator training addresses the need to become a better marketer of training programs. This will become increasingly more important as the Mongolian economy is privatized. This activity will help administrators learn how to identify customers, develop and present training proposals, negotiate agreements, sign contracts, oversee delivery of programs and follow-up with customers.

102. Relevant Content and Curriculum. The extent to which vocational and technical education curriculum is appropriate to the education and skill requirements of employment is questionable. The current training system is characterized by long-term, school-based programs offered in narrowly defined employment areas. Youth at the eighth, ninth and tenth grades are provided with little orientation to work or assistance with career planning. A program of work that addresses the relevancy of content and curriculum is desperately needed. Comprehensive study of education and skill requirements in new and emerging fields as well as existing ones must be undertaken using methodologies appropriate for the Mongolian context. That study should be an ongoing collaborative effort with active participation of the public, private and nonformal sectors.

103. An activity supporting more market-oriented content and curriculum relevancy could help assess the education and training needs of business, industry and labor. The activity would help administrators and vocational technical teachers:

- identify short-term special training program needs of local enterprises.
- provide a base for determining if program content balance is appropriate for the job market.
- identify areas where new programs might be added.
- identify appropriate levels of training.
- provide a data base for decisions relative to scheduling and location.

104. A second activity addressing relevancy in the curriculum could provide support for teachers to review and revise their course of study. Through this activity, teachers would receive instruction and

practice on how to develop curriculum for both training and retraining of workers. Teachers would learn how to: conduct background research, define coordination linkages, conduct occupational and instructional analyses and market their instructional programs.

105. A third activity supporting the relevancy of content and curriculum addresses the need to provide students with an orientation to work and career planning. Students reportedly are without sufficient guidance about the realities of careers. With an apparent movement to increase the amount of time students spend in practical subjects at the general school, it seems appropriate to engage in activity that will strengthen students' general knowledge of occupations while at the same time facilitating career planning. At the same time efforts should be made to ensure that gender equity is adequately addressed in the orientation and career planning programs. This activity aims to train general secondary school class teachers in techniques of occupational orientation and career planning. The activity could provide for instructor training, preparation of teacher and student materials, and follow-on studies of participants after one, three and five years.

106. Another activity in support of relevant content and curriculum addresses the feasibility of adopting a broad-based curriculum. Teachers and administrators alike could be provided with instruction on curriculum that addresses four categories of instruction -- materials and products, information, power and energy and systems integration. They could be provided with opportunities to experience selected segments of the program in practice and then encouraged to adapt/adopt relevant aspects to their own situation.

107. Still another activity would have school officials examine the formal workforce education structure in terms of how well it performs as an effective school-to-work system. Here, the current system would need to be examined in terms of the following components:

- specific goals that are endorsed and supported by parents and the employer community.

- a strong base in core subjects math, science, language, etc.

- high expectations for students.

- direct and active involvement of local employers in career guidance, curriculum development, on-the-job training, teaching, skills certification and job placement.

- all school counselors trained and qualified to provide career guidance.

- lessons show how what is taught applies to the workplace.

- proper and frequent use of vocational interest and aptitude

tests.

- a commitment to encourage all students to develop personal career plans.

- other career-related learning options -- apprenticeships, school-based enterprises, student organizations.

- certification of students based on demonstrated competencies relative to skill standards endorsed by employers.

- job placement services which connect students with part-time, summer or full-time job opportunities.

- ongoing monitoring and evaluation of students' success in moving on to meaningful employment or additional education.

108. Teacher Renewal and Retraining. Teachers constitute one of the more valuable resources in the educational context. Continual development of their content knowledge and teaching skill is essential for success of the system. Declining resources in support of teacher renewal place this valuable resource at risk. A second dimension is added to this situation when attention is given to the many teachers who were made redundant by either the closure or combination of training institutions. A pool of unemployed teachers exists that could serve as a source of instructional talent for nonformal education activities. Given appropriate training these former vocational and technical teachers may well serve the personnel needs of the nonformal education sector. It is therefore imperative that a program of work be initiated to review the professional needs of teachers in light of a changing instructional environment caused by new and emerging employment requirements. Both knowledge of the content to be taught and appropriate delivery methods will need to be identified. After clarifying what is really required of teachers, provisions can be made for short-term renewal and retraining activities for both employed and unemployed teachers.

109. One activity option supporting the teacher renewal and retraining option addresses teaching style. The changing nature of workforce training requires not only new content knowledge, but new ways of delivering instruction. This activity would aim to expand a teacher's repertoire of delivery skills to include guided study, investigation, and cooperative learning. It would hope to shift methodology from a "teacher" to a "learner" focus, thereby placing more responsibility for learning on students. This shift in "focus" would likely lead to workers who are problem solvers as well as operatives.

110. Another supportive activity to teacher renewal is a materials development effort aimed at providing vocational teachers with the knowledge and skill to develop effective, yet inexpensive instructional materials. This effort should identify the current and emerging needs for instructional materials, assess what materials currently exist and

specify those materials that need to be developed. Only then should materials be produced. A follow-on activity should seek to determine the sum worth of these materials. These activities may, indeed, have the greatest impact if participants represent both formal and nonformal education teachers.

111. A third activity option for teacher renewal addresses the need for a comprehensive teacher professional development system. This activity would involve the development and implementation of a comprehensive process for professional improvement in vocational education. Activities would involve developing documentation by which individual needs are assessed and data compiled. Activities would also facilitate analysis of local and national teacher data, establish priorities for group inservice, and provide for development and monitoring of professional growth plans.

112. Still another activity in support of teacher development involves the provision of training in content and manipulative skills for the teachers' specialism. This training should be based on new and emerging skill and knowledge requirements of the employment sector. A continuous program of teacher development should be provided in keeping with each teachers' professional growth plan described in an earlier activity.

113. Quality Assurance. It is essential to establish an appropriate level of quality for all training programs. Quality programming must occur at all stages and levels of training. It is important that students seeking additional training receive appropriate instruction for advanced training. At the same time those wishing to enter the labor market must be assured of the same quality training. Furthermore, continuous follow-up of graduates and program leavers is imperative. A system of this nature is not functional in the institutions. It is proposed that a program of work be established to develop a quality assurance program that is appropriate for the entire system.

114. An activity supporting development of a quality assurance system involves determining professional qualification requirements from current and prospective employers of vocational program students. This will involve conducting systematic studies in the workplace using a methodology appropriate for the Mongolian context.

115. Another supporting activity documents system procedures to ensure that the following major topics are addressed within the total quality assurance program:

- effectiveness of program planning and operational processes.

- student achievement during or at the time they leave the vocational program.

- student success on the job after leaving the program.

- services provided to students with special needs.

116. An additional activity involves collecting information at three levels of evaluation: minimum standards, national and/or local vocation education assurances and special vocational programs. The three levels of evaluation should address operational processes, student achievement, services to special populations and follow-up of students and their employers. Another activity supporting a quality assurance program involves the development, implementation and maintenance of a records information system. Such a system will facilitate ready access to current and accurate information on the quality of the training system.

117. Facilities and Equipment Utilization. Facilities and equipment are under-utilized due to declining enrollments. The vocational and technical training system is not effectively using these resources to achieve outcomes. Therefore, it is recommended that the feasibility of multiple facility use be studied. These facilities could be used for many purposes -- instruction, school-based production or service oriented enterprises, private-sector operations, individuals pursuing avocational interests and continuing nonformal education activities. All should be explored and encouraged to use the facilities as appropriate on a pay-upon-use basis. The primary mission of providing vocational and technical instruction in the facilities should take precedent over other uses. Use of the facilities for other than instructional purposes must come second.

118. A first supporting activity involves taking an inventory of under-used facilities by location, type, size, equipment and availability. That inventory should be documented and distributed to all those who might have a need for and interest in securing space for their activities.

119. A second activity involves a comprehensive analysis of instructional needs within the vocational and technical training system itself. After having identified the training needs, an analysis between current needs and available facilities should be carried out. Discrepancies between what space is needed for training and what is available should be noted. Only after all instructional needs have been attended to should action be taken to solicit other users for school facilities.

120. A third supportive activity involves actively promoting the availability of under-used facilities. Those who will market unused space should do so in the most effective and efficient manner possible. This involves developing a marketing program that clearly identifies potential customers, describes available facilities and clarifies terms and conditions of use.

121. Nonformal Education Subsector. The Education Law of 1991

makes mention of the need to provide education through formal and nonformal means. Additionally, large numbers of Mongolians are not being adequately served by the formal education sector. Little has been done to organize and develop this subsector. Thus, there is a need to develop a national policy on nonformal education that clearly specifies mission, goals, priorities, structure, roles and responsibilities. That effort should reflect the recommendations adopted by participants of the June 1992 national workshop on the preparation of literacy follow-up materials in Mongolia and the goals of the National Plan of Action. Those recommendations were submitted to the Ministry of Science and Education, the Asian Cultural Center for UNESCO and UNESCO. Once policy has been established a number of optional supporting activities are suggested for implementing and maintaining a continuous program of nonformal education for those Mongolians not served by the formal sector. Particular emphasis should be given to nonformal education programs that address basic education and adult and continuing education.

122. The first supporting activity should investigate and document the present status of nonformal education in Mongolia and elsewhere. Those who provide nonformal education in all sectors should be identified and described. Special emphasis should be placed on identifying and describing the linkages between and among providers of nonformal education. The extent to which each is linked to the other should be studied and described in detail. The results of this activity should be compiled, documented and distributed nationwide to those engaged in or involved with the delivery of nonformal education.

123. A second supporting activity should build upon what was learned in the assessment of the nonformal education subsector and develop a structure and organization for coordination of nonformal education in all sectors. The roles, responsibilities and even job descriptions of "key" players should be documented and distributed to appropriate individuals and organizations in both the public and private sectors.

124. Identifying, analyzing and documenting good "practices" in the delivery of nonformal education is a third optional activity. Study of nonformal education practices should focus on what methods work best, what characteristics are displayed by successful teachers and facilitators and what materials are most effective. The results of this effort should be compiled, documented and distributed nationwide.

125. A series of symposia on nonformal education could be conducted -- focusing on international, national and local practice. A symposium on international nonformal education practice could start the series. International leaders in nonformal education could come to Mongolia and share their good "practices" with interested parties. Secondly, that which is learned from comprehensive study of Mongolia's efforts in nonformal education could be shared through a national symposium. Those who have been identified as leaders in nonformal education should be invited to present their views on the current

status of nonformal education in Mongolia. Others who have been identified as successful practitioners should be given the opportunity to share their promising practices with symposium participants. The presentations, deliberations and subsequent recommendations of the symposium should be documented and made available to interested parties. A third component of the series could be local symposia held in selected aimags. Here, local nonformal educators will convene to share promising practices. They will also describe, discuss and take action on critical issues facing the delivery of nonformal education.

126. Still another activity supporting the development of nonformal education involves establishment and operation of a national clearinghouse or resource center for nonformal education. It could maintain a national registry of nonformal education activities such as planned, ongoing and completed nonformal education projects. The registry could further include the names of nonformal education teachers and facilitators. This clearinghouse or center could further maintain documents pertinent to the administration and delivery of nonformal education activities. It could serve as a valuable source of teaching materials for those who must deliver instruction in the nonformal education arena.

127. Pilot nonformal education projects could be initiated in selected areas not adequately served by formal schooling. Three such pilot efforts might address a theme of improving the quality of life. The first pilot effort could address basic education, the second continuing education, and the third adult education. These efforts could be strictly monitored and results compiled to provide a data base upon which to develop and deliver subsequent nonformal education activities.

128. Still another optional activity could introduce nonformal education issues into the curricula of universities and other appropriate educational institutions. In this manner the concept of nonformal education will reach those students and faculty members who one day may be making critical decisions about education.

129. The potential of youth organizations should be explored as a means of providing continuing education for those who are not being adequately served by the formal education system.

130. Resource Development. In view of the dramatic changes occurring within the Mongolian context, there is need for a fundamental rethinking of the way in which resources are secured and allocated for purposes of pre-employment training and worker retraining. Both the public and private sectors must engage in collaborative efforts to secure resources in support of workforce training and retraining. Working together, representatives of the private sector and government must develop proposals that call for support of joint ventures to train and retrain the Mongolian workforce.

131. One such project option seeks to establish close ties between

small enterprise promotion programs -- e.g. the Small Enterprise Promotion Center -- and vocational training schools. Increasingly, vocational program graduates will need to find employment in small enterprises or may initiate their own enterprises. The introduction of business and entrepreneurship components into the vocational curriculum could increase the chances of graduates achieving success in small businesses.

132. Still another project seeks to develop a strategy for training the rural unemployed in the fundamentals of self-employment and small enterprise development. The strategy should be capable of reaching the unemployed at the aimag and somon levels. This goal may be achieved by establishing networks with the Central Union of Mongolian Consumers Cooperatives as contact points along with local training and production centers and local nongovernmental organizations.

133. A third project idea addresses the creation of small-business assistance centers in selected training and production centers. Strategically located throughout the country, these centers could be designated as "incubators" for the creation of new private enterprises that process Mongolia's raw materials, fabricate products, and/or provide personal services for an emerging market driven economy.

134. A final project idea could support attaching a select number of training and production centers to the Mongolian Employers' Association. The Association which has some 3,800 small scale private sector enterprise members uses membership fees to finance services such as lobbying, legal services, facilitating contracts and brokerage services in areas such as training and identification of raw material sources. The training centers could serve as direct training sites fulfilling member training needs and/or as a link to other education providers.

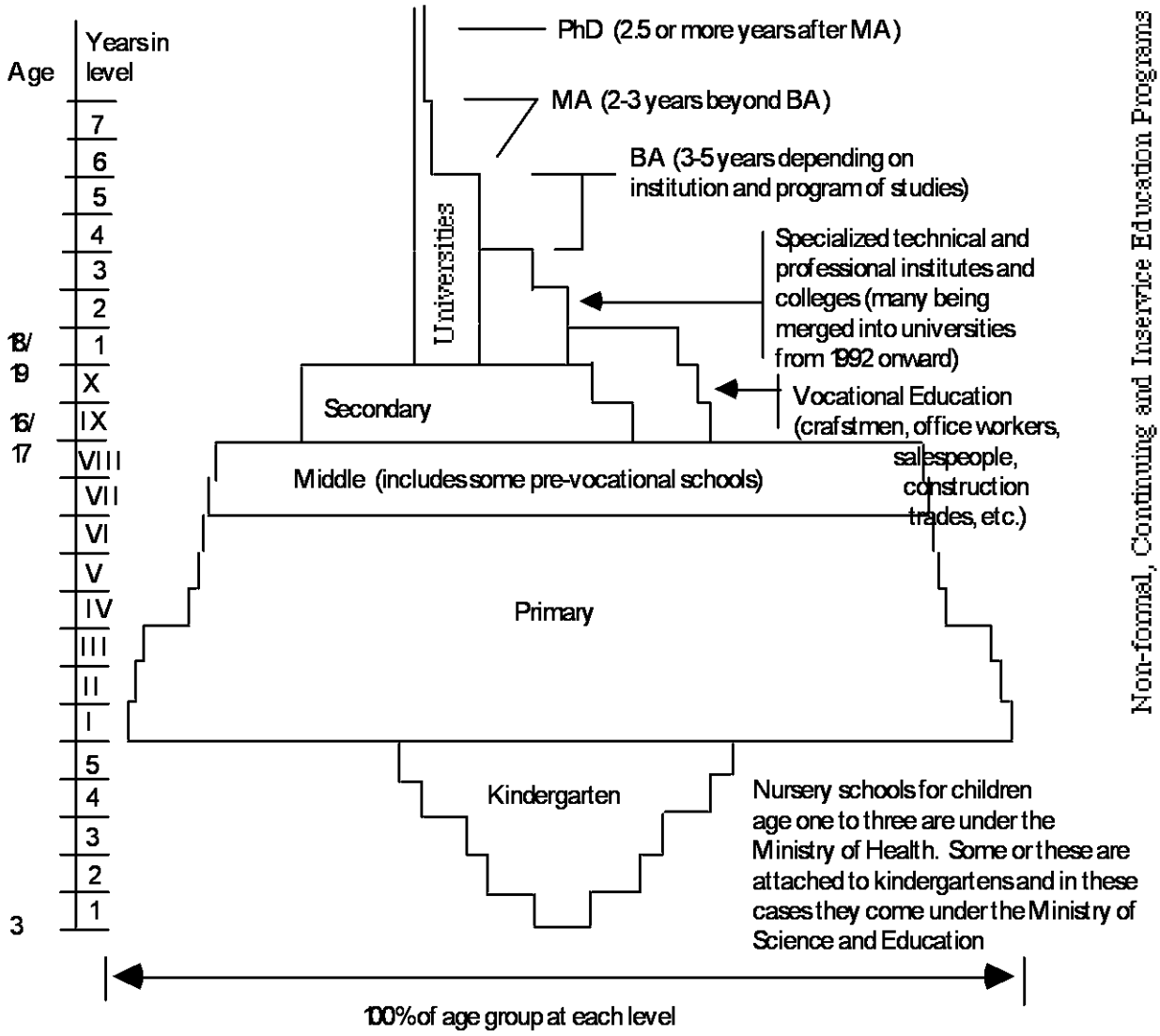
135. Whatever the final priorities selected by Mongolia for this subsector, the changes in VTE and nonformal education are likely to be substantial. Without assured funding and guaranteed jobs for graduates VTE programs must work harder to meet the needs of their students and the larger society. If vocational and technical education programs are to survive as a part of publicly financed education, there must be strong evidence that it can do something that the private training can not do as cost-effectively. The public VTE subsector will undoubtedly be smaller in the short run, because of both contraction caused by fiscal limitations and increased privatization of training. However, if the proper choices are made, a smaller but more internally efficient and externally relevant subsector will evolve.

136. The future pattern of growth in the nonformal area is even harder to predict. There seems little question that the demand for nonformal learning activities will increase as formal learning opportunities are limited. However, the ability of government and nongovernmental agencies to organize effective nonformal opportunities

remains to be proven. Again, tough choices, clear priorities, and a recognition of the limit of what government can do are all precedents to sucessful planning in this subsector.

