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###### MONGOLIA EDUCATION SECTOR STRATEGY, 2000–2005

# Prepared for the Government of

# Mongolia by the Ministry of Science,

# Technology, Education and Culture

# Support for this activity was provided

**by the Asian Development Bank.**

# Ulaanbaatar, 1999

# FOREWORD

Over the past few months the Ministry for Science, Technology, Education, and Culture has focussed much of its attention on planning for the future and has devoted a considerable amount of time and effort to the development of education sector strategies for the medium term from 2000 to 2005. These strategies denote a new phase in planning for the education and human resource sector in Mongolia, which will promote better learning outcomes for students and will help create a more productive and prosperous society.

*Education Sector Strategy, 2000–2005,* is a blueprint for an improved education system for students. It has been developed to assist the Ministry to provide a clear focus and direction for the education sector in the future. It is the combined result of a careful review of achievements over the last five years, together with an insightful analysis of needs in each of the sub-sectors of education.

This report also represents an important step forward for the future management of improvements in the education sector. As projects and activities are implemented to fulfil strategy requirements, it will be of considerable assistance to the Ministry in ensuring that the efforts of all of the various partners in education are better integrated and better coordinated. Ultimately this will conserve valuable resources, improve learning and result in real benefits for our young people.

The Honorable Avirmed Battor

Minister of Science, Technology, Education and Science

Ulaanbaatar

## Mongolia

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PREFACE

# The Ministry of Science, Technology. Education and Culture is pleased to introduce the *Education Sector Strategy, 2000–2005* report. Underlying the development of the strategies reported here is the belief that the education and human resource sector in Mongolia will benefit from planned and coordinated change over the first five years of the next decade.

As Mongolia continues its transition into a market economy, the timing of this report is highly appropriate. The last comprehensive planning exercise for the education sector occurred in 1993 and 1994 when the Asian Development Bank financed a Sector Review and associated Master Plan. These studies have been instrumental in guiding developments in this sector since that time.

The period since 1993 has been one of significant accomplishments for the education and human resource sector. Overall, improvements have been made in a wide range of educational activities. This has included, but is not limited to, the management and financing of operations, the training and deployment of personnel, the delivery of educational programs and the production and distribution of instructional materials. All sub-sectors of education have benefited in some way through the changes that have take place.

In the future, this momentum must be preserved. In contrast with the past, the future will be facilitated by the existence of a comprehensive set of laws, resolutions, policies and directives that have been passed by the Parliament of Mongolia (Great Khural). These documents set the goals and directions for the education sector strategies, which have now been developed by MOSTEC.

However, it must be understood that the preparation of this *Education Sector Strategy, 2000–2005* is only the first step towards even greater excellence in education. Considerable further work and planning must now be undertaken to ensure that implementation of the strategies detailed in this report achieve the desired results over the next five years.

I am sure that everyone involved in the future development of this important sector will be keen to provide the continued support and momentum needed for successful implementation of these strategies.

R Bat-Erdene

State Secretary

Ministry of Science, Technology, Education and Culture

Ulaanbaatar

## Mongolia

ACKNOWLEDGEMENTS

# Preparation of strategies for future development of the Mongolian education and human resource sector has been a participatory exercise involving a large number of people with a wide range of expertise.

Key roles in the project, which has culminated in this report, were shared by a number of people. They included the Asian Development Bank Mission Leader, Dr S A Chowdhury, who provided guidance and technical supervision; a small team of consultants comprising two international experts, Mr Robert Lenahan and Dr John Weidman, and three local experts, Mr J Sukhbaatar, Mrs Ts Jargalmaa and Mr D Monkhor; a working group of MOSTEC officers, Mr Ts Myagmar, Mr D Munkhjargal, Mrs N Nergui, Mr U Ganbold, Mr M Baasanjav and Mr Ch Buyanjargal; and a group of four advisers drawn from senior positions in MOSTEC, Mr R Bat-Erdene, Mr Ch Purevdorj, Mr S Altangerel and Mr B Baatarzorig. The individual contributions and collective efforts of all of these experts in these key roles are greatly appreciated.

Thanks must also go to participants who attended a national workshop on 10 June 1999. These participants included members of the Parliament of Mongolia, representatives of donor organizations, visiting consultants assisting with other projects, officers from other Ministries of the Government and representatives of a range of different educational organizations and institutions. The valuable contributions of all workshop participants were instrumental in shaping the final form of the strategies.

Specific help was given to the project by a number of people who gave freely of their time to become involved in personal interviews and small group discussions. Again this involved some members of parliament and representatives of donor organizations. In addition, it included officers from aimag administrations, administrators of higher education institutions and principals and teachers from schools. The willingness of these people to share their observations and views with members of the consulting team and members of the work group was invaluable.