FIGURE 1-1

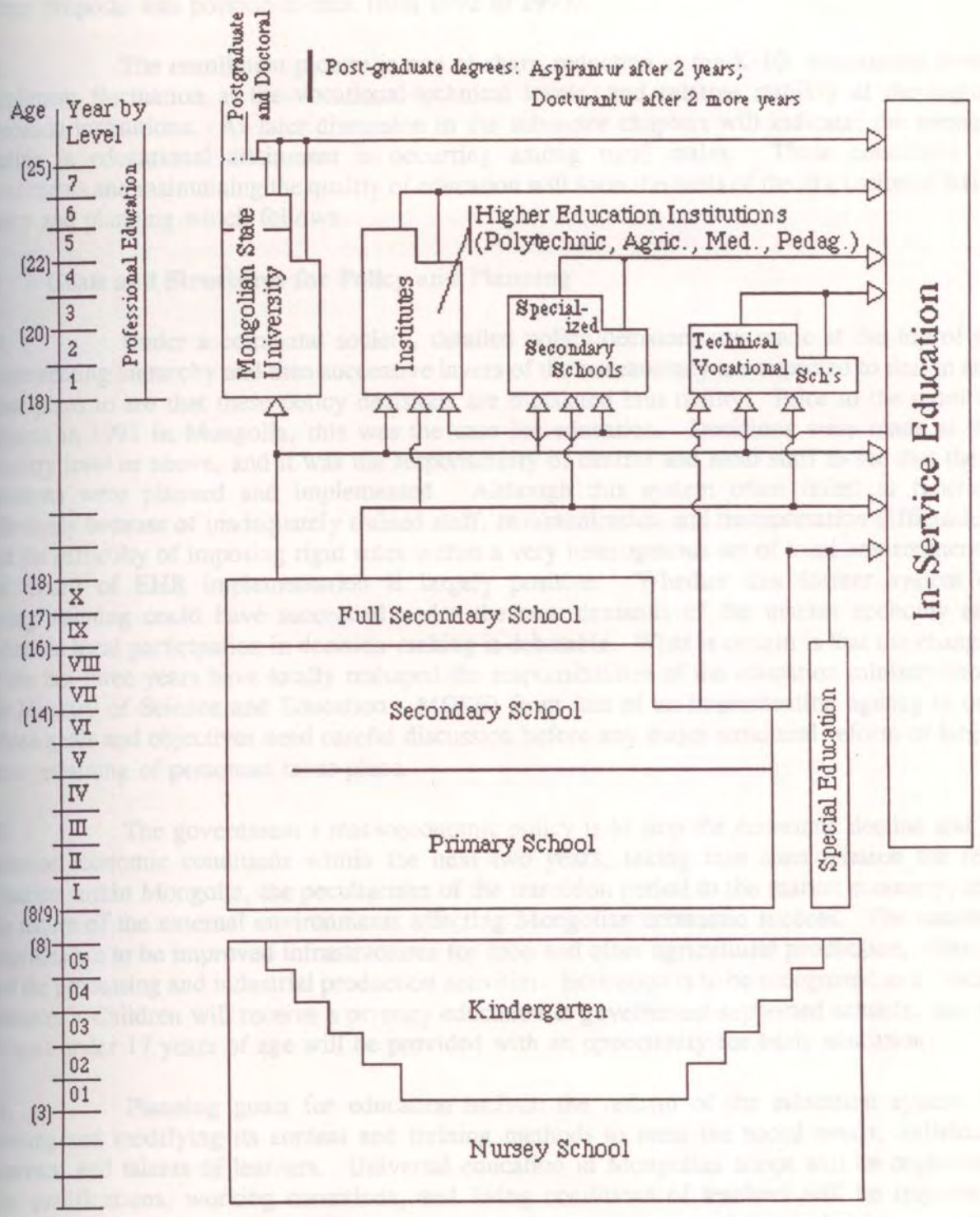
THE EDUCATION SYSTEM OF MONGOLIA



Note: The post-secondary degree structure on this chart was agreed upon in early 1992. Degrees offered earlier were as follows: *Diploma,* after five years of post-secondary study; *Candidate,* after 3 more years of *Aspirant* or post-graduate study; and *Doctor* after 2.5-3 years of additional study. Under the new system, some institutions may offer a *Doctor* after the Ph.D. because of the feeling of some academics that the old Russian *Doctor* was of higher level than the Ph.D. Drawn approximately to scale representing enrollment figures at each level as of the 1991- 1992 school year. However, dropouts in grades one to ten during 1991-2 and 1992-3 were sizeable (see tables 4.7 and 4.8) and the number of kindergartens is decreasing. Thus, this table suggests slightly larger percentages of enrolment than was the case at the end of the 1992-3 school year.
Source: Data from the Ministry of Science and Education.

FIGURE 1-2

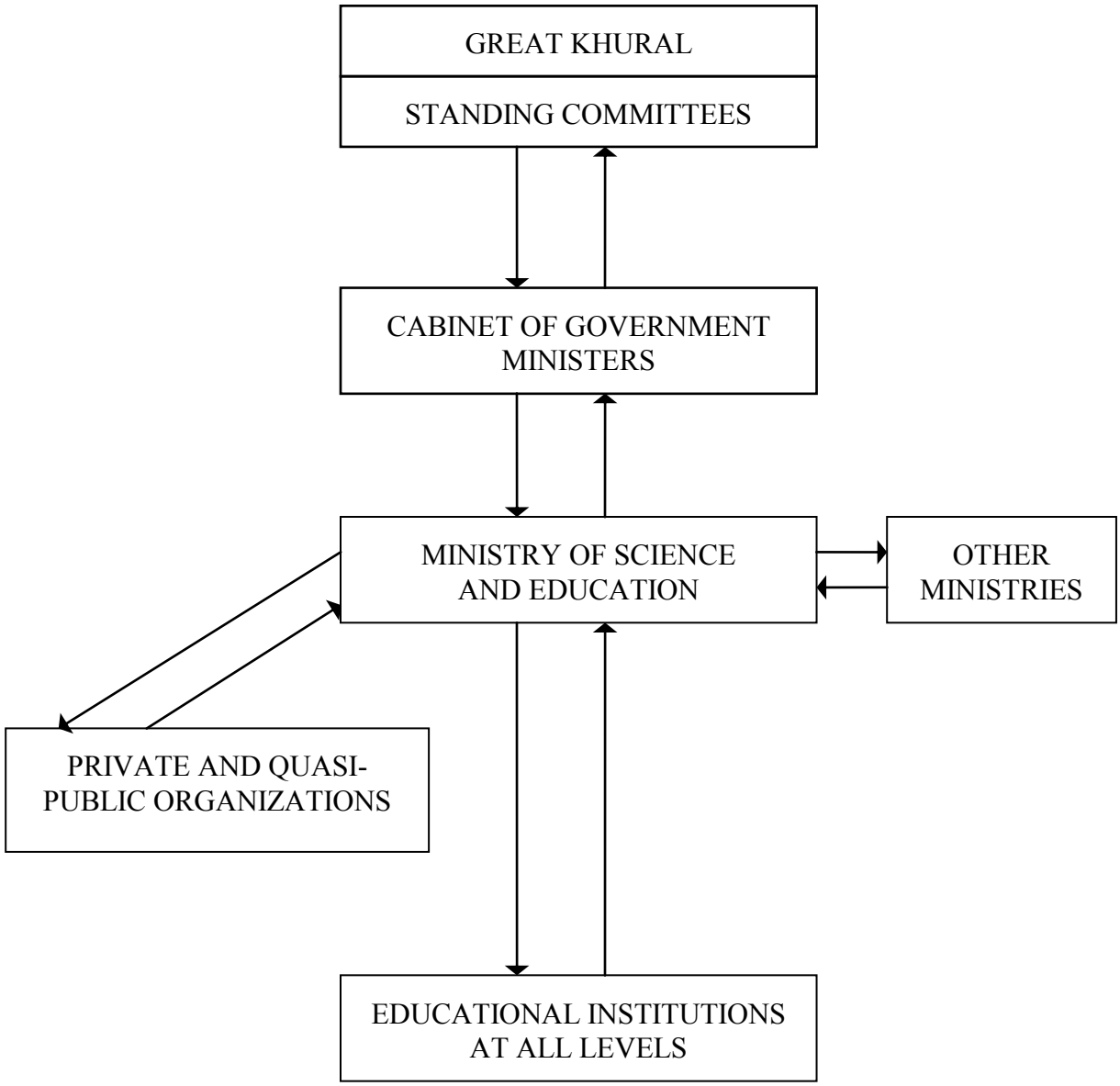
EDUCATION SYSTEM OF MONGOLIAN PEOPLE'S REPUBLIC (1990)



SOURCE: Ministry of Science and Education, Mongolia, July, 1993.

Figure 1-3

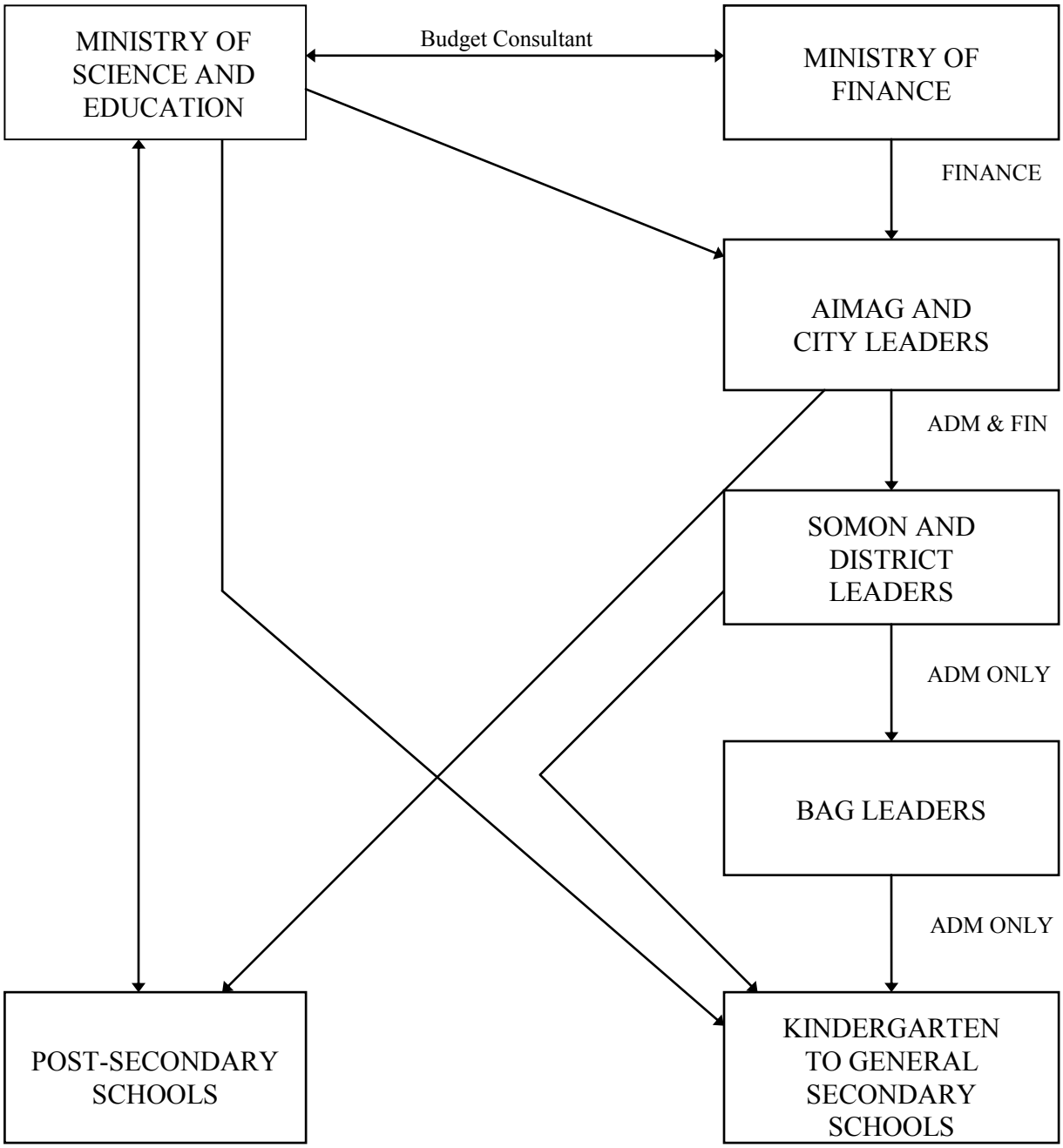
LEGISLATIVE AND EXECUTIVE RELATIONSHIPS IN POLICY MAKING



SOURCE: Ministry of Science and Education, 1993.

Figure 1-4

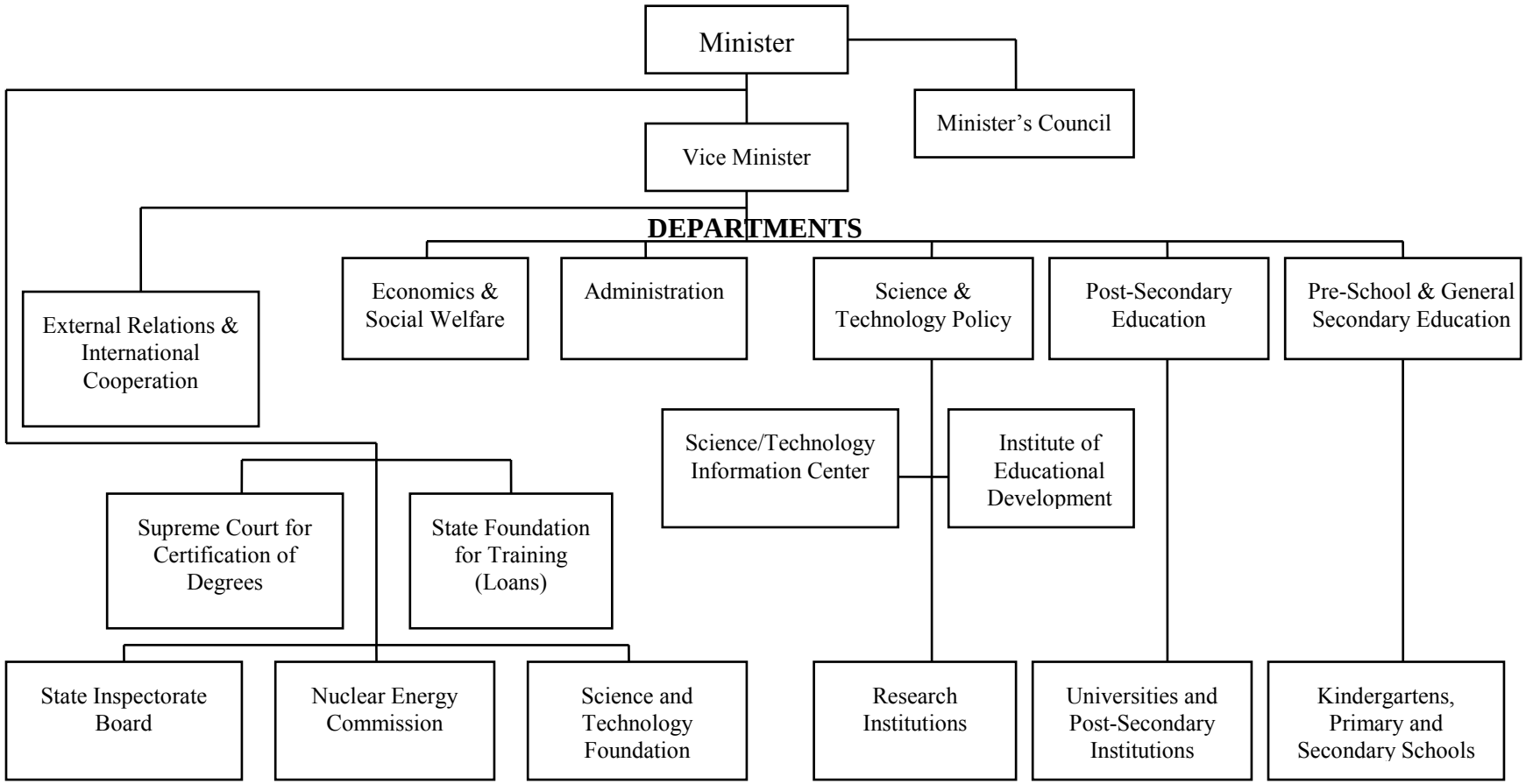
DECENTRALIZED MANAGEMENT OF EHR ACTIVITIES



SOURCE: Ministry of Science and Education, 1993.

Figure 1-5

ORGANIZATION CHART OF THE MINISTRY OF SCIENCE AND EDUCATION



SOURCE: Data supplied by the Ministry of Science and Education, July, 1993.

FIGURE 3-1

MEMBERSHIP OF THE HIGHER EDUCATION REFORM COMMISSION AND THE FOUNDATION FOR THE PROMOTION OF HIGHER EDUCATION, MONGOLIA

Higher Education Reform Commission

Established by act of Parliament of June 8, 1991. Purpose of the Commission: to coordinate policy and planning studies between and among higher education institutions; encourage institutional studies necessary for intelligent decision-making; prepare fact books and proposals for international agencies and other funding groups.

Headed by a Chairman, a Deputy Chairman and a Secretary. Current chair is a legislator, the Deputy Chair is a former legislator, and the Secretary is the Director-General of Science and Technology of the Ministry of Science and Education.

Members include: Vice Pres., Academy of Sciences; Rector, Mongolian National Univ.; Director General, Post-Secondary Education, MOSE; Rector, Technical University; Vice Rector, Medical University; Vice Rector, Agricultural Univ.; Editor in Chief, National Progress Newspaper; Member of Parliament; Member of Parliament; Vice Rector, Pedagogical University; Principal, College of Commerce and Business; Researcher, Educational Development Institute; Rector, Economics College; Member of the Academy of Sciences; Member of the Academy of Sciences and Honour Teacher of Mongolia.

Three staff were originally authorized but as of July, 1993, funding has been provided for one and one-half staff members.

Foundation for the Promotion of Higher Education

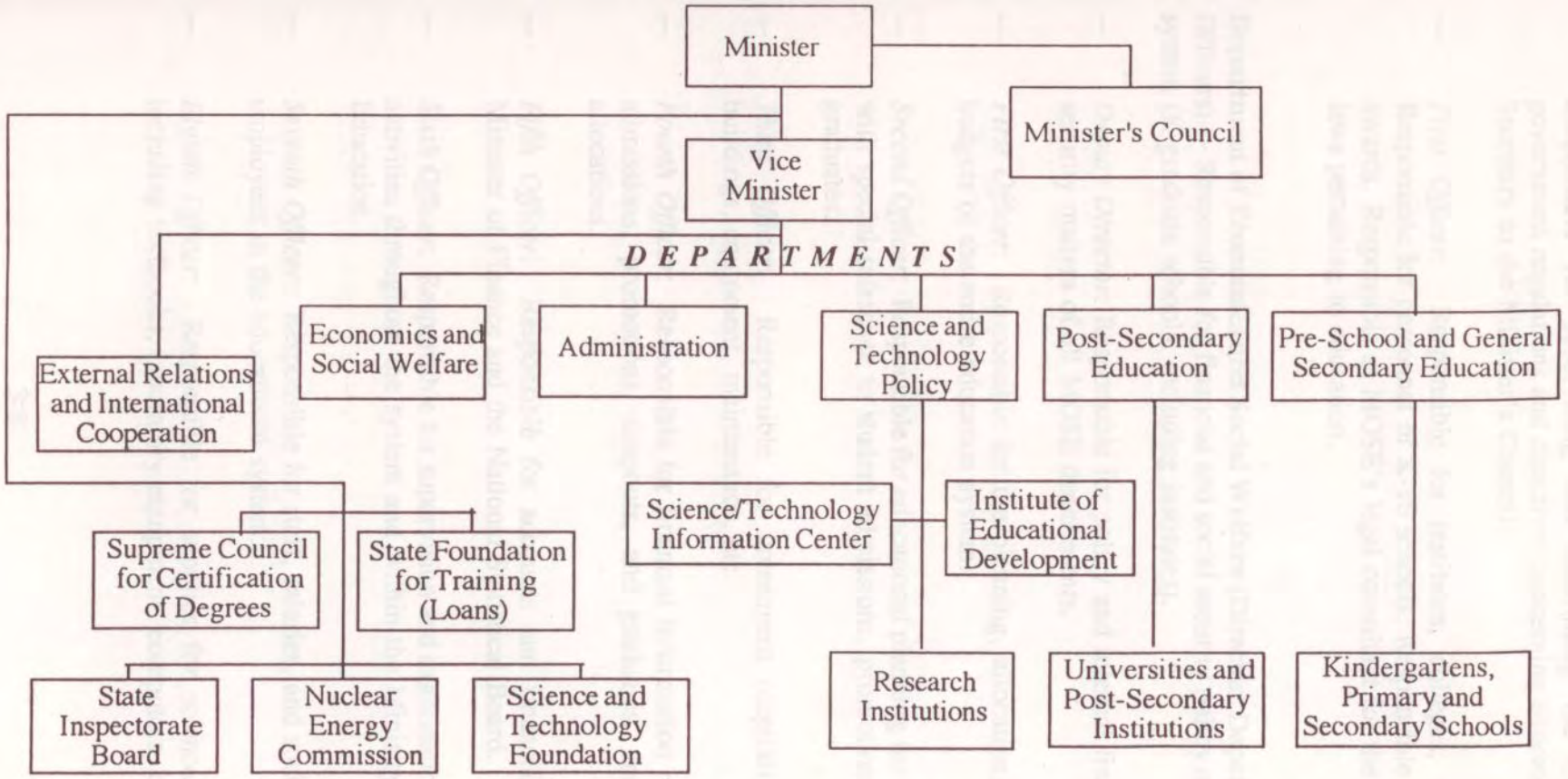
Established in 1992. Private Foundation with the purpose of promoting the interests of higher education locally, nationally and internationally.
Headed by a President (former legislator), a Vice President (Director-General of Science and Technology, Ministry of Science and Education); and a Secretary (Principal, College of Commerce and Business).

Members include: Legislator; Director of the Technological Institute of the Academy of Sciences; Director, Institute of National Physical Training; Ambassador to France; President, Mongolian Association of Cooperatives; Assistant of Vice Prime Minister; Head, Foreign Relations Department, Ministry of Science and Education; Ambassador to the European Economic Community; Director, Trade and Food Company; Director General of Dept., Ministry of Science and Education; Rector, Private Institute of Accountancy; Vice Rector, Pedagogical University; Rector, Private University for Mongolian Knowledge; and others.

SOURCE: Materials provided by the Commission and the Foundation, Ulaanbaatar, Mongolia, July, 1993

FIGURE 3-2

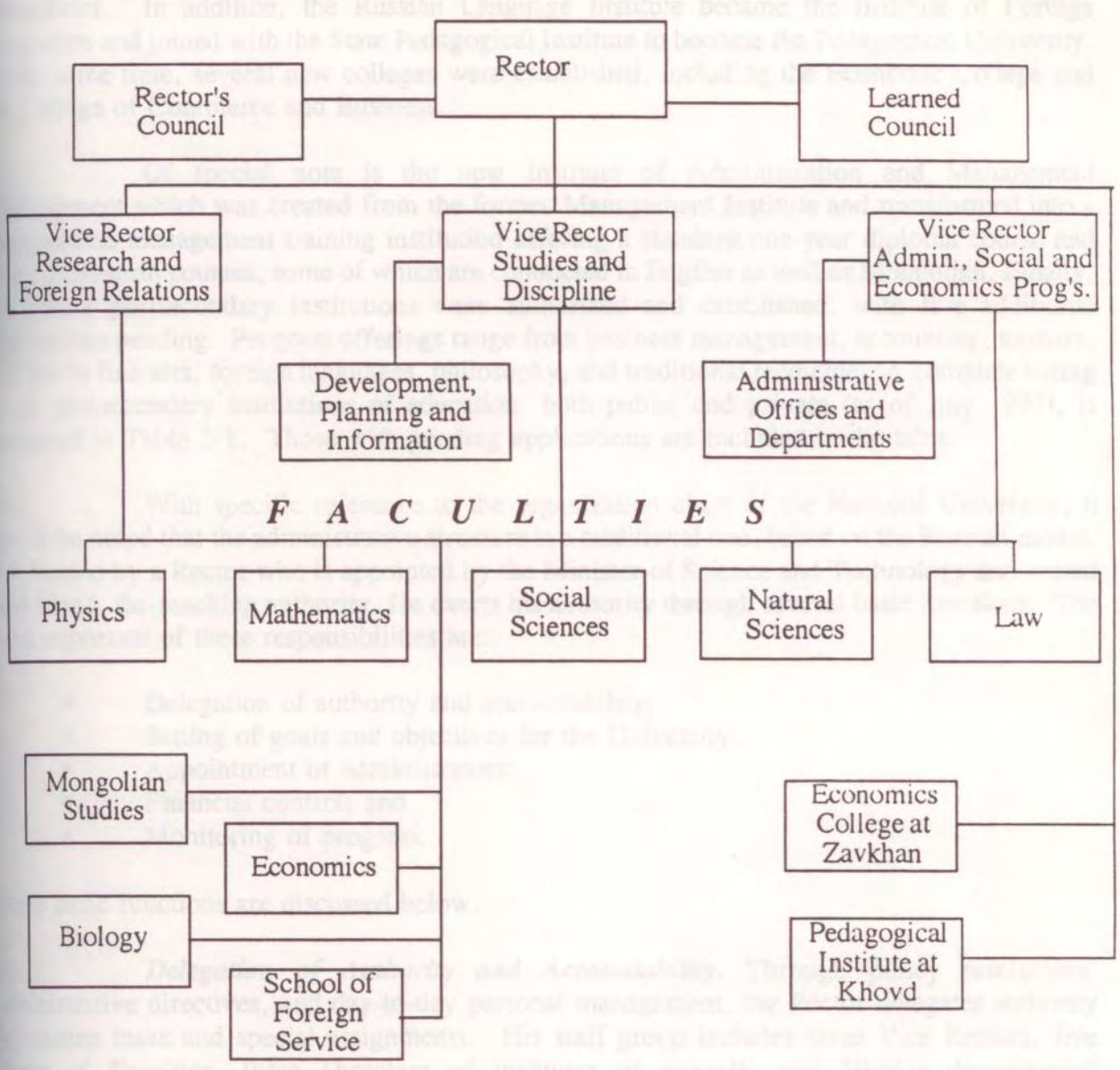
ORGANIZATION CHART OF THE MINISTRY OF SCIENCE AND EDUCATION



SOURCE: Data supplied by the Ministry of Science and Education, July, 1993

FIGURE 3-3

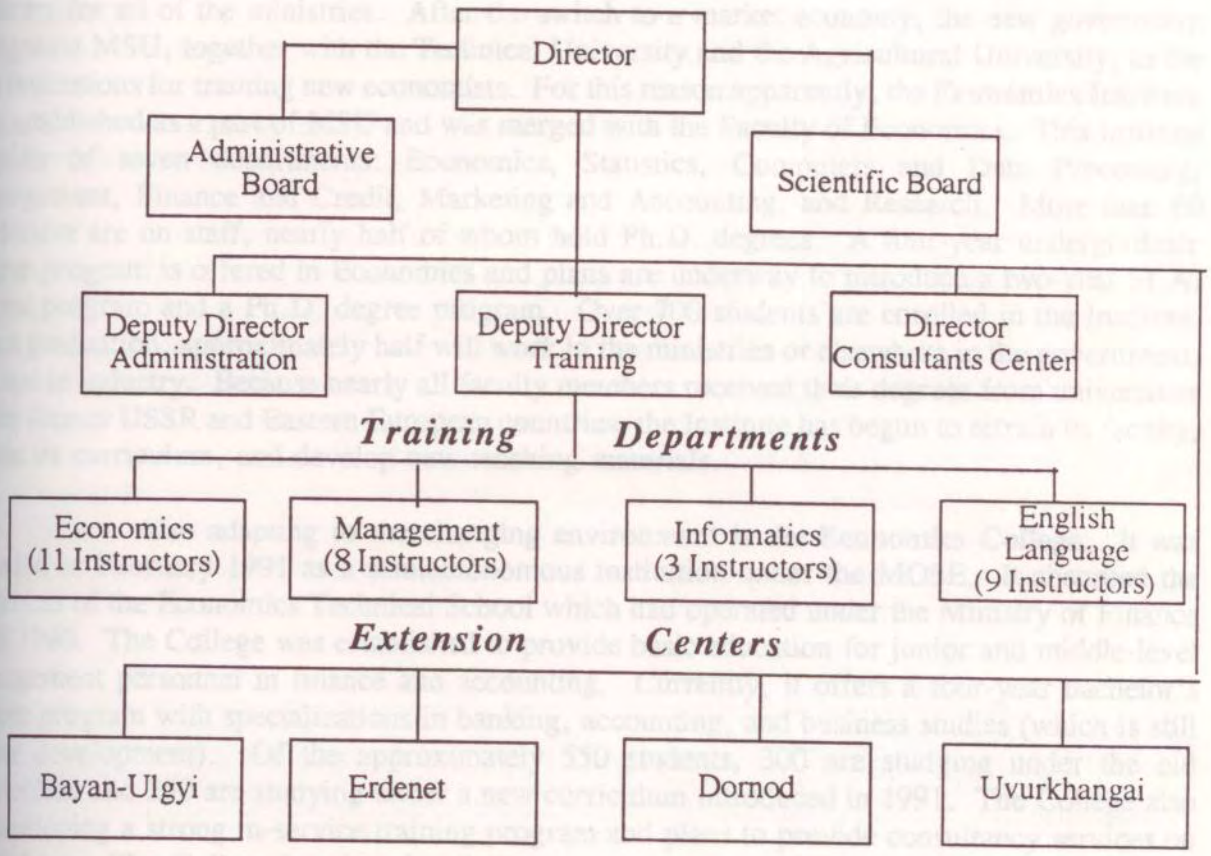
ORGANIZATION CHART OF THE NATIONAL UNIVERSITY OF MONGOLIA (NUM)



SOURCE: Constructed from information provided by the National University of Mongolia, July, 1993

FIGURE 3-4

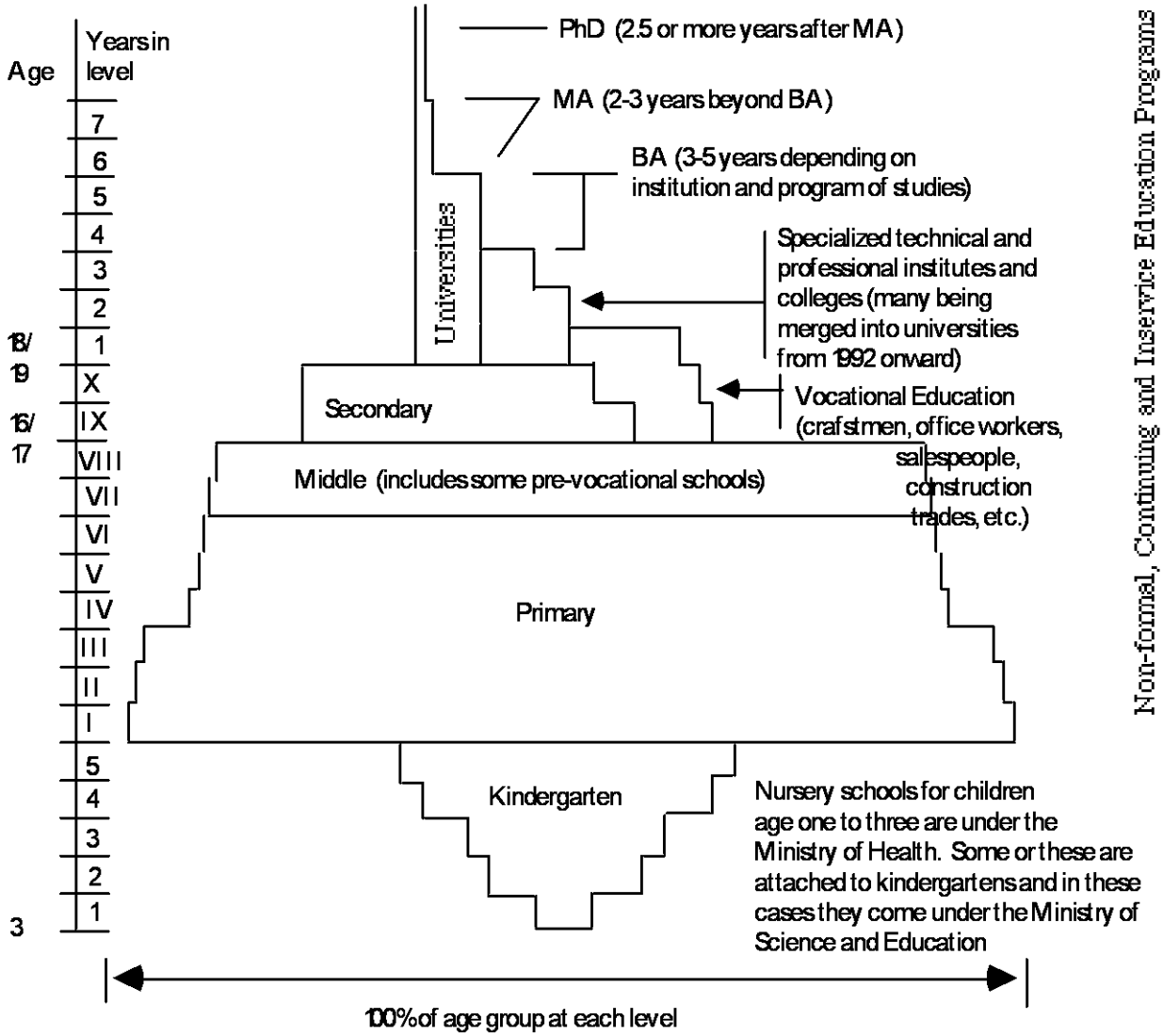
ORGANIZATION CHART OF THE INSTITUTE OF ADMINISTRATION AND MANAGMENT DEVELOPMENT



SOURCE: Institute of Administration and Management, July, 1993

FIGURE 4-1

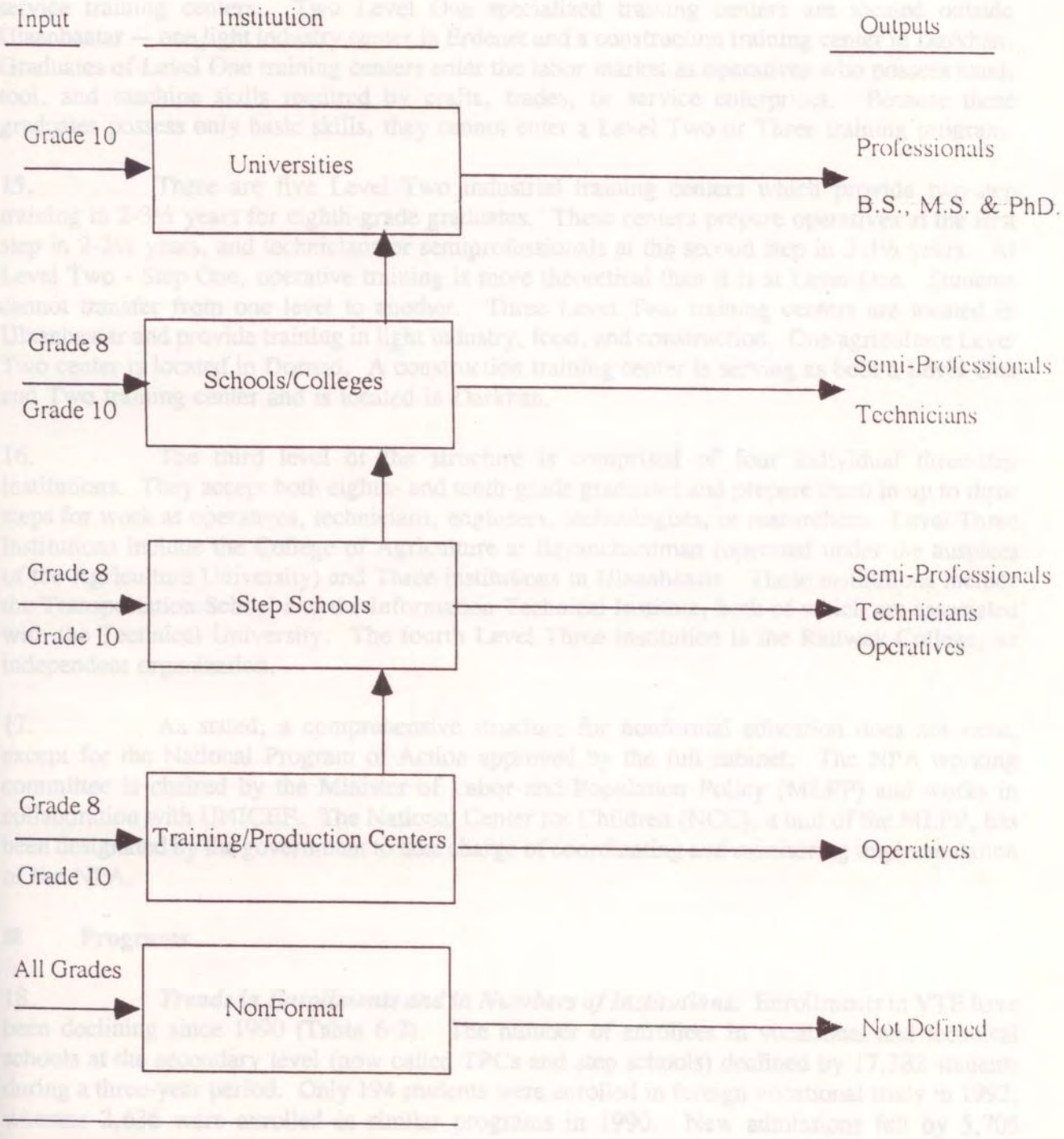
THE EDUCATION SYSTEM OF MONGOLIA



Note: The post-secondary degree structure on this chart was agreed upon in early 1992. Degrees offered earlier were as follows: *Diploma,* after five years of post-secondary study; *Candidate,* after 3 more years of *Aspirant* or post-graduate study; and *Doctor* after 2.5-3 years of additional study. Under the new system, some institutions may offer a *Doctor* after the Ph.D. because of the feeling of some academics that the old Russian *Doctor* was of higher level than the Ph.D. Drawn approximately to scale representing enrollment figures at each level as of the 1991- 1992 school year. However, dropouts in grades one to ten during 1991-2 and 1992-3 were sizeable (see tables 4.7 and 4.8) and the number of kindergartens is decreasing. Thus, this table suggests slightly larger percentages of enrolment than was the case at the end of the 1992-3 school year.
Source: Data from the Ministry of Science and Education.

FIGURE 6-1

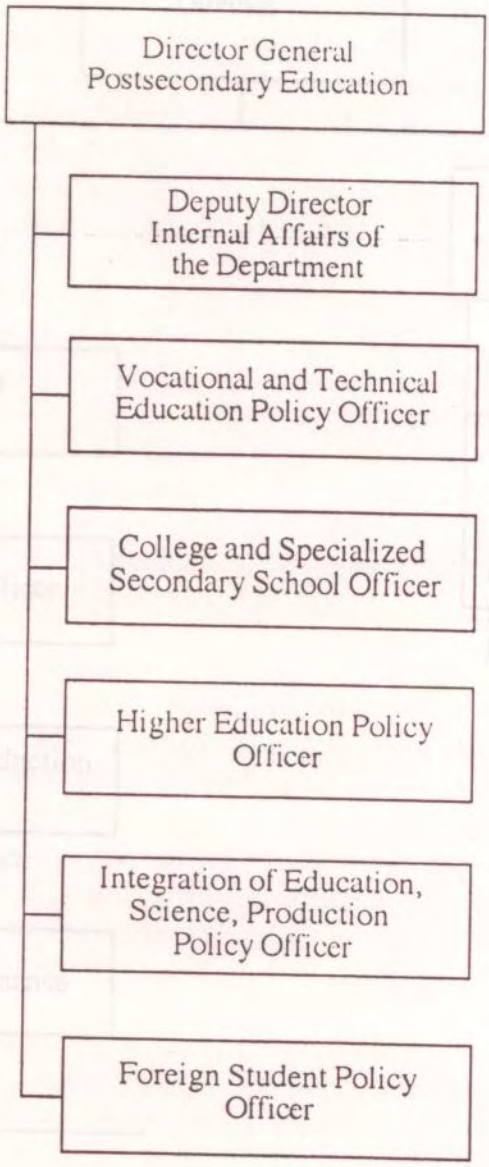
SYSTEM STRUCTURE



SOURCE: Ministry of Science and Education, 1993

FIGURE 6-2

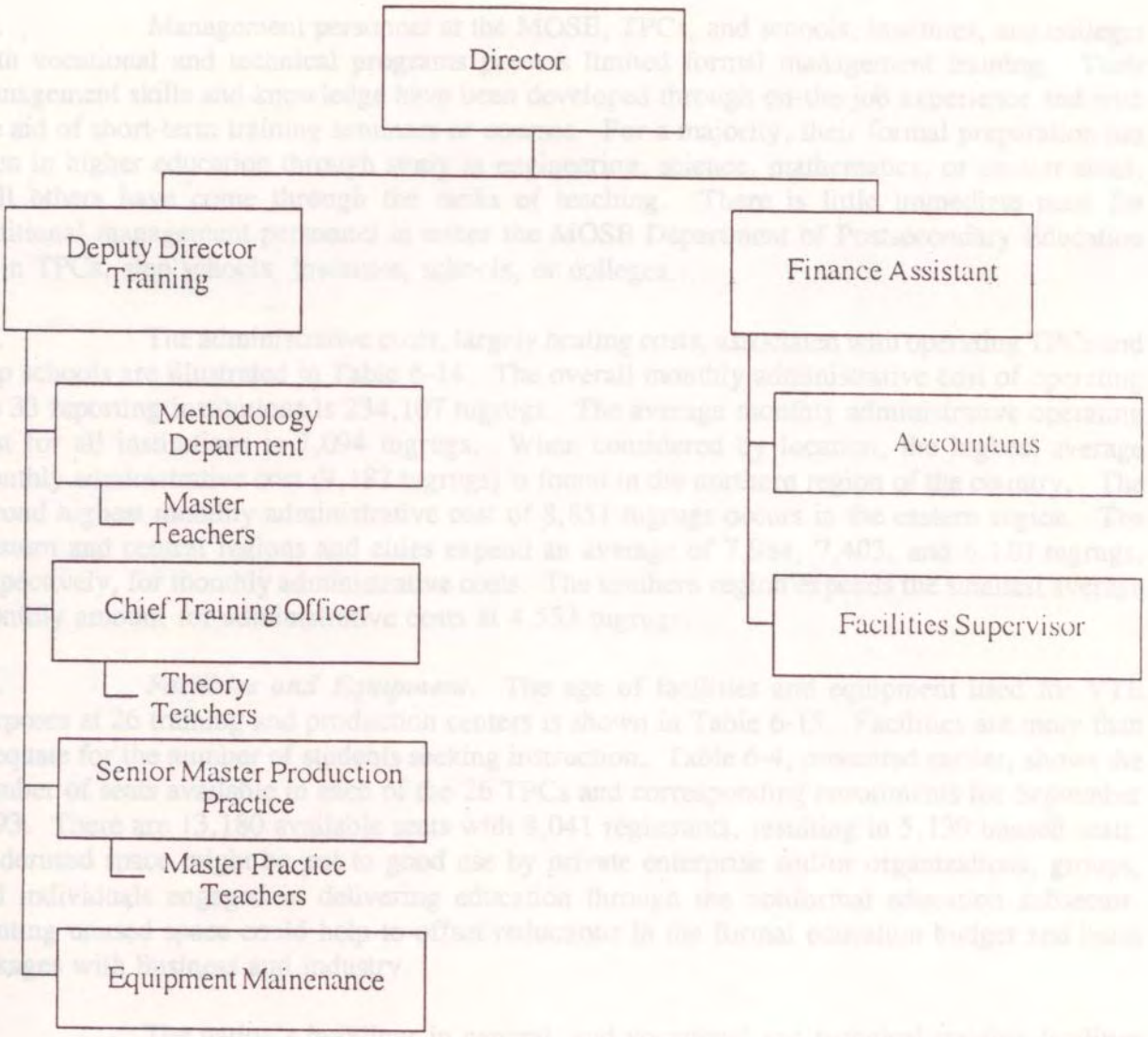
ORGANIZATION OF THE POSTSECONDARY EDUCATION DEPARTMENT OF THE MINISTRY OF SCIENCE AND EDUCATION



SOURCE: Ministry of Science and Education, 1993

FIGURE 6-3

ORGANIZATION CHART OF TRAINING AND PRODUCTION CENTER, 1992



SOURCE: Ministry of Science and Education, 1993

TABLE 1-1

DEMOGRAPHIC STATISTICS

ITEM	1989	1990	1991	1992 (1ST 6 MONTHS)
		(IN THOUSANDS)		
TOTAL	2047.7	2103.3	2156.3	2179.2
MEN	1021.1	1048.6	1074.9	1087.4
WOMEN	1026.6	1054.7	1081.4	1091.8
URBAN	1146.7	1177.9	1207.5	
MEN	566.7	581.9	596.6	
WOMEN	580.0	596.0	610.9	
RURAL	901.0	925.4	948.8	
MEN	454.4	466.7	478.3	
WOMEN	446.6	458.7	470.5	
AGE GROUP				
0-4	328.8	332.7	332.2	
5-9	276.0	284.5	295.5	
10-14	250.4	254.9	258.6	
15-19	227.4	232.0	239.9	
20-24	197.0	204.3	206.4	
25-29	182.7	182.6	189.4	
30-34	135.3	149.8	155.0	
35-39	91.2	94.1	106.0	
40-44	66.0	71.9	72.9	
45-49	67.6	63.4	63.5	
50-54	52.8	58.1	59.2	
55-59	52.8	50.3	50.7	
60-64	35.4	38.2	39.0	
65-69	32.6	31.5	30.8	
70-+	51.9	54.9	57.2	
URBAN BIRTHS	36.4	36.6	35.2	
MALE	18.8	18.6	18.2	
FEMALE	17.6	18.0	17.0	
RURAL BIRTHS	36.6	35.7	35.3	
MALE	18.5	18.2	17.8	
FEMALE	18.1	17.5	17.5	

SOURCE: Ministry of Labor and Population Policy, 1993

TABLE 1-2

DEMOGRAPHIC STATISTICS

ITEM	1989	1990	1991
	(Percentages)		
TOTAL			
MEN	49.9	49.9	49.9
WOMEN	51.1	51.1	51.1
URBAN	56.0	56.0	56.0
RURAL	44.0	44.0	44.0
AGE GROUP			
0-4	15.9	15.8	15.4
5-9	13.5	13.5	13.7
10-14	12.5	12.1	12.0
15-19	10.8	11.0	11.1
20-24	9.6	9.7	9.6
25-29	8.8	8.7	8.8
30-34	6.6	7.1	7.2
35-39	4.5	4.5	4.9
40-44	3.4	3.4	3.4
45-49	3.3	3.0	2.9
50-54	2.7	2.8	2.8
55-59	2.5	2.4	2.4
60-64	1.8	1.8	1.7
65-69	1.5	1.5	1.4
70-+	2.5	2.6	2.7
BIRTHS PER 1000	36.5	35.3	33.1
NET POPULATION INCREASE	2.6	2.6	2.6

SOURCE: Government Statistics Center, 1993

TABLE 1-3

POPULATION INDICES

(in thousands)

TITLE	1991	1992	1993
TOTAL (END OF YEAR)	2187.2	2239.9	2294.1
TOTAL (ANNUAL AVERAGE)	2168.3	2213.6	2267.0
CITIZENS (END OF YEAR)	2154.6	2204.6	2254.0
CITIZENS (ANNUAL AVERAGE)	2129.0	2179.6	2229.3
BIRTHS PER 1000	33.0	32.2	31.4
DEATHS PER 1000	8.8	8.7	8.6
AVERAGE INCREASE	2.4	2.3	2.2

TITLE	1994	1995	1996
TOTAL (END OF YEAR)	2349.8	2407.1	2466.1
TOTAL (ANNUAL AVERAGE)	2321.2	2378.4	2436.6
CITIZENS (END OF YEAR)	2302.7	2350.6	2397.8
CITIZENS (ANNUAL AVERAGE)	2278.4	2326.7	2374.2
BIRTHS PER 1000	30.5	29.7	28.9
DEATHS PER 1000	8.6	8.5	8.4
AVERAGE INCREASE	2.2	2.1	2.0

SOURCE: Ministry of Labor and Population Policy, 1993.

TABLE 1-4

POPULATION PROJECTIONS FOR MONGOLIA
(in thousands)

POPULATION	1990	1995	2000	2005
TOTAL	2048.6	2335.9	2645.2	2966.6
UNDER 16	900.6	993.7	1097.3	1161.5
FEMALE (16-55)	481.7	566.9	658.7	768.3
MALE (16-60)	520.2	609.5	703.8	813.7
FEMALE (OVER 55)	92.1	101.6	109.6	117.7
MALE (OVER 60)	53.9	64.2	75.8	87.1

RELATIVE POPULATION SIZE

POPULATION	1995/1990	2000/1995	2005/2000
TOTAL	114.0%	113.2%	112.2%
UNDER 16	115.3	110.4	107.7
FEMALE (16-55)	117.7	116.2	116.6
MALE (16-60)	117.2	115.5	115.6
FEMALE (OVER 55)	110.3	107.9	107.4
MALE (OVER 60)	119.1	118.1	114.9

SOURCE: Ministry of Education and Science and Ministry of Labor and Population Policy, 1989.

TABLE 1-5

SUMMARY ECONOMIC INDICATORS

	1990	1991	1992
GNP per Capita ($US)	407.0	331.3	299.2
Real GDP Growth Rate (%)	-2.5	-16.2	-7.6
Real GDP Growth Rate per Capita (%)	-5.2	-18.6	-9.7
Fiscal Deficit (% GDP)	13.5	12.6	9.9
Inflation Rate (CPI %)	N\A	120.1	321.1
Current Account Deficit (% GDP)	28.3	7.0	11.0
Exports as % GDP	20.8	23.0	27.5
Debt Service Ratio	13.4	5.7	13.9
Composition of GDP (%)			
Agriculture	20.3	19.6	34.5
Industry	35.0	32.5	41.7
Services	44.7	47.9	23.8
Population below Poverty Line (%)	N\A	N\A	16.7

SOURCE: Asian Development Bank estimates, 1993.

TABLE 2-1

PERCENTAGE COMPOSITION OF GDP AT CURRENT FACTOR COST, 1980-90

	1980	1982	1984	1986	1988	1990
Industry	29.2	29.8	31.9	32.8	33.0	33.8
Agriculture	18.6	20.9	19.9	21.8	19.4	20.2
Construction	7.1	6.0	5.7	6.2	7.2	5.7
Transport	13.6	13.3	13.3	13.5	12.7	11.3
Communications	1.3	1.5	1.7	1.7	1.8	1.9
Trade and catering	9.7	9.9	9.3	5.3	7.1	9.1
Other material sphere	2.0	1.8	1.7	1.8	1.5	1.4
Non-material services	18.7	16.9	16.5	17.0	17.4	16.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: The World Bank (1992): *Mongolia: Toward a Market Economy*, Washington, p.104.

TABLE 2-2

PERFORMANCE OF SELECTED INDUSTRIAL OUTPUTS, 1989-92

Product	Unit of measure	1989	1990	1991	1992	1992/ 1991
Electricity	mln. kw/hr	3,002.6	2,814.2	2,549.7	2,406.7	94.4
Thermo-power energy	'000 Gkal	6,818.5	7311.4	8,054.0	7,977.4	99.0
Coal	'000 tons	8,044.5	7,157.0	7,036.8	5,977.5	84.9
Copper concentrate	'000 tons	352.8	354.0	257.4	300.2	116.6
Molybdenum concentrate	tons	3,361.0	4,208.0	3,718.0	3,500.0	94.1
Carpets	'000 sq meters	2,128.1	1,971.2	1,400.2	1,037.0	74.1
Knitware	'000 units	4,110.5	4,248.6	2,808.7	1,411.7	50.3
De-haired cashmere	tons	250.0	240.1	190.7	97.6	51.2
Cashmere tops	tons	68.9	67.0	57.7	29.6	50.6
Scored wool	tons	10,104.7	9,733.7	7,197.1	7,057.3	98.1
Leather coat	'000 units	41.6	35.7	29.9	40.1	134.1
Leather jacket	'000 units	269.2	264.5	194.2	141.1	72.7
Sheepskin coat	'000 units	180.2	141.0	111.5	99.4	89.1
Flour	'000 tons	199.7	189.8	174.4	181.9	104.3
Livestock meat	'000 tons	57,803.2	54,218.6	46,873.8	24,661.2	52.6
Bread	tons	66,711.5	63,295.0	60,574.8	60,860.2	100.5
Milk/milk products	mln. liter	61.9	59.6	50.6	27.7	54.7
Vodka	'000 liter	4,923.9	6,438.4	6,769.2	6,686.6	98.8

SOURCE: Market Research Institute, 1993

TABLE 2-3

PERFORMANCE OF MAIN AGRICULTURAL OUTPUTS, 1991 AND 1992

Product	Unit of measure	1991	1992	1992/1991
Total Livestock	'000 heads	25,528	25,659	100.5
camels		476	414	87.2
horses		2,259	2,197	97.3
cattle		2,822	2,814	99.7
sheep		14,721	14,634	99.4
goats		5,249	5,598	106.6
Survived younglings	'000 heads	9,582	8,751	91.3
Meat for export	'000 tons	20	7	35.3
Butter	tons	3,090	1,317	42.6
Wool	'000 tons	25	18	69.3
Agricultural yield	'000 tons			
wheat		786*	494	62.8
potatoes		134*	78	58.6
vegetables		50*	16	32.5

* average of previous five years

SOURCE: Market Research Institute, 1993

TABLE 2-4

NEW JOINT VENTURES WITH FOREIGN COMPANIES, 1991-93

No. of Joint-Venture Companies, by Country of Partner

	1991	1992	1993 (June)	Total
Russia	8	34	16	58
China1	9	8	18	
Germany	1		2	3
Hong Kong		6	3	9
Singapore	1		1	2
USA	1		1	2
Denmark			1	1
Korea, Republic of			1	1
Switzerland	1			1
Japan1	5		6	
Czechoslovakia	2	1		3
Canada		1		1
Poland		1		1
Vietnam		1		1
Uruguay		1		1
Romania		1		1
Hungary		2		2
Taiwan		1		1
United Kingdom		2		2
Georgia		1		1
Others			6	6
TOTAL16	66	39	121	
LOCATION				
Ulaanbaatar	14	56	33	103
Darkhan	1	3	2	6
Erdenet		1		1
Uvurkhangai			1	1
Khentyi			1	1
Central			1	1
Sukhbaatar	1	2		3
Others		4	1	5

SOURCE: Mongol Messenger, 22 June 1993.

TABLE 2-5

SELECTED TAXATION RATES, 1993

I. Income Taxes

a) Company Income Taxes

Taxable Incomes (Tugrugs)	Amount of Tax
0-300,000	15%
300,001-700,000	45,000 + 35% of income over 300,000
700,001-1,500,000	145,000 + 35% of income over 700,000
over 1,500,000	425,000 + 45% of income over 1,500,000

b) Profits Taxes	15%
c) Sale of shares	
- on stock exchange	10% of income
- direct selling	2% of income
d) All kinds of games, video and audio cassettes, rent, lotteries and raffles	60% of income
e) Property Capital-Gains Tax	
- if property used 0 - 2 years	40%
- if property used 2 - 5 years	30%
- if property used over 5 yrs	20%
f) Interest-Payments Tax (on interest paid by banks)	10%

II. Personal Income Taxes

Taxable Income (Tugrugs)	Amount of Tax
24,001 - 78,001	2%
48,001 - 96,000	480 + 5% of income over 48,000
96,001 - 192,000	2,880 + 15% of income over 96,000
192,001 - 384,000	17,280 + 27% of income over 192,000
384,001 - 768,000	69,120 = 70% of income over 384,000
768,001 and over	222,720 + 75% of income over 768,000

III. Sales Tax

Total price of all goods and services whether imported or produced in Mongolia	10%

IV. Taxes on Animals

Horse, camel and cow	50 tugrugs each
Sheep	7.1 tugrugs each
Goat	5.6 tugrugs each

SOURCE: General Taxation Law, 1 January 1993

TABLE 2-6

BUDGET REVENUE AND EXPENDITURE, 1991-93 (MILLION TUGRUGS)

(PRELIMINARY FIGURES)

		1991 (actual)	1992 (estimate)	1993 (budget)
I. TOTAL REVENUE		6,065.1	11,697.4	38,407.2
Revenue from taxes		5,053.1	9,839.4	30,023.8
Revenue from fees		71.1	93.7	564.0
Revenue from charges		22.1	10.1	40.0
Non-tax revenues		886.3	1,139.0	2,889.4
External grants		32.5	615.2	4,890.0
II. TOTAL EXPENDITURE		8,917.8	11,489.9	37,134.2
Wages & allowances		2,007.4	3,103.5	7,453.8
Goods & services		2,545.1	4,193.8	16,478.5
Reserve fund and other		785.8	725.3	4,303.6
Subsidies		1,181.1	637.1	604.9
Social security		1,379.8	1,769.0	4,640.4
Other expenditures		0.0	132.9	120.0
Investment		1,018.6	1,053.8	3,533.0
III. GOVT TRUST FUND				
	Revenue	2,570.8	3,206.5	7,141.8
	Expenditure	2,406.4	3,206.5	7,135.6
Social Security	Revenue	2,221.8	2,392.6	5,915.1
	Expenditure	2,166.8	2,392.6	5,915.1
Transport Fund	Revenue	165.5	564.0	1,200.5
	Expenditure	181.9	564.0	1,200.5
Privatization Fund				
	Revenue	183.5	294.9	26.2
	Expenditure	57.7	294.9	20.0
IV. DEFICIT		-2,688.3	207.5	1,279.2
V. FINANCING		2,618.6	2,485.2	-1,273.0
VI. GROSS DOMESTIC PRODUCT		18,909.6	24,606.7	96,776.3

Note: When comparing allocations in different years, it is important to bear in mind the high rates of inflation during this period.

Source: Ministry of Finance, 1993

TABLE 2-7

STATE REVENUE BUDGET, MONGOLIA, 1992-93 (MILLION TUGRUGS)

(REVISED FIGURES)

	CENTRAL BUDGET		LOCAL BUDGET		TOTAL	
	1992 planned	1993 projected	1992 planned	1993 projected	1992 planned	1993 projected
I. Taxes	6,865.3	24,227.3	2,902.2	5,796.5	9,767.5	30,023.8
1. Income tax	2,789.7	9,137.5	2,308.0	2,004.9	5,097.7	11,142.4
a. State-owned company	2,789.7	9,137.5	1,941.7	1,825.1	4,731.4	10,962.6
b. Private company			366.3	179.8	3663	179.8
2. Special tax	1,221.6	3,490.1	470.2	2,453.9	1,691.8	5,944.0
a. alcohol	786.4	2,723.8	470.2	1,579.1	1,256.6	4,302.9
b. gold, silver	435.2			865.5	435.2	864.5
c. fuel		766.3				766.3
d. others				103		10.3
3. Sales Tax	1,064.0	5,074.7	0.7	477.2	1,064.7	5,551.9
a. imports	1,064.0	4,785.0	0.7		1,064.7	4,785.0
b. domestic goods		289.7		477.2		766.9
4. Customs Tax	1,790.0	6,525.0			1,790.0	6,525.0
5. Personal Income Tax			115.2	324.5	115.2	324.5
6. Transport Tax			8.1	536.0	8.1	536.0
II. Payment Revenue			211.4	564.0	211.4	564.0
a. minerals			131.8	235.9	131.8	235.9
b. forests			59.3	56.2	59.3	56.2
c. land				246.8		246.8
d. water			20.	25.1	20.3	25.1
III. Fee revenue			17.3	40.0	17.3	40.0
IV. Non-tax revenue	20.0	2,584.0	103.7	305.5	123.7	2,889.5
1. Others	20.0	35.2	103.7	133.9	123.7	169.1
2. Profit for share		2,548.8		171.6		2,720.4
V. Foreign Donation		4,890.0				4,890.06
TOTAL REVENUE	6,885.3	31,701.3	3,234.6	6,706.0	10,119.9	38,407.3
Budget expenditure	7,125.4	32,257.1	5,394.5	13,182.7	12,519.9	45,439.8
Budget deficit	-240.1	-555.8	-2,159.9	-6,476.7	-2,400.0	-7,032.5

SOURCE: Ministry of Finance, 1993

TABLE 2-8

STATE EXPENDITURE BUDGET, MONGOLIA, 1993 (MILLION TUGRUGS)

	CENTRAL	LOCAL	TOTAL
I. Material Sector	1,097.7	1,117.6	2,215.2
1. Stock-breeding		1,446.9	1,446.9
2. City transport	250.0		250.0
3. Water supply		65.6	65.6
4. Map, general scheme	38.8		38.8
5. Other organization	56.2	16.4	72.6
6. Prospecting	752.7		752.7
7. Town planning and public waste services		148.6	148.6
II. Non-Material Sector	15,064.7	12,017.8	27,082.5
1. Science	522.9	9.3	532.2
2. Education	805.4	6,112.1	6,917.4
3. Culture, art, radio, TV	863.5	303.4	1,166.9
4. Health	660.6	3,818.2	4,478.7
5. Sport & physical culture	26.7	156.9	183.6
6. Management & admin.	1,728.3	1,384.5	3,112.8
7. State security	3,638.3		3,638.3
8. Nature protection	226.0	121.4	347.4
9. Capital repair	187.0	112.0	299.0
10. Pension fund	3,699.4		3,699.4
11. Poverty fund	120.0		120.0
12. Social security	2,586.5		2,586.5
III. Coordination of Central and Local Budget	1,464.1		1,464.1
IV. Reserve	1,523.5	19.5	1,5423.0
V. Other Expenditures	9,574.1	27.9	9,602.0
1. Hard currency expend.	9,340.5		9,340.5
2. Others	233.6	27.9	264.5
VI. Investment	3,533.0		3,533.0
TOTAL	**32,257.1**	**13,182.7**	**45,439.8**

Source: Ministry of Finance, 1993

TABLE 2-9

INVESTMENT BUDGET, 1991-92

	1991	1992
1. Buildings		
Total Government (Tg million)	2,980.1	3,436.3
Education (Tg million)	5.4	12.5
Education as % of total	0.2	0.4
2. Equipment		
Total Government (Tg million)	606.6	887.9
Education (Tg million)	30.7	38.4
Education as % of total	5.1	4.3
Components of Educational Expenditure (%)		
Allocation to Aimags	61.8	58.9
Universities	14.5	14.5
Other organisations under MOSE	10.3	11.0
Postsecondary institutions	5.1	2.8
Vocational schools	8.3	2.4
Credit to various institutions	-	10.4
3. Total (Buildings + Equipment)		
Total Government (Tg million)	3,586.7	4,324.2
Education (Tg million)	36.1	50.9
Education as % of total	1.0	1.2

SOURCE: Ministry of Science & Education, 1993

TABLE 2-10

EMPLOYMENT BY SECTOR, 1970-90 (ANNUAL AVERAGE)

	1970		1980		1985		1990	
	'000	%	'000	%	'000	%	'000	%
Total Employment	387.4	100.0	511.2	100.0	561.6	100.0	647.5	100.0
Material sectors	312.3	80.6	388.3	75.9	413.2	73.6	463.3	71.6
Agriculture	181.9	47.0	202.7	39.7	187.0	33.3	189.4	29.3
Forestry	1.2	0.3	0.9	0.2	1.2	0.2	2.1	0.3
Industry	60.0	15.5	81.6	16.0	104.6	18.6	123.4	19.0
Transport	18.0	4.6	32.3	6.3	38.7	6.9	48.0	7.4
Construction	22.5	5.8	30.7	6.0	33.9	6.0	44.6	6.9
Others	28.7	7.4	40.1	7.8	47.8	8.5	55.8	8.6
Nonmaterial sectors	75.1	19.4	122.9	24.0	148.4	26.4	184.2	28.4
Education	30.4	7.8	49.2	9.6	58.7	10.5	75.5	11.7
Health	20.2	5.2	32.0	6.2	37.3	6.6	46.7	7.2
Science, research & development	3.7	1.0	9.0	1.8	10.3	1.8	14.1	2.2
Others	20.8	5.4	32.7	6.4	42.1	7.5	47.9	7.4

SOURCE: Asian Development Bank (1992): *Mongolia: A Centrally Planned Economy in Transition*, Oxford University Press, New York, p.203.

TABLE 2-11

UNEMPLOYMENT, BY TYPE, JUNE 1993

	Number	%
Total Unemployment	55,343	100.0
of whom:		
Men	25,400	45.9
Women	29,943	54.1
Higher educated	1,004	1.8
Professional/technically educated	4,021	7.3
Graduates of training and production centers/courses	13,677	24.7
Others	36,641	66.2

SOURCE: Ministry of Labor & Population Policy, 1993

TABLE 2-12

PROJECTED GROWTH OF POPULATION OF WORKING AGE, 1990-2005

	1990	1995	2000	2005
Total population ('000)	2,048.6	2,335.9	2,645.2	2,966.6
of which:				
Females aged 16-55 ('000)	481.7	566.9	658.7	768.3
Males aged 16-60 ('000)	520.2	609.5	703.8	813.7
Total people of working age	1,001.9	1,176.4	1,362.5	1,582.0

SOURCE: Ministry of Science & Education, and Ministry of Labor & Population Policy, 1993

TABLE 2-13

GOVERNMENT EXPENDITURE ON EDUCATION AS A PROPORTION OF THE TOTAL BUDGET AND OF GNP, SELECTED COUNTRIES, 1988-90 (%)

	% of Budget	% of GNP
Botswana	16.3	5.6
Brazil	17.7	3.9
Bulgaria	..	6.9
China	12.4	2.4
Czechoslovakia	8.0	5.3
Ghana	23.4	3.4
Hong Kong	15.9	2.7
Hungary	6.4	5.4
Israel	9.2	5.8
Japan	16.8	4.9
Jordan	13.0	6.9
Kenya	27.0	6.4
Lao PDR	6.6	1.1
Malaysia	16.9	6.9
Nepal	10.8	2.9
Nigeria	12.0	1.7
Poland	..	3.8
Singapore	11.5	3.4
Sri Lanka	8.1	2.7
Tanzania	11.4	5.8
Thailand	20.0	3.8
Yugoslavia	..	4.3

SOURCES: UNESCO (1991): *World Education Report 1991*, Paris; UNDP (1993): *Human Development Report 1993*, New York.

TABLE 2-14

GOVERNMENT EXPENDITURE ON EDUCATION BY LEVEL, 1990-92

	1990		1991		1992	
	Tg mill.	%	Tg mill.	%	Tg mill.	%
Kindergarten	148.4	17.9	332.8	21.6	568.9	21.4
Primary/middle/gen.sec.	439.7	52.9	837.9	54.3	1,467.2	55.2
Vocational institutions	123.2	14.8	64.5	4.1	179.7	6.8
Postsecondary colleges	43.4	5.2	133.5	8.7	224.1	8.4
Universities	76.3	9.2	173.5	11.2	217.6	8.1
TOTAL	831.0	100.0	1,542.2	100.0	2,657.6	100.0

SOURCE: Ministry of Science & Education, 1993

TABLE 2-15

GOVERNMENT EXPENDITURE ON EDUCATION BY FUNCTION, 1992 (%)

		Kinder-gartens	Primary/ middle/ gen. sec.	Vocational institutions	Postsecondary colleges	Univer-sities	Total
1.	Salaries	29.0	42.9	26.7	27.7	34.2	36.9
2.	Social security tax	4.0	5.8	3.4	3.6	3.7	4.9
3.	Administrative expenses*	28.7	34.5	30.4	25.2	15.1	30.6
4.	Travel (for teachers)	0.1	0.3	0.3	0.1	0.1	0.3
5.	Training	0.1	0.4	3.4	1.9	5.2	1.0
6.	Research			0.4	1.1	0.2	0.1
7.	Books, newspapers etc.	0.0	0.2	0.0	0.4	0.4	0.1
8.	Food (for boarders)	33.1	9.8	0.3	1.0		12.6
9.	Stipends			27.5	32.3	31.4	7.1
10.	Furniture & facilities	1.1	1.4	0.8	1.5	3.1	1.4
11.	Clothing & sheets	0.3	0.2	0.2	0.2	0.2	0.2
12.	Repairs	0.7	1.1	2.1	1.4	1.7	1.2
13.	Other	2.8	3.3	4.7	3.4	4.9	3.4
	TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

* office supplies, heating and other utilities

Source: Ministry of Science & Education, 1993

TABLE 2-16

AVERAGE MONTHLY WAGES, 1960-90 (TUGRUGS)

	1960	1970	1980	1990
Material sectors	352	440	517	569
Industry	316	447	570	619
Agriculture	233	360	382	450
Construction	414	445	538	595
Trade	338	385	425	486
Nonmaterial sectors	397	433	476	495
Personal services	375	411	441	493
Education & culture		372	430	471
481				
Science and R&D	500	513	550	607
Administration	597	547	605	653

SOURCE: Asian Development Bank (1992): *Mongolia: A Centrally Planned Economy in Transition*, Oxford University Press, New York, p.27.

TABLE 2-17

GOVERNMENT MONTHLY SALARY SCALE, DECEMBER 1992 (TUGRUGS)

	I 1-2 yrs	II 2-6 yrs	III 6-10 yrs	IV 10-15 yrs	V >15 yrs
A-1	2,300	2,500	2,700	2,900	3,200
A-2	2,700	2,900	3,100	3,300	3,500
A-3	2,900	3,200	3,500	3,800	4,200
A-4	3,300	3,600	3,900	4,100	4,400
A-5	3,500	3,800	4,100	4,400	4,700
B-1	3,800	4,200	4,500	4,800	5,100
B-2	4,000	4,300	4,600	4,900	5,300
B-3	4,200	4,500	4,800	5,100	5,500
B-4	4,500	4,800	5,100	5,400	5,800
B-5	4,900	5,200	5,500	5,800	6,100
B-6	5,100	5,400	5,700	6,000	6,300
B-7	5,400	5,800	6,100	6,400	6,700
B-8	5,600	5,900	6,300	6,600	6,900
B-9	6,300	6,600	7,000	7,300	7,600

Key for posts in education and allied sectors:

A-1: door-keeper; servant; kitchen helper; watchman
A-2: typist; duplicator; joiner; despatcher; cook; kindergarten nurse
A-3: driver; electrician; locksmith
A-4: store-keeper; cashier; assistant researcher
A-5: secretary; accountant; special education teacher of college; special middle education school teacher; industrial training center teacher; secondary school teacher; kindergarten manager
B-1: senior accountant; assistant researcher with higher education; kindergarten teacher with higher education;
B-2 secondary school teacher with higher education; kindergarten principal; researcher
B-3 higher education teacher of college, special middle education school, industrial training center; secondary school vice-director; institute assistant teacher
B-4 university assistant teacher; institute teacher; college teacher; secondary school principal; vice-director of industrial training center
B-5 university teacher; institute senior teacher; director of industrial training center; vice-director of special middle education school
B-6 university senior teacher; director of special middle education school and college for middle education; vice-director of college for higher education
B-7 vice-director of institute; director of college for higher education
B-8 university vice-rector; institute director
B-9 university rector

TABLE 2-18

PRICES OF SELECTED CONSUMER GOODS, STATE DEPARTMENT STORE, ULAANBAATAR, JULY 1993 (TUGRUGS)

boots (cheap range, leather)	2,100
boots (good quality, leather)	18,000
double bed with mattress	29,500
electric flat iron	1,400
hat (Mongolian traditional style)	1,500
pants (working style)	2,360
soccer ball	1,530
shoes (cheapest, leather)	1,690
shoes (white sports)	1,200
television	171,100
track suit	3,630
trestle sewing machine	21,850
umbrella	1,700

SOURCE: Personal Survey, 1993

Table 3-1

POSTSECONDARY EDUCATIONAL INSTITUTIONS:1992-93

UNIVERSITIES:	
Nat'l U.of Mongolia	Branch campus at Khovd
	Branch campus at Zavkhan
Technical U.	Branch at Darkhan
	School of Transportation
Military U.	
Agricultural U.	Bajanchandmany Agricultural College
	Darkhan Agricultural College
	Khovd Agricultural College
Medical U.	Medical College - East Gobi
	Medical College - Gobi Altai
Pedagogical U.	Foreign Language Institute
	School of Physical Education
	Ulaanbataar Teachers College
	Kindergarten Teachers College
	Music Teachers College
	Branch in Erdenet
University of Art	
OTHER COLLEGES:	
	Economics College
	College of Business and Commerce
	Darkhan Technical College
	Railway College
	Fine Arts College
	College of Culture
	Music College
	Arkhangai Teachers College
	Dornod Teachers College
	Institute of Technology

SPECIALIZED PROFESSIONL SCHOOLS	
	School for Teachers and Cultural Workers
	Ulzyit Kindergarden Teachers School
	Ulaanbataar Construction Training Center
	Darkhan Construction Training Center
	Darkhan Medical School
	Flight School
	Altanbulag Agricultural Technical School
	Dornod Agri./Indust. Training Center
	Food Industrial Training Center
	Light Industry Training Center
VOCATIONAL SCHOOLS	
	26 Industrial Training Centers

PRIVATE EDUCATIONAL INSTITUTIONS
Mongol Business School (business and economics)
University of Mongolian Knowledge (human/social sciences)
School of National Physical Culture (sports)
School of Fine Arts (fine arts)
"Otgontenger" For. Lang. College (English, Russian, Chinese)
"Manba Datsan" Medical College (traditional medicine)
"Chadvar" Technical Vocational School (handicraft art)
College of Law (law)
Agricultural Industrial Training Center (agri. mechanics)
"Orkhan" Foreign Lang. College (English, Japanese, Chinese)
"Onol" Foreign Language College (English, Russian)
College of East World Philosophy (philosophy)
"Seruuleg" College (management, tourism, English)
Management Sch. of Small Business (small bus./indust. tech.)
"Mandakh" College of Accounting (accounting)
"Ikh Shavy" College (national struggle)
"Tsagaan Lavai" Teachers College (primary education)
Natural Science College (agricultural technology)
Russian and English Language College (Russian, English)
Jamyangaraw Institute of Eastern Literature (literature)
"Khar Khorum" University (national art)

SOURCE: Ministry of Science and Education, 1993.

Table 3-2

MONTHLY SALARY SCALES FOR EMPLOYEES OF PUBLIC ORGANIZATIONS AND INSTITUTIONS
(Effective 1992)

Yrs./Service	1-2	3-6	7-10	11-15	16-20
Skill Levels	I	II	III	IV	V
A-1	2300	2500	2700	2900	3200
A-2	2700	2900	3100	3300	3500
A-3	2900	3200	3500	3800	4200
A-4	3300	3600	3900	4100	4400
A-5	3500	3800	4100	4400	4700
B-1	3800	4200	4500	4800	5100
B-2	4000	4300	4600	4900	5300
B-3	4200	4500	4800	5100	5500
B-4	4500	4800	5100	5400	5800
B-5	4900	5200	5500	5800	6100
B-6	5100	5400	5700	6000	6300
B-7	5400	5800	6100	6400	6700
B-8	5600	5900	6300	6600	6900
B-9	6300	6600	7000	7300	7600

SOURCE: Ministry of Finance, 1993.

TABLE 3-3

NUMBER OF PRIMARY AND SECONDARY SCHOOL EMPLOYEES
1992-93

ADMINISTRATORS AND TEACHERS (Total)	21,762
Principals	617
Vice Principals	1,019
Teachers	19,441
Teacher/Psychologists	53
Chairs of Departments	28
Department Specialists	72
Heads,Research/Teaching Methods Centers	22
Instructors/Research Staff in Centers	116
State Inspectors	22
Assistants	372
OTHER EMPLOYEES (Total)	12,437
Accountants	572
Physicians	251
Librarians	462
Managers	978
Secretaries	388
Office Cleaners	3,835
Janitors	2,563
Managers of establishments	14
Others - cooks, locksmiths, et al.	3,374
TOTAL	34,199

SOURCE: Annual Report, Ministry of Science and Education, 1993

Table 3-4

NUMBER OF PUBLIC POSTSECONDARY SCHOOL EMPLOYEES BY GENDER
1992-93

	Female	Male	Total
ADMINISTRATORS/FACULTY (Total)	1,607	2,102	3,709
Professors/Instructors	1,532	1,660	3,192
Dept. Heads (universities)	32	180	212
Dept. Heads (colleges)	12	42	54
Deans	-	30	30
Directors of Studies	17	28	45
Deputy Directors of Studies	8	79	87
Rectors/Directors	6	79	85
OTHER EMPLOYEES (Total)	2,974	1,574	4,548
Research officials	28	41	69
Assistant research officials	20	22	42
Accountants	156	31	187
Maintenance workers	170	73	243
Librarians	157	11	168
Physicians	45	11	56
Laboratory assistants	396	135	531
Secretaries	106	4	110
Janitors	331	336	667
Office cleaners	1,006	21	1,027
Others	559	890	1,449
TOTAL	4,581	3,676	8,257

SOURCE: Annual Report, Ministry of Science and Education, 1993.

TABLE 4-1

MONGOLIANS STUDYING ABROAD, 1985 AND 1992 SCHOOL YEARS

(in 1985, virtually all went to socialist countries; in 1992, increasing numbers were studying in other Asian, European and North American countries)

	1985	1992
Total enrolled		
Secondary education level technical vocational students	4482	194
Post-secondary technical/professional students	1366	587
Universities	6110	2895
New entrants		
Secondary education level technical vocational students	1882	0
Post-secondary technical/professional students	354	6
Universities	1194	41

SOURCE: Ministry of Science and Education, July, 1993.

TABLE 4-2

DATA ON KINDERGARTEN, PRIMARY, MIDDLE AND SECONDARY EDUCATION, 1985, 1990, 1991 AND 1992 SCHOOL YEARS

Year Level	1985	1990	1991	1992
Kindergarten: Number of	680	909	883	806
Children enrolled in kindergarten	62470	97212	95715	85671
-State financed	58663	88395	90072	81817
-Financed by enterprises	3807	8817	5643	3874
Number of kindergartens	680	909	883	806
-State financed	639	779	808	771
-Financed by enterprises	41	130	75	35
Staff members of kindergarten	8529	15358	15793	14408
Principals	584	801	818	785
Teachers	2205	3747	4088	3732
-with higher education training	22	62	98	60
-with specialized middle education	1919	2959	3459	3074
-with complete middle education	252	688	523	58
-with incomplete middle education	12	38	8	-
Total expenditure (in thousands of tugreks)	101224.8	166390.1	333001.9	NA
Primary and Secondary schools: total schools	590	634	643	679
-Number of 10-year schools	145	267	337	398
-Number of 8-year schools	341	271	213	185
-Number of 4-year schools	104	96	93	96
Number of students (in thousands)	415.7	440.9	411.7	369.1
In grades 1-3	153.1	166.2	154.6	138.4
In grades 4-8	226.5	233	219.5	198
In grades 9-10	36.1	41.7	37.6	32.7
Enrollment in grade 1 (in thousands)	51.9	57.1	49.2	51.9
Enrollment of 7-year old children	7.1	17.7	10.6	8.8
Enrollment in 9th grade	19.2	21.6	18.3	17.2
Graduation, 8th grade (in thousands)	39	45.2	41.9	38.1
Graduation, 10th grade	15.6	19.1	19.1	18.7
Number of children who go to a special school or class	2498	3540	2856	NA
Number of workers schools	323	210	NA	NA
-Number of students (in thousands)	20.8	10.4	NA	2.8
-Graduation (in thousands)	8.9	5.3	1.3	NA
Staff members of primary and secondary schools	33086	39707	38789	34199
-Principals	532	563	566	617
-Vice Principals	1074	1137	1226	1019
-Teachers	17091	20629	20481	19441
a) Primary class teachers	5064	5917	6230	6165
b) Middle and upper class teachers	12027	14712	14251	13276
Average number of shifts per school	1.69	1.52	NA	NA
Number of children who live in school dormitories	74967	64362	52158	35368
Total expenditure on secondary schools (not including dormitory expense) in tugreks	273183.9	363656.9	839926.6 Including dormitory	
Total expenditure on dormitories	107131.8	92030.5		
Repeaters in secondary schools	1973	3016		
-Percentage of all secondary students	.47	.68		
Leavers of secondary schools (drop-outs)	6333	3292		
-Percentage of secondary students	1.52	.75		

SOURCE: Compiled by the team from data supplied by the Ministry of Science and Education

TABLE 4-3

ENROLLMENT IN AIMAGS, 1992-93 (BY GRADE AND GENDER), JANUARY, 1993

Aimag	Grade	1	2	3	4	5	6	7	8	9	10	TOTAL
Arkhangai	Total	1999	1860	1895	618	3071	1469	1434	1344	557	507	14754
	Female	986	980	981	337	1669	845	901	811	379	338	8227
Bayan-Ulgyi	Total	1893	1536	1436	333	2555	1326	1320	1156	498	553	12606
	Female	943	731	743	167	1335	766	726	637	301	333	6682
Bayankhongor	Total	1790	1496	1686	731	2541	1363	1306	1135	469	473	12990
	Female	892	712	906	394	1358	754	739	644	349	322	7070
Bulgan	Total	1202	1066	1235	401	1988	937	1025	876	374	368	9472
	Female	614	544	629	219	1086	564	613	502	249	239	5259
Gobi-Altai	Total	1511	1239	1454	495	2406	1274	1197	1120	508	419	11623
	Female	737	653	733	261	1335	743	743	673	355	291	6524
East-Gobi	Total	1267	1074	1140	173	1750	815	860	728	334	331	8472
	Female	663	507	606	101	899	450	481	439	229	237	4612
Dornod	Total	2199	1598	2019	454	3349	1579	1632	1331	612	740	15513
	Female	1045	712	909	256	1243	773	757	669	402	360	7126
Middle-Gobi	Total	1302	1103	1124	90	1798	804	740	667	296	231	8155
	Female	681	580	586	52	993	513	478	416	216	162	4677
Zavkhan	Total	2099	1815	1958	804	3092	1794	1628	1511	639	628	15968
	Female	892	831	894	391	1459	959	848	788	430	396	7888
Uvurkhangai	Total	2178	1578	1997	608	2777	1363	1451	1303	579	461	14295
	Female	1044	791	1013	351	1538	939	894	831	385	305	8091
South-Gobi	Total	1186	837	1037	204	1522	631	699	519	237	224	7096
	Female	565	405	564	106	843	380	445	364	163	159	3994
Sukhbaatar	Total	1262	814	1220	355	2079	998	1015	885	385	382	9395
	Female	594	446	626	191	1115	573	590	538	259	263	5195
Selenge	Total	2282	1943	2356	973	3197	1856	1868	1589	767	740	17571
	Female	1158	983	1266	485	1679	1024	1071	931	527	509	9633
Central (Tov)	Total	2541	2015	2491	592	3818	2011	1962	1649	813	703	18595
	Female	1293	1008	1347	316	2027	1149	1194	1032	599	500	10465
Uvs	Total	2084	1711	1672	379	3285	1682	1523	1377	746	703	15162
	Female	1053	855	869	198	1886	988	933	828	487	458	8555
Khovd	Total	1843	1524	1691	417	2785	1347	1303	1130	698	618	13356
	Female	930	745	892	236	1516	796	746	676	460	403	7400
Khuvsgul	Total	2388	1852	2087	1990	2156	1680	1169	1605	797	823	16547
	Female	1356	949	1100	1021	1243	954	718	1004	512	550	9407
Khentyi	Total	1809	1567	1706	319	2818	1291	1271	1146	509	460	12896
	Female	922	800	850	179	1534	743	750	705	342	310	7135
Darkhan	Total	1951	1602	2104	518	3235	1821	1704	1463	716	733	15847
	Female	963	814	1070	259	1675	946	992	827	475	495	8516
Ulaanbaatar	Total	13007	11957	12858	3494	20280	10728	11391	10175	5596	5327	104813
	Female	6529	6041	6390	1807	10202	5491	5942	5479	3653	3384	54918
Erdenet	Total	1403	1257	1271	458	1851	930	1010	848	329	313	9670
	Female	728	632	655	241	945	511	547	481	218	214	5172
Choir	Total	327	151	307	55	454	227	254	200	124	83	2182
	Female	168	152	163	37	250	122	148	115	78	59	1292
MOSE Schools	Total	209	215	148	264	230	205	249	268	217	109	2114
	Female	121	124	84	148	142	126	163	152	119	73	1252
TOTAL	All	49732	41810	46892	14725	73037	38131	38011	34025	16800	15929	369092
	Female	24877	20995	23876	7753	37972	21109	21419	19542	11187	10360	199090

SOURCE: Compiled from Ministry of Science and Education statistics, July, 1993.

TABLE 4-4

DROPOUTS BY AIMAG (PROVINCE), 1992 CALENDAR YEAR

Aimag	Enrollment in January, 1992	Enrollment in December, 1992	Number of dropouts	Percentage of dropouts	Percentage of all school-age children in aimag
Arkhangai	17812	14754	3058	17.2	6.3
Bayan-Ulgyi	15819	12606	3213	20.3	6.6
Bayankhongor	15557	12990	2567	16.5	5.3
Bulgan	11293	9472	1821	16.1	3.8
Gobi-Altai	13543	11623	1920	14.2	4.0
East-Gobi	9151	8472	679	7.4	1.4
Dornod	17275	15513	1762	10.2	3.6
Middle-Gobi	9654	8155	1499	15.5	3.1
Zavkhan	19346	15968	3378	17.5	7.0
Uvurkhangai	18120	14295	3825	21.1	7.9
South-Gobi	8465	7096	1369	16.2	2.8
Sukhbaatar	11357	9395	1962	17.3	4.1
Selenge	19609	17571	2038	10.4	4.2
Central (Tov)	21402	18595	2807	13.1	5.8
Uvs	18464	15162	3302	17.9	6.8
Khovd	17079	13356	3723	21.8	7.7
Khuvsgul	20432	16547	3885	19.0	8.0
Khentyi	14649	12896	1753	12.0	3.6
Darkhan	17525	15847	1678	9.6	3.5
Ulaanbaatar	105484	104813	671	0.6	1.4
Erdenet	10865	9760	1195	11	2.5
Choir	2453	2182	271	11	0.6
MOSE Schools	2149	2114	35	1.6	.1
TOTAL	417503	369092	48411	11.6	100.0

SOURCE: Compiled from Ministry of Science and Education statistics, July, 1993. Note that these figures represent numbers of children in school in early January, 1992, as compared with late December, 1992; thus figures represent those in school in the middle of one academic year as compared to the next academic year.

TABLE 4-5

CUMULATIVE PERCENTAGE OF DROPOUTS BY AGE SINCE 1988 SCHOOL YEAR

School year (data as of what date)	Age 8-11 (children once in school)	Age 8-13 (children once in school)	Age 8-15 (children once in school)	Cumulative dropouts as % of all children age 8-15*
1988-1989 (as of September 25, 1988)	2.5%	3.0%	3.8%	3.4%
1989-1990 (as of September 25, 1989)	2.5%	3.1%	4.0%	3.6%
1990-1991 (as of September 25, 1990)	5.9%	6.6%	8.0%	7.1%
1991-1992 (as of September 25, 1991)	8.9%	10.4%	12.9%	11.6%
1992-1993 (as of September 25, 1992)	15.8%	16.1%	18.6%	16.8%
1992 (as of December 25, 1992)	21.8%	20.2%	21.8%	20.0%

*Cumulative dropouts as a percentage of all children age 8-15 is smaller than the cumulative percentage of children once in school who have dropped out because of the small (but somewhat increasing) percentage of children who have never been to school. Dropouts of younger children accelerated in the fall of 1992. From September 1 through December 25, six percent of children aged 8-11 dropped out. These percentages are extrapolated from enrollment figures each year as of September 25 and assume that diminishing enrollment indicates dropout. In earlier years, however, the actual dropout rate may be slightly less because the number of eight-year olds in rural areas not coming to first grade at all is increasing. Thus, a small portion of the dropout percentages above may be early primary children who have never attended primary school at all.

SOURCE: Compiled from Ministry of Science and Education statistics, July, 1993.

TABLE 4-6

REASONS FOR DROPOUTS IN 1992-1993 ACADEMIC YEAR IN UVURKHANGAI AIMAG

Reasons |Grade	1	2	3	4	5	6	7	8	9	1	Total
Change in life style (including move from area)				24		12	19	16	4		75
Decrease of school quality because of decrease in national budget				16	19		23	32			90
No funds for transportion								8		10	18
No way to supply food for boarding facilities					28	24	16		16	17	101
No interest in continuing to study	19	16	20	48	32	26	73	14			248
Impossibility to study because of low living standard	13		14	7	17	14	8	39			112
Interested in cattle breeding	24	23	53	8	20	21	9			12	170
Health reasons		4	2			3					9
Not interested in school curriculum											0
Low quality of teachers											0
	56	43	89	103	116	100	148	109	20	39	823

SOURCE: D. Dashdorj, Head of Department of Social Policy, Uvurkhangai Aimag, July, 1993.

TABLE 4-7

PRIMARY, MIDDLE AND SECONDARY TEACHERS BY LEVEL, QUALIFICATION AND BY SEX, 1992/3 SCHOOL YEAR

	Total	Number of females	Percentage of females
All teachers, grades 1 through 10	19441	14115	72.6
Teachers with higher education certification (graduates of universities)	11064	7581	68.5
With teachers' college certification (two years post-secondary)	113	72	63.7
With specialized post-secondary education in areas other than pedagogic	6511	5347	82.1
With secondary education	1753	913	52.0
Teachers of grades 1-3	6165	5590	90.6
Grades 4-10	13276	8525	64.2

SOURCE: Compiled from data supplied by the Ministry of Science and Education, July, 1993.

TABLE 4-8

1992-1993 ACADEMIC YEAR CURRICULUM: GENERAL EDUCATION SCHOOL

Number of hours a week

	New curriculum					*	Old curriculum					
Names of Subjects	I	II	V	IX	III	III	IV	VI	VII	VIII	X	Tot
1. Mongolian language	9	9	3	1	10	9	9	2	3	2		48
2. Mongolian script (new sub.)			2					2	2			6
3. Literature			2	2				2	2	3	3	14
4. Foreign language			5	3				5	3	4	3	23
5. Mathematics	4	4	5	3	6	5	5	5	5	5	5	47
6. Informatics (new subject)				1							2	3
7. Natural science (new subj.)			3	3								6
8. Physics/astronomy								2	2	3	5	12
9. Chemistry									2	2	3	7
10. Biology								2	2	2	2	8
11. Geography								2	2	2		6
12. Environmental Studies (new)	2	2			1	1	1					6
13. History and Social Studies (new combined course)			2	1				2	2	2	1	10
14. Technical drawing									1	1		2
15. Creative painting	2	2	1		1	1	1	1				8
16. Music	2	2	1		1	1	1	1				8
17. Practical arts and home economics (new subject)	2	2	2		2	2	2	2	2	2	2	18
18. Physical education and health	2	2	3	2	2	2	2	2	2	2	2	21
19. Moral education (new subject)	1	1	1		1	1						4
Hours attended by all students	24	24	30	16	24	22	21	30	30	30	28	257
Elective studies	2	2	2	4	2	2	2	2	2	2	2	22
Diversified vocational studies				14								14

*Transition grade

SOURCE: Annex 4 of Ministerial Order 146 of April 11, 1991.

TABLE 4-9

1993-1994 ACADEMIC YEAR CURRICULUM: GENERAL EDUCATION SCHOOL

	Number of hours a week										
	New curriculum							Old curriculum			
Names of Subjects	I	II	III	V	VI	IX	X	IV	VII	VIII	Total
1. Mongolian language	9	9	9	5	4	1	1	9	4	2	53
2. Literature				2	2	3	3		2	3	15
3. Foreign language				5	5	3	3		3	3	22
4. Mathematics	5	5	5	5	5	5	5	5	5	5	50
5. Informatics						1	1				2
6. Natural science				2	2			2			6
7. Physics/astronomy						4	5		2	3	14
8. Chemistry						3	3		2	2	10
9. Biology						1	2		2	2	7
10. Geography					2	2			2	2	8
11. Local environment study	1	2	2								5
12. History and Social Studies				2	2	1	2	2	2	2	13
13. Fine art	2	2	2	1	1			1			9
15. Music	2	2	2	1	1			1			9
16. Practical arts	2	2	2	2	2	2	2	2	3	3	22
17. Physical education and health	2	2	2	2	2	2	2	2	2	2	20
Compulsory subjects, total hours	23	24	24	27	28	28	29	24	29	29	265
Elective studies	1	1	1	2	2	4	3	2	3	3	22
18. Morals and main principles	1	1	1	1				1			5
19. Home economics (primarily girls)				2	2	4	4		2	2	16

SOURCE: Ministry of Science and Education Order of May 11, 1993 (modifying Ministerial Order 146 of April 11, 1991).

TABLE 4-10

1995-1996 ACADEMIC YEAR CURRICULUM: GENERAL EDUCATION SCHOOL (AS ORIGINALLY PLANNED)

Number of hours a week

Names of Subjects	I	II	III	IV	V	VI	VII	VIII	IX	X	Tot
1. Mongolian language	9	9	9	9	5	3	1	1	1	1	48
2. Mongolian script (new subject)						2	2				4
3. Literature					2	2	2	3	2	2	13
4. Foreign language					5	5	3	3	3	3	22
5. Mathematics	4	4	4	4	5	5	5	5	3	3	42
6. Informatics (new subject)							1	1			2
7. Natural science (new subject)					3	3			3	3	12
8. Physics/astronomy							2	3			5
9. Chemistry							2	2			4
10. Biology							2	2			4
11. Geography							2	2			4
12. Environmental Studies (new)	2	2	2	2							8
13. History and Social Studies (new combined course)					2	2	2	2	2	1	11
14. Technical drawing											
15. Creative painting	2	2	2	2	1	1					10
16. Practical arts and home economics (new subject)	2	2	2	2	2	2	3	3			18
17. Music	2	2	2	2	1	1					10
18. Physical education and health (new subject)	2	2	2	2	3	3	3	3	2	2	24
19. Moral education and human beings (new subject)	1	1	1	1	1	1	1	1			8
Hours attended by all students	24	24	24	24	30	30	31	31	16	15	249
Elective studies	2	2	2	2	2	2	2	2	4	4	24
Diversified vocational studies									15	15	30

SOURCE: Annex 7 of Ministerial Order 146 of 11 April, 1991.

TABLE 4-11

ADULT WOMEN WHO FINISHED VARIOUS LEVELS OF EDUCATION IN SELECTED PROVINCES

Province (Total adult women)	Settled or nomadic	No.with higher educ degree (% of women in province)	Some higher educ. (% of women in province)	Special-ized secondary (% of women in province)	Ten-year second. (% of women in province)	Eight-year second. (% of women in province)	Four-year primary (% of women in province)	Less than four yrs. but literate (% of women in province)	Illiterate (% of women in province)	Total
Bayankhongor (26,955)	Settled	326 (1.2%)	52 (.2%)	685 (2.5%)	1131 (4.1%)	2339 (8.6%)	1733 (6.4%)	1083 (4.0%)	318 (1.1%)	7,667
	Nomadic	197 (0.7%)	21 (.07%)	1010 (3.7%)	1566 (5.8%)	4232 (15.6%)	7014 (25.9%)	4044 (15.0%)	1204 (4.5%)	19,288
Gobi-Altai (24,200)	Settled	283 (1.2%)	14 (.06%)	873 (3.6%)	1223 (5.1%)	2141 (8.8%)	2050 (8.3%)	935 (3.9%)	374 (1.5%)	7,893
	Nomadic	210 (.09%)	23 (0.1%)	1017 (4.2%)	1170 (4.8%)	3057 (12.6%)	6427 (26.6%)	3342 (13.8%)	1061 (4.4%)	16,307
East-Gobi (20,046)	Settled	577 (2.9%)	38 (.19%)	1456 (7.3%)	2146 (10.7%)	3319 (16.6%)	3542 (17.7%)	1161 (5.8%)	402 (2.05)	12,641
	Nomadic	132 (.66%)	8 (.03%)	479 (2.9%)	501 (2.5%)	1417 (7.1%)	2779 (13.9%)	1481 (7.4%)	608 (3.0%)	7,405
South-Gobi (15,002)	Settled	347 (2.3%)	23 (.15%)	46 (4.3%)	763 (5.1%)	1461 (9.8%)	1398 (9.3%)	667 (4.4%)	211 (1.4%)	5,516
	Nomadic	199 (1.3%)	15 (.09%)	618 (4.1%)	801 (5.3%)	1997 (13.3%)	3691 (24.6%)	1825 (12.2%)	340 (2.3%)	9,486
Middle Gobi (17,603)	Settled	233 (1.3%)	9 (.05%)	583 (3.3%)	940 (5.3%)	1989 (11.3%)	1244 (7.1%)	689 (3.9%)	164 (.9%)	5,851
	Nomadic	247 (1.4%)	18 (.10%)	799 (4.5%)	840 (4.8%)	2277 12.9%)	4524 (25.7%)	2048 (11.6%)	999 (5.7%)	11,752
Uvurkhangai (35,991)	Settled	471 (1.3%)	27 (.08%)	1154 (3.2%)	1503 (4.2%)	2565 (7.1%)	3146 (8.7%)	1676 (4.7%)	645 (1.8%)	11,187
	Nomadic	277 (.7%)	21 (.06%)	1119 (3.1%)	1794 (5.0%)	4350 (12.1%)	9886 (27.5%)	5525 (15.4%)	1832 (5.1%)	24,804
Ulaanbaatar (201,856)	Settled	19,143 (9.5%)	3,742 (1.9%)	22,539 (11.2%)	42,726 (21.2%)	44,565 (22.%)	41,190 (20.4%)	25,041 (12.4%)	2,910 (1.4%)	201,856

SOURCE: Adapted from Non-Formal Education to Meet Basic Learning Needs, Ministry of Science and Education, UNESCO and DANIDA, November 15, 1992 (report of a five-month consultant needs assessment mission). Data are for 1992 and for women 15 years old and above. Percentages will not add up to 100% because of rounding.

TABLE 4-12

CHILDREN ENROLLED IN SCHOOL AS PERCENTAGE OF TOTAL POPULATION IN EACH AIMAG (JANUARY, 1993)

Aimag	Total school (1-10) enrollment in December, 1992	Total population in January, 1993*	Percentage of total population in school
Arkhangai	14754	93628	15.8
Bayan-Ulgyi	12606	92989	13.6
Bayankhongor	12990	83675	15.5
Bulgan	9472	62456	15.1
Gobi-Altai	11623	71703	16.2
East-Gobi	8472	49861	17.0
Dornod	15513	80663	19.2
Middle-Gobi	8155	55705	14.6
Zavkhan	15968	97408	16.4
Uvurkhangai	14295	106652	13.4
South-Gobi	7096	46993	15.1
Sukhbaatar	9395	56066	16.7
Selenge	17571	93725	18.7
Central (Tov)	18595	112850	16.5
Uvs	15162	93504	16.2
Khovd	13356	84807	15.7
Khuvsgul	16547	112792	14.7
Khentyi	12896	77631	16.6
Darkhan	15847	86471	18.3
Ulaanbaatar	104813	575000	18.2
Erdenet	9760	53025	18.4
Choir	2182	11966	18.2
TOTAL	369092	2199570	16.8

*Projection based on 1989 census plus population growth.

SOURCE: Compiled from Ministry of Science and Education statistics, July, 1993.

TABLE 5-1

PUBLIC HIGHER EDUCATION INSTITUTIONS, 1992-93

	Teachers	Students
National University of Mongolia	289	2430
Institute of Pedagogy - Khovd	38	413
Economic College - Zavkhan *	15	344 **
Technical University	398	3083
Transportation Institute		
Branch Campus - Darkhan		
Pedagogical University	153	2722
Foreign Language Institute	72	
Institute of Physical Education		
Kindergarten Teachers College	26	369
		357 **
Music Teachers College	26	122
		69 **
Teachers College	44	366
		251 **
Foreign Language Institute - Erdenet	5	
Agricultural University	95	976
Agricultural College - Bayanchandman	19	39
		309 **
Agricultural College - Darkhan	22	129
		203 **
Agricultural College - Khovd *	17	215 **
Medical University	244	2666
Institute for Improvement of Medical Professionals	31	330
Medical College - East Gobi	22	70
		383 **
Medical College - Gobi Altai *	26	458 **
Art University	93	358
Institute of Technology	9	41
Military University		
College of Commerce and Business	40	299
		257 **
Economic College	37	476
Fine Arts College	29	27
		221 **
Culture College	31	26
		289 **
Music College *	123	305 **
Teachers College - Arkhangai	26	296
		172 **
Teachers College - Dornod	13	166
		97 **
Railways College *	45	588 **
Technical College - Darkhan *	26	435 **

* College includes only specialized secondary education;
** Students enrolled in specialized secondary education.
SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-2

PRIVATE HIGHER SCHOOLS/INSTITUTES

School/Institute	Specialty	Date Authorized
1. Mongol Business Institute	Business management, economists	April 3, 1991
2. University of Mongolian Knowledge	Mongolian studies	May 1, 1991
3. National School of of Sports	Free-style wrestling, sambo, judo, archery	April 1, 1991
4. "Otgon Tenger" Foreign Language Institute	Teachers, translators	November 13, 1991
5. "Mamba Datsun" Medical School	Traditional medicine	October 2, 1991
6. "Shikhikhutug" Law School	Jurists	October 16, 1991
7. "Orkhon" Foreign Language Institute	Teachers, translators	March 24, 1992
8. "Onol" Foreign Language Institute	Translators	March 24, 1992
9. Institute of Eastern Philosophy	Teachers, researchers in philosophy	March 24, 1992
10. "Tsog" Foreign Language Institute	Translators, managers	May 5, 1992
11. "Mandakh" Institute of Accounting	Accounting, finance	May 5, 1992
12. "Ikh Shavi" School	Teachers, trainers	May 5, 1992
13. "Tsagaan Lavai" Institute	Primary school teachers	May 16, 1992
14. Nature Study School	Biology	June 30, 1992
15. European Language Institute	Teachers, translators	January 1, 1993
16. Mongolian Script Institute	Mongol-English, Mongol-French teachers	February 28, 1993
17. "Gurvan Erdene" Institute	Mongolian language, literature, and arts teachers	May 11,1993
18. "Tsagaan Shuvuut" Company School	Teachers, translators	May 25, 1993

SOURCE: Postsecondary Education Department, Ministry of Science and Education, Mongolia.

TABLE 5-3

PROPOSED HIGHER EDUCATION DEGREE/CERTIFICATE STRUCTURE

Field of Study	Years of Study 1	2	3	4	5	6	7	8	9	10	10+
Education			C*	B		M			PhD		DSc
Fine arts, music				C	B		M			PhD	
Law				B		M			PhD		DSc
Social sciences, economics				B		M			PhD		DSc
Natural sciences, mathematics				B		M			PhD		DSc
Engineering, technology			C		B		M			PhD	DSc
Medical sciences:											
Medicine						P		MD			DSc
Dentistry					P		MD				DSc
Pharmacy					B		M				DSc
Veterinary medicine					P		MD				DSc
Agriculture, forestry				B		M			PhD		DSc

* C = postsecondary specialization certificate
B = bachelor's degree
P = professional qualification
M = master's degree
MD = doctor of medicine
PhD = doctor of philosophy
DSc = doctor of science

SOURCE: Postsecondary Education Department, Ministry of Science and Education, Mongolia.

TABLE 5-4

TEACHERS AND STUDENTS IN PRIVATE HIGHER EDUCATION, 1992-93

Institution	Teachers	Students	% Female
Mongol Business Institute		46	50.0
Univ. Mongolian Knowledge	7	109	77.1
National School of Sports	3	147	24.5
Otgon Tenger Foreign Lang	12	279	87.1
Mamba Datsan Medical	4	12	66.7
Shikhikhutug Law School	2	32	46.9
Orkhon Foreign Lang Inst	7	276	72.8
Onol Foreign Lang Inst	5	138	74.6
Inst Eastern Philosophy	11	47	76.6
Tsog Inst of Seruuleg Co	8	458	70.7
Mandakh Accounting Inst	8	64	76.6
Ikh Shavi Sports School	10	150	5.3
Tsaagan Lavai Tchrs Inst	5	184	39.1

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-5

HIGHER EDUCATION STUDENT ENROLLMENT AND GRADUATION DATA, 1990-1993

Institution	1990 Total	1991 Total	1991 Total % Fem	1992 Grads Total	1992 Grads % Fem	1992 Total	1992 Total % Fem	1993 Grads Total	1993 Grads % Fem
National Univ	1896	2126	60.4	393	59.5	2430	60.1	363	63.6
Ped Inst-Khovd	443	470	58.9	84	63.1	413	67.8	88	51.1
Technical Univ	3089	3053	39.3	551	39.7	3083	41.8	607	47.9
Pedagogical U *	2654	2650	81.1	584	71.2	2722	68.0	529	72.8
Medical Univ	3037	3075	73.3	432	81.9	2666	79.1	443	82.6
Agricult Univ	1910	1515	40.9	399	47.4	976	49.9	345	40.6
Univ of Technol						41	19.5		
Art University	255	321	48.9	44	31.8	358	51.7	58	58.6
Economic Coll		304				476	50.8		
Coll Comm & Bus		188				299	68.5		

* Data for students at the Pedagogical University include those enrolled in the Institute for Foreign Languages.

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-6

HIGHER EDUCATION TEACHERS BY GENDER, YEARS OF EXPERIENCE, AND AGE

Institution	1990 Tchrs	1991 Tchrs	1991 % Fem	1992 Tchrs	% 21+ Yr Ex	% Age 50+
National Univ.	271	279	33.3	289	42.2	28.7
Ped. Inst-Khovd	50	49	18.4	38	26.3	7.9
Technical Univ.	354	304	23.4	398	32.4	14.5
Pedagogical Univ.	164	165	27.9	153	32.7	17.0
Inst Frgn Lang.	94	74	82.4	72	23.6	19.4
Medical Univ.	266	272	45.6	275	24.7	12.0
Agricult. Univ.	177	138	20.3	95	32.6	25.3
Univ. of Technol.				9	44.4	22.2
Art University	51	60	51.7	93	29.0	20.4
Economic College		34	50.0	37	8.1	5.4
Coll Commerce&Bus		51	76.5	40	20.0	12.5

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-7

RANK AND ACADEMIC DEGREE DISTRIBUTION OF TEACHERS IN UNIVERSITIES
(1991-92 ACADEMIC YEAR)

Institution	Total Tchrs 1991	Rank		Academic Degree	
		% Prof.	% Assoc. Prof.	% D.Sci.	%Ph.D.
National Univ.	279	4.3	13.6	3.6	31.9
Ped. Inst-Khovd	49	2.0	2.0		10.2
Technical Univ.	304		9.5	1.0	21.4
Pedagogical Univ.	165	1.2	7.9	1.2	17.6
Inst Frgn Lang.	74		2.7		10.8
Medical Univ.	272	.7	4.4	.7	23.9
Agricult. Univ.	138	2.9	7.2	2.2	29.7
Art University	60	5.0	1.7		6.7

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-8

DISTRIBUTION OF EMPLOYEES IN HIGHER EDUCATION
(1991-1992)

Institution	Total Staff	% Tchrs	% Admins, Support Staff	% Other Staff
National Univ.	753	37.0	3.9	59.1
Ped. Inst-Khovd	143	34.3	4.2	61.5
Technical Univ.	602	50.5	5.8	43.7
Pedagogical Univ.	386	42.7	2.8	54.4
Inst Frgn Lang.	158	46.8	4.4	48.7
Medical Univ.	498	54.6	1.6	43.8
Agricult. Univ.	329	41.9	4.0	54.1
Art University	83	72.2	8.4	19.3

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-9

BUDGETS FOR HIGHER EDUCATION INSTITUTIONS, 1990
(THOUSANDS OF TUGRUGS)

	National Univ	Pedagog Inst - Khovd	Technic Univ	Pedagog Univ	Inst Frg Language	Agricult Univ	Medical Univ
Salary	6176.6	1100.2	5832.3	3284.8	1521.5	3697.9	4544.0
Social Security Tax	484.8	95.8	565.5	279.1	132.3	329.7	508.5
Stationery, Office Supply	2374.4	790.0	1712.2	1278.1	455.0	2071.9	1420.4
Travel, Per Diem	10.3	12.6	1.1	4.9	.3	3.8	
Training, Other Supply	508.4	189.1	779.9	592.1	126.8	681.9	415.9
Research (Not Projects)	170.6	28.0	39.6	28.8	4.2	64.8	30.7
Books	74.7	44.7	38.1	41.2	24.4	31.2	42.5
Student Stipends	5153.8	1300.4	6963.3	3815.1	1801.9	4544.1	8243.3
Health Service	3.0	1.8	.4	3.2		1.8	
Property, Furniture	91.8	45.0	66.7	34.4	44.9	82.1	100.8
Work Clothing	89.0	33.0	2.7	27.4	3.5	57.2	69.9
Facilities, Maintenance	66.1	78.3	54.2	51.7	32.5	122.5	33.7
Other	176.8	58.4	80.6	80.2	44.3	82.1	138.2
Total	15380.3	3777.3	16136.6	9521.0	4191.6	11771.0	15547.9

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-10

BUDGETS FOR HIGHER EDUCATION INSTITUTIONS, 1991
(THOUSANDS OF TUGRUGS)

	National Univ	Pedagog Inst - Khovd	Technic Univ	Pedagog Univ	Inst Frg Language	Agricult Univ	Medical Univ	Univ of Art
Salary	12541.1	2237.7	9756.0	6837.4	2687.3	6534.9	9813.9	1790.3
Social Security Tax	2331.8	539.9	1741.8	1369.8	385.2	1559.7	1937.7	314.8
Stationery, Office Supply	3266.9	1160.5	3127.8	3934.1	784.6	4006.9	2453.9	258.3
Travel, Per Diem	1.7	25.3	6.7	12.8		2.5		12.3
Training, Other Supply	1901.6	285.6	763.8	660.9	429.2	2601.8	2273.7	310.1
Research (Not Projects)	199.6	48.3	79.4	30.3		73.6	88.1	8.2
Books	375.1	30.6	128.5	56.8	74.0	25.4	17.8	8.2
Student Stipends	9828.6	2446.7	12700.6	7645.8	3220.6	7853.6	16714.0	1399.9
Health Service	2.9	.2	.3			8.7		
Property, Furniture	229.3	45.3	1113.7	35.8	74.7		376.7	79.5
Work Clothing	148.7	44.6	46.0	34.9	19.5	31.1	33.9	269.5
Facilities, Maintenance	225.3	96.7	380.3	40.4	106.2	123.5	670.9	51.0
Other	2678.3	286.0	3460.3	309.1	42.1	1028.2	2282.2	625.4
Total	33730.9	7247.4	33305.2	20968.1	7823.4	23849.9	36662.8	5127.5

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-11

BUDGETS FOR HIGHER EDUCATION INSTITUTIONS, 1992
(THOUSANDS OF TUGRUGS)

	National Univ	Pedagog Inst - Khovd	Technic Univ	Pedagog Univ	Inst Frg Language	Agricult Univ	Medical Univ	Univ of Art
Salary	17545.2	2711.5	16633.4	8292.9	3454.8	8750.0	13393.2	2735.5
Social Security Tax	2301.9	358.5	1046.5	1119.5	506.0	1168.0	1032.4	364.4
Stationery, Office Supply	4226.7	5062.4	5980.7	4706.2	1075.9	6427.7	3702.2	679.6
Travel, Per Diem	84.6	20.1	53.2	26.9		3.0		3.2
Training, Other Supply	1346.6	379.3	2909.1	364.2	61.1	3621.0	2247.7	357.9
Research (Not Projects)	177.7			20.5	13.5	71.1	98.0	
Books	148.8	54.7	377.2	37.7	2.4	77.2	47.3	22.0
Student Stipends	12329.0	2358.1	14379.6	8042.6	3329.9	6526.2	19545.2	1777.2
Health Service			2.2			8.5		7.2
Property, Furniture	1404.3	252.6	3856.5	26.3	252.8	15.0	829.0	128.0
Work Clothing	45.1		2.1	23.9		20.0	241.5	17.4
Facilities, Maintenance	1021.6	336.5	530.4	137.2	101.6	584.8	810.5	63.7
Other	2331.6	4209.8	1384.5	610.0	257.0	643.5	1069.7	99.9
Total	42963.1	15743.5	47155.4	23407.9	9055.0	27916.0	43016.7	6256.0

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-12

BUDGETS FOR COLLEGE OF COMMERCE AND BUSINESS, ECONOMIC COLLEGE, 1990-1993 (THOUSANDS OF TUGRUGS)

	College of Commerce and Business				Economic College			
	1990	1991	1992	Expected 1993	1990	1991	1992	Expected 1993
Salary	960.5	2151.9	3139.7	3916.0	1069.2	1575.1	2208.1	6611.2
Social Security Tax	121.9	242.9	247.1	529.0	127.8	290.0	296.8	892.5
Stationery, Office Supply	723.4	1228.2	1389.6	4976.4	956.0	1269.7	4178.3	6452.5
Travel, Per Diem	.8	5.4	1.0	80.0	2.5	.7	.3	34.0
Training, Other Supply	176.9	504.7	146.1	500.0	147.4	89.0	288.3	702.0
Research (Not Projects)				350.0				45.0
Books	9.8	36.4	276.5	510.0	9.7	21.3	50.6	150.0
Student Stipends	2066.6	3918.9	3351.3		2127.6	2322.8	222.1	
Health Service	.6	1.9	2.0	10.0	1.6	.8		
Property, Furniture	9.6	4.2	1.3	50.0	12.6	383.0	360.3	267.0
Work Clothing	6.8	.1		20.0	7.7	21.2		100.0
Facilities, Maintenance	16.5	77.7	292.8	572.6	23.0	29.0		100.0
Other	4.2	82.7	335.2	180.0	96.9	417.7	174.5	220.0
Total	4097.5	8305.0	8982.6	11694.0	4582.1	6420.5	7779.0	15574.2

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-13

ESTIMATED COST (IN TUGRUGS) OF SELECTED SPECIALIZATIONS BASED ON VARIABLE EXPENSES AT THE TECHNICAL UNIVERSITY, 1993

	Teachers' Salaries	Social Security	Practical Training	Equip-ment	Text-books	Health Service	Handouts, etc.	Total
Year 1								
Road Building	18,686	2,523	8,583		2,000	45	2,000	33,837
Construction Engineering	16,609	2,242			2,000	45	2,000	22,896
Architecture	16,609	2,242			2,000	45	2,000	22,896
Hydrotechnology	28,028	3,784	9,600		2,000	45	2,000	45,457
Geology	18,606	2,512	6,720		2,000	45	250	30,133
Geophysics	22,332	3,015	3,800		2,000	45	250	31,442
Hydrogeology	19,851	2,680	989	3,783	2,000	45	250	29,598
Electrical Engineering	16,050	2,167	4,000	3,000	2,000	45	3,000	30,262
Year 2								
Road Building	16,016	2,162	8,271		2,000	45	2,000	30,492
Construction Engineering	16,609	2,242	6,906		2,000	45	2,000	29,802
Architecture	16,609	2,242			2,000	45	2,000	22,896
Hydrotechnology	28,028	3,784	5,788		2,000	45	2,000	41,645
Geology	24,813	3,350	8,960		2,000	45	333	39,501
Geophysics	22,332	3,015	3,015		2,000	45	333	30,740
Hydrogeology	14,888	2,010	989	3,783	2,000	45	333	24,048
Electrical Engineering	15,612	2,108	4,000	3,000	2,000	45	3,000	29,765
Year 3								
Road Building	21,355	2,883	8,093		2,000	45	2,000	36,376
Construction Engineering	16,609	2,242	9,040		2,000	45	2,000	31,936
Architecture	28,747	3,881	1,800		2,000	45	2,000	38,473
Hydrotechnology	24,914	3,363	5,788		2,000	45	2,000	38,110
Geology	26,586	3,589	9,381		2,000	45	333	41,934
Geophysics	29,776	4,020	3,015	7,567	2,000	45	333	46,756
Hydrogeology	29,776	4,020	5,936	4,000	2,000	45	333	46,110
Electrical Engineering	21,188	2,860	4,500	3,400	2,000	45	3,200	37,193
Year 4								
Road Building	21,355	2,883	8,093		2,000	45	2,000	36,376
Construction Engineering	29,897	4,036	1,800		2,000	45	2,000	39,778
Architecture	16,160	2,182	3,605		2,000	45	2,000	25,992
Hydrotechnology	24,914	3,363	8,000		2,000	45	2,000	40,322
Geology	26,273	9,547	3,960	5,677	2,000	45	235	47,737
Geophysics	29,776	4,020	3,015		2,000	45	235	39,091
Hydrogeology	29,776	4,020	4,947	7,567	2,000	45	235	48,580
Electrical Engineering	25,458	3,437	4,500	3,500	2,000	45	3,200	42,140
Year 5								
Road Building	16,016	2,162			2,000	45		20,223
Construction Engineering	16,686	2,253			2,000	45		20,984
Architecture	22,221	2,300			2,000	45		26,566
Hydrotechnology	12,457	1,682			2,000	45		16,184
Geology	21,894	2,956			2,000	45		26,895
Geophysics	17,444	1,005			2,000	45		20,494
Hydrogeology	14,888	2,010			2,000	45		18,943
Electrical Engineering	22,470	3,034			2,000	45		27,549

SOURCE: Rector, Technical University, Mongolia.

TABLE 5-14

PROPOSED FEES BY UNIVERSITY AND SPECIALIZATION
FOR FIRST YEAR COURSE ONLY, 1993-94 (IN TUGRUGS)

	Institutions' Proposals	MOSE Proposals
National University of Mongolia		
Main Campus		
Mathematics	26,500	
Meteorology	29,500	
Chemistry	29,000	
Biology	29,500	
Geography	28,000	
Mongolian Language	26,500	
Foreign Languages	29,500	
History	25,500	
Philosophy	24,500	
Law	24,500	
Economics a) full-time	27,000	
b) extra-mural	12,000	
Preparatory	18,900	
AVERAGE	27,300	30,000
Khovd Branch (Pedagogical Institute)		
Mathematics	21,000	
Physics	23,000	
Mongolian Lang. & Literature	23,000	
History	23,000	
Biology	25,000	
Chemistry	25,000	
Biology & Geography	25,000	
AVERAGE		24,000
Zavkhan Branch (Economic College)		
All subjects		12,000
Technical University		
School of Building & Engineering		
Road Building	33,800	
Architecture	19,200	
Building	19,200	
Hydrotechnology	45,400	
Sanitation & Water Supply	33,500	
Hot Water Supply	33,500	
AVERAGE	30,800	
School of Geology & Mining		
Oil Engineering	23,800	
Mining	25,500	
Geology	32,100	
Geodesy Engineering	37,600	
Geophysics	32,400	
Hydrogeology	30,600	

Mining Mechanics	32,000	
Mine Utilization	23,300	
Mining Electricity	26,000	
AVERAGE	29,200	
School of Mechanics & Technology		
Building and Road Mechanics	33,400	
Wood Processing	33,400	
Restaurant Technology	17,000	
Light Industry Mechanics	24,300	
Light Industry Technology	19,000	
Food Industry Mechanics	28,300	
Food Industry Technology	15,100	
AVERAGE	24,700	
Fundamental Education Center		
Material Engineering&Physics	33,200	
Chemistry Technol&Engineering	25,500	
School of Power Engineering		
Electrical Engineering	27,200	
Power Automation	27,700	
Manufacture Heating Systems	33,200	
Electricity Stations	37,500	
Pedagogical University		
All Courses	22,400	23,000
Foreign Language Institute	25,000	21,000
Erdenet Branch of FLI	23,000	20,000
Medical University		
All Courses	30,000	27,000
National Agricultural University		
Veterinary Science	24,000	
Zoology	23,200	
Agricultural Engineering	27,300	
Agronomy	25,200	
Agricultural Economics	20,300	
AVERAGE	23,300	23,000
National University of Art		
All Courses		28,000
University of Technology		25,000
College of Commerce & Business	20,000	12,000
College of Economics	19,000	12,000
Technical College, Darkhan	25,000	15,000
College of Fine Arts, Ulaanbaatar		21,000

Teachers' College, Arkhangai	15,000	11,500
Teachers' College, Dornod	12,000	11,500
Medical College, Middle-Gobi		
Nursing	12,000	
Doctor	21,000	12,300
Musical College, Ulaanbaatar		
All Courses	30,000	27,500
College of Culture, Ulaanbaatar		
Culture Worker	14,000	
Teacher for Music & Singing	16,000	
Library	16,000	
Dancing Teacher	18,000	
AVERAGE		17,000

SOURCE: Ministry of Science and Education, State Training Fund, Mongolia.

TABLE 5-15

REGULATIONS ON ACCREDITATION OF HIGHER AND POST-GRADUATE SCHOOLS

Approved February 11, 1993, as an Appendix to the Minister of Science and Education's Directive No. 47.

One. Basics

1. This regulation is for accreditation of public and public/private higher schools.

2. Higher education will award bachelors, masters, Ph.D. and Doctor of Science degrees as the scientific degrees.

3. Depending on the educational level of their graduates, the quality and level of the activities of higher schools will be:
I. National University
II. University
III. College

4. Accredititation of higher schools will be done by the Minister of Science and Education based on indices stated in these regulations.

5. Accreditation and re-accreditation will be done on the request of the school by a Commission appointed by the Ministry of Science and Education. The Commission, after the determining the level of the school, presents the results to the Minister's Council. If necessary, the Ministry of Science and Education will carry out inspections at their own initiative.

Two. Accreditation.

6. Higher schools.
I. National University: Should meet all indices of Level II and more than 80 percent of Level I.
II. University: Should meet all indices of Level II and more than 60 percent of Level I.
III. College : Should meet all indices of Level III and at least 50 percent of Levels I and II.

Accreditation of Higher Schools

Institutional Classification	Percentage of Indices Met		
	Level I	Level II	Level III
I. National University	> 80	100	100
II. University	> 60	100	100
III. College	> 50	> 50	100

Three. Criteria, Indices and Classification of Higher Schools

	Classification		
	I. Doctor	II. Masters	III. Bachelors
Training Quality Level:			
Percentage of teachers with degrees higher than masters	> 90	> 70	> 50
Percentage of teachers with degrees of Ph.D. or higher	> 40	> 30	> 10
Percentage of elective subjects	> 30	> 25	> 20
Among graduates of last 10 years:			
a. Innovators	+	+	
b. Percentage employed in their specialization	> 90	> 90	> 75
c. Percentage with incentives stipend	> 50	> 25	
Scientific information units per student (2 lecture hours = 1 scientific information unit, used only in training)	> 1000	> 800	> 600
Percentage of students carrying out research work	> 60	> 45	
Exchange of students and diplomas with well-known foreign univs.	+		
Research Work:			
Percentage of research work financed directly for training and research	> 60	> 40	> 10
Percentage of researchers with scientific degrees of Ph.D. or higher	> 50	> 30	
Research conducted with leading scholars and students	+	+	
Contribution to Mongolian studies, national science and technology, international recognition	+		
Organization of international scientific conferences, workshops, symposia, studies	+		
Quality of teachers' & researchers' work (publication in well-known foreign journals)	+	+	
Participation in joint research with well-known foreign institutions	+		
Frame of Training and Research:			
Percentage of specialists trained in the country	> 50	> 30	
Percentage of researchers	> 60	> 30	
Percentage of revenue above fixed costs from production and service provided	> 30	> 25	>15

TABLE 5-16

REGULATIONS FOR THE ESTABLISHMENT OF PRIVATE OR MIXED OWNERSHIP PROFESSIONAL INSTITUTIONS

Appendix to Order 491 of November 12, 1992, Ministry of Science and Education of Mongolia.

ONE. GENERAL

1. This regulation is to be followed by those who want to establish and run private schools on the initiation of companies or individuals in Mongolia.

2. Private schools can be set up and run by initiation of interested organizations or individuals to train qualified personnel due to needs and requirements of enterprises and institutions or individual interests and talents.

3. Private professional schools should establish their regulations and internal rules based on the Constitution, Education Law, Standards of Professional Schools, and other legislation of Mongolia.

4. Organization of training, research, and practical work in private schools should be according to the legislation and regulations on education.

5. In order to coordinate the professional needs and number of students with the state policy in training of newly qualified personnel, the Ministry of Science and Education will control the activities of private schools.

6. A member of the Graduates Testing Commission will be nominated by the Minister of Science and Education based on recommendations of the schools concerned.

7. Students in the private schools may be transferred to state schools only by taking entrance exams according to current regulations and recognition of the training program and other conditions of the state schools.

8. Private schools are legislated to have their own stamp and letter forms.

TWO. REQUIREMENTS FOR ESTABLISHING PRIVATE PROFESSIONAL SCHOOLS

1. The following should be presented to establish private professional schools:

a. Specification of the specialty, training, programs, and curriculum endorsed by the educational institution and approved by the Ministry of Education.
b. Not less than 60 percent of the faculty members teaching basic

subjects in the specialty should be full-time and, if a higher school, not less than 30 percent of the full-time faculty should have scientific degrees.

c. Schools should have a library of text books and study materials to supply at least 50 percent of their students.

d. Laboratories set up for the necessary basic specialty training.

e. Premises to accommodate students with an area of 3 square meters per person, a sport hall, and other facilities to organize out of class activities should be owned or rented for at least four years.

f. Funds of at least 500,000 Tugrugs, 30 percent of which should be in cash.

2. The initiator for establishing a private school should complete the following documents:

a. Brief information on the objectives, training specialty, term of training, faculty members, material basis, payment and accounts, premises and facilities.

b. Permission and qualifications of faculty members.

c. Contracts on premises and facilities.

d. Financing, methods of payments and accounts.

e. Specification of specialties, training programs, curriculum.

f. Approval by the professional institutions.

g. Recommendation of institutions concerned with establishment of the school.

3. Permission on establishment of private schools should be given after discussion at the Ministers' Council. Based on this permission, the city or aimag district's tax offices will issue a certificate according to the Regulation for the Establishment of Companies.

THREE. ADMINISTRATION OF PRIVATE SCHOOLS

1. The person financing the school is an owner. Based on the owner's recommendation, the Ministry of Science and Education will nominate the Director of the school.

2. The Director should be a graduate of a university or higher school with a specialization in which the school provides training, with experience in teaching or management at a school of the same or higher level. Persons meeting these requirements are allowed to work as a director or owner of the school.

TABLE 5-17

MOBILITY OF STUDENTS IN MONGOLIAN HIGHER EDUCATION, 1992

Status	Total	% Female
1. Students enrolled 1 January 1992	14,014	61.2
2. Moved up to next level	10,171	61.6
3. Students who left higher educ.:	5,102	56.7
Graduated	2,829	62.1
Entered a different institution	451	43.0
One year leave - health reasons	352	50.9
One year leave - family	482	41.3
One year leave - pregnancy	283	100.0
Failing grades	192	43.8
Disciplinary dismissal	43	18.6
Died	8	62.5
Convicted of a crime	7	0.0
Left study to work	86	40.7
Other reasons	375	39.7
4. New entrants or moved up from prior courses	14,718	63.4
5. Students who entered/re-entered higher education:	1,444	50.8
From other institutions	379	43.8
From one year leave - health	241	39.8
From one year leave - family	240	43.8
From one year leave - pregnancy	215	100.0
Other reasons	369	40.7
6. Students enrolled 25 December 1992(6.=1.-2.-3.+4.+5.)	14,903	63.6

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 5-18

ENROLLMENT FOR FIRST ACADEMIC DEGREES (ISCED LEVEL 6) AND GRADUATE DEGREES (ISCED LEVEL 7) IN MONGOLIAN HIGHER EDUCATION BY GENDER AND ACADEMIC FIELD (UNESCO CATEGORIES), 1992-1993 *

UNESCO Field of Study	ISCED Level 6 Total	Level 6 % Female	ISCED Level 7 Total	Level 7 % Female
1. Education and Teacher Training	4775	73.8	2	
2. Humanities, Religion, Theology	1679	73.6	29	6.9
3. Fine and Applied Arts	412	49.0		
4. Law	282	46.5	4	25.0
5. Social and Behavioral Science	255	65.9	10	20.0
6. Commercial and Business Admin.	1705	59.2	1	
7. Mass Communication, Documentation	86	69.8	1	
9. Service Trades	116	75.9	3	66.7
10. Natural Science	727	54.3	49	12.2
11. Mathematics and Computer Science	455	41.1	11	
12. Medical Science, Health-related	2748	79.3	4	50.0
13. Engineering	1973	40.3	33	12.1
14. Architecture	38	26.3		
15. Trade, Craft, and Industrial	241	49.0	15	40.0
16. Transport and Communications	469	35.8		
17. Agriculture, Forestry, Fishery	956	54.1	28	28.6
18. Other and Not Specified			2	
Total	16917	63.8	192	17.2

* ISCED = International Standard Classification of Education; Level 6 = program leading "to the awarding of a first university degree or equivalent qualification;" Level 7 = progam leading to a "higher post-graduate degree or equivalent qualification."

SOURCE: Ministry of Science and Education, Mongolia.

TABLE 6-1

TRAINING AND PRODUCTION CENTERS (TPC) AND STEP SCHOOLS, 1993

Institution	Enrollment
First Construction TPC in Ulaanbaatar	475
Second Construction TPC in Ulaanbaatar	507
Construction TPC in Darkhan	443
Agricultural TPC in Shaamar (Selenge Aimag)	342
Agriculture TPC in Tsagaantolgoi (Selenge)	250
Agriculture TPC in Ugtaal (Central Aimag)	91
Agriculture TPC in Arkhust (Central Aimag)	100
Agriculture TPC in Zaamav (Central Aimag)	170
Public Service TPC in Ulaanbaatar	684
Light Industry TPC in Erdenet City	214
TPC in Arkhangai	155
TPC in Bayan-Ulgyi	394
TPC in Bayankhongor	293
TPC in Bulgan	345
TPC in Gobi-Altai	301
TPC in Dornogobi	478
TPC in Dornad	129
TPC in Dundgobi	192
TPC in Zavkhan	385
TPC in Nalaikh District, Ulaanbaatar	236
TPC in Umungobi	178
TPC in Selenge	360
TPC in Central Aimag	245
TPC in Ubs/Uvs	347
TPC in Khuvsgul	295
TPC in Khentyi	310
Construction Step School in Ulaanbaatar	435
Construction Training Center in Darkhan	285
Light Industry Step TPC in Ulaanbaatar	350
Food Industry Step TPC in Ulaanbaatar	480
Agricultural Step TPC in Dornad	217
TPC in Uvurkhangai	333

SOURCE: Ministry of Science and Education, 1993.

TABLE 6-2

ENROLLMENTS AND ADMISSIONS TO VOCATIONAL SCHOOLS
1990-1992

School	1990	1991	1992
T/V Secondary			
Enrollment	29,067	19,252	11,685
Local	26,431	17,961	11,491
Foreign	2,636	1,291	194
New Admissions	10,517	6,595	4,812
Local	9,697	6,595	4,812
Foreign	820	0	0
Postsecondary			
Enrollment	18,476	15,779	8,703
Local	17,609	14,986	8,116
Foreign	867	793	587
New Admissions	5,617	4,193	1,786
Local	5,408	4,101	1,780
Foreign	209	92	6

SOURCE: Ministry of Science and Education, 1993

TABLE 6-3

VOCATIONAL PROGRAM GRADUATES BY AREA
1990-1992

Area	1990	1991	1992
Agriculture	3,750	3,027	2,884
Construction	3,900	4,520	2,988
Industry	3,014	2,915	2,618
Trades	280	188	120
Public Service	1,600	850	610
Total	12,544	11,500	9,820

SOURCE: Ministry of Science and Education, 1993

TABLE 6-4

VOCATIONAL ENROLLMENT AND SEATING BY LOCATION/REGION
1993

Location	Seats	Enrollment	Unused Seats
Cities	3,680	2,665	1,015
Central	3,120	1,330	1,790
North	1,640	1,037	603
South	1,540	848	692
East	840	439	401
West	2,360	1,722	638
Total	13,180	8,041	5,139

SOURCE: Ministry of Science and Education, 1993

TABLE 6-5

VOCATIONAL AND TECHNICAL EDUCATION TEACHERS BY LEVEL OF INSTRUCTION
1992

Institution	Vocational Teachers	Technical Teachers
Training Centers	746	323
Step Schools	176	157
Prof. Secondary	0	20
College	38	46
University	27	309
Private	0	2
Total	987	857

SOURCE: Ministry of Science and Education, 1993

TABLE 6-6

YEARS OF TEACHING EXPERIENCE BY INSTRUCTIONAL LEVEL
1992

School	0-5	6-10	11-15	16-20	21-25	26 +
TPC	173	172	144	104	82	71
Step	26	64	46	47	42	33
Prof.	31	24	24	25	23	20
College	107	132	123	86	77	93
Higher	288	221	226	215	176	270
Private	28	8	12	15	8	15
Total	653	611	575	492	408	502

SOURCE: Ministry of Science and Education, 1993

TABLE 6-7

AGE DISTRIBUTION OF TEACHERS BY INSTITUTION, 1992

School	-30	30-50	51-54	55-59	60 +
TPC	202	496	37	10	1
Step	41	183	17	6	1
Prof.	30	95	11	9	2
College	114	400	67	23	14
Higher	272	868	137	77	42
Private	22	45	8	3	8
Total	681	2,087	277	128	68

SOURCE: Ministry of Science and Education

TABLE 6-8

PREPARATION LEVEL OF TEACHERS BY INSTITUTION, 1992

School	Higher	College	Special Sec	Secondary
TPC	360	18	298	70
Step	191	0	56	5
Profession	131	0	16	0
College	532	8	78	0
Higher	1,364	0	29	3
Private	79	1	1	5
Total	2,657	27	474	83

SOURCE: Ministry of Education, 1993

TABLE 6-9

TEACHER SALARY SCHEDULE, 1992

Category	I	II	III	IV	V
TPC	3,500	3,800	4,100	4,400	4,700
College	4,500	4,800	5,100	5,400	5,800
Sr Teach	4,900	5,200	5,500	5,800	6,100

SOURCE: Ministry of Science and Education, 1993

TABLE 6-10

AREAS OF VOCATIONAL INSTRUCTION BY SPECIALISM, 1993

Major Area by Specialism	Major Area by Specialism
AGRICULTURE AREA	CONSTRUCTION AREA, contined
Herdsman	Weavers
Universal cattle breeder	Light industry repairpersons
Milk receivers and processors	Spinners
Procurers	Breadmakers
Veterinarians	Pastry chefs
Agriculture builder	Milk and dairy processors
Tractor and combine operators	Meat processors
Berry and vegetable growers	Brewers
Agriculture machine operators	Flour makers
Agriculture machine repairers	Food machine repairers
Irrigation system operators	Cooling equipment repairers
Well motor repairers	Diesel-locomotive repairers
Agriculture electricians	Road builders
Bee-Keepers	Train carriage repairers
CONSTRUCTION AREA	Assistant station masters
Steel form fitters	Enginer drivers/assistants
Carpenters	Conductors
Construction electrician	Mine equipment repairers
Construction machine repairers	Power station machinists
Electric equipment repairers	Compressor repairpersons
Bridge crane operators	Heater repairers
Pipe fitters	Water pipe fitters
Polishers	Electric system repairers
Painters	Turbine machinists
Electric arc welders	Excavator drivers
Whitening equipment operators	Welders
Brick layers	Carpenters
Concrete fabricators	Exploration Drillers
Brick equipment operators	Heavy equipment operators
Heavy equipment operators	Automobile electric repairers

TABLE 6-10

AREAS OF VOCATIONAL INSTRUCTION BY SPECIALISM, 1993

Major Area by Specialism	Major Area by Specialism
Concrete production operators	Automobile mechanics
Forest planters	Lathe operators
Woodworking machine operators	Milling machine operators
Furniture carpenters	Shoe makers
Woodworking machine repairers	Clothes sewers
Whitening machine operators	Tailors
General plant electricians	Printers
Millwrights	Hairdressers
INDUSTRY AREA	Photographers
Cooks	Military clothes sewers
Salesmen	Plasterers
Cashiers	Dry-cleaning machine operators
Waitpersons	Lift repairers
Accountants	Interior decorators
Fur sewers	Telephone/telegraph operators
Felt shoe makers	Radio systems fitters
Leather sewers	Cable splicers
Shoemakers	Cable fitters
Cashmere processors	Offset printers
Wool processors	Radio-telephone system fitters
Skin and hide processors	Flour equipment repairers
Carpet makers	Specialty cooks
Textile workers	High voltage systems fitters

SOURCE: Ministry of Science and Education, 1993

TABLE 6-11

CONTACT HOUR REQUIREMENTS FOR ONE- AND TWO-YEAR VOCATIONAL PROGRAMS, 1993

Area of Study	One-Year Program	Two-Year Program
General Education	150	243
Professional Basis	200	350
Qualification	250	280
Practicum	894	1,836
Total	1,494	2,709

SOURCE: Ministry of Education, 1993

TABLE 6-12

PERCENTAGE OF TIME SPENT ON GENERAL EDUCATION, PROFESSIONAL BASICS AND QUALIFICATIONS, 1993

Duration	General Ed.	Basic Prof.	Qualification
Year One	9.2	33.5	57.3
Year Two	7.6	38.2	54.2
Year Three	34.0	6.0	60.0

SOURCE: Ministry of Science and Education, 1993

TABLE 6-13

ADMINISTRATION OF TRAINING AND PRODUCTION CENTERS AND STEP SCHOOLS, 1992

Type	PTC	Step	Total
Director	26	5	31
Deputy	26	5	31
Sr. Teacher	7	3	10
Sr. Master	13	0	13
Finace Asst.	13	3	16
Total	85	16	101

SOURCE: Ministry of Science and Education

TABLE 6-14

ADMINISTRATIVE COSTS IN TRAINING AND PRODUCTION CENTERS AND STEP SCHOOLS, 1992(IN THOUSANDS OF TUGRUGS)

Location/Region	Cost	Ave/Monthly Cost
Cities	67,205	6,110
North	27,547	9,182
East	26,553	8,851
Central	59,224	7,403
West	39,920	7,984
South	13,658	4,553
Total	234,107	7,094

SOURCE: Ministry of Science and Education, 1993

TABLE 6-15

AVERAGE AGE OF VOCATIONAL FACILITIES AND EQUIPMENT BY LOCATION, 1993

Location/Region	Facilities	Equipment
Cities	18	13
Central	22	17
West	25	20
East	27	20
North	13	14
South	15	12
Total Average Age	20	17

SOURCE: Ministry of Science and Education

TABLE 6-16

VOCATIONAL TRAINING COSTS, 1992(THOUSANDS OF TUGRUGS)

School	Salary	Utilities	Equipment	Stipends
Polytech	1,411.5	933.3	309.8	2679.5
Constr.	1,735.5	1,425.7	117.6	3529.0
Agricult.	771.0	413.5	44.9	2,024.1
Transport.	584.2	285.9	134.1	1,428.2
Industry	513.5	348.9	35.4	1,327.3
Total	5,015.7	3,058.4	641.8	10,988.1

SOURCE: Ministry of Science and Education, 1993