Finally, none of the participatory development of strategies for this report could have occurred without support from the Asian Development Bank, which funded the entire project. The on-going support of the Bank in making improvements to the education and human resource sector in Mongolia is gratefully acknowledged.

**Abbreviations**

ADB Asian Development Bank

AUSAID Australian Agency for International Development

CCM Mongolia Country Consultation Mission by Asian Development Bank, 3–11 February 1999.

DAAD German Academic Exchange Service

DANIDA Danish International Development Assistance

ESDP Education Sector Development Program funded by ADB

GDP Gross Domestic Product

JICA Japanese International Cooperation Agency

MAP 21 Mongolia Action Plan for the twenty-first century

MFOS Mongolia Foundation for Open Society (Soros Foundation)

MOSTEC Ministry of Science, Technology, Education and Culture

TA Technical Assistance provided by the ADB

TEVT Technical Education and Vocational Training

UNDP United Nations Development Program

UNESCO United Nations Educational, Scientific and Cultural Organization

UNICEF United Nations Children’s Fund

EXECUTIVE SUMMARY

1. This report has been prepared for the Government of Mongolia by the Ministry of Science, Technology, Education and Culture (MOSTEC) to provide guidance for the development of the education sector in Mongolia from 2000 to 2005. Work on the project which led to this report began early in 1999 when MOSTEC recognized the need to review plans for development of the education and human resource sector into the next millenium. In subsequent discussions with the Asian Development Bank it was agreed that the Bank would support a project to prepare sector strategies for this report through a small scale technical assistance study.
2. The primary objective of the project was to establish strategies for the development of the education and human resource sector for the period 2000 to 2005. Altogether 23 strategies are documented in this report which also proposes priorities for future development and indicates broad cost estimates for their implementation. A secondary objective of the project was to update information from a sector review conducted in 1993.
3. The project drew upon the knowledge and expertise of a team comprising international and local consultants, a working group of senior officers of MOSTEC and four senior officers of MOSTEC appointed by the State Secretary as advisers to the project. Drafts of the strategies were reviewed and further developed at a national workshop held on 10 June 1999 and at a follow up workshop on 16 July 1999. The strategies finally approved by MOSTEC for this report were the product of consideration of the Government’s current economic and social planning, a review of developments and needs since the Sector Review in 1993 and an analysis of demographic circumstances.
4. To ensure that these educational strategies conform to the overall directions of Government, Chapter 2 of this report reviews recent work on national strategies. In 1998, the Government of Mongolia released a document *The Mongolia Action Plan for the 21st Century* or *MAP 21*. This document sets out a strategy for environmentally friendly, economically stable, socially wealthy, sustainable development for all participants. *MAP 21* acknowledges the importance of the education sector and incorporates specific objectives for it.
5. In June 1999 the Government of Mongolia released its *Medium-Term Economic and Social Development Strategy, 1999–2002.* This document contains two sections covering background information and a development strategy. The major aim of the development strategy is to, “…accelerate economic growth in order to increase the living standards of the population”. One of the key components is the human development and social sector development strategy. As economic growth accelerates, the development of Mongolian human resources will become one of the vital medium-term goals of the nation. The Government intends to accelerate ongoing reforms in the educational system, and improve the content of training programs and materials.
6. Development of the strategies for the report has also taken into account the substantial reforms that have occurred since 1993 when the Asian Development Bank funded the Sector Review and the Master Plan. These are set out in Chapter 3. One of the most notable changes from a strategic perspective is that the Parliament of Mongolia (Great Khural) passed a comprehensive set of laws governing the entire education sector in 1995. This legislation included a set of general principles underpinning education in the country as well as specific laws for education in general, and primary and secondary education, and higher education, in particular. These laws were amended in 1998.
7. In addition to the laws, several Government resolutions have also been issued that establish general policy directions for the various sub-sectors of education. The, “Main Directive of the Government of Mongolia for Reform in the Educational Sector in 1997–2005”, is particularly important as it sets out a series of proposed changes which have guided the formulation of strategies for this report.
8. Chapter 3 also outlines the implementation of change and the current situation in each of the sub-sectors of education. The following areas, originally identified in the 1994 Master Plan*,* have been addressed in implementation activities, but varying degrees of effort remain important for strategic development over the next five years:

* Improvement of facilities
* Provision of materials
* Teacher training and retraining
* Educational finance, and
* Organization and management of the educational system.

1. Formulation of the strategies also took into account future financing of the education sector, which is discussed in Chapter 2, and the demands for educational services as reflected in enrolment projections. These projections are set out in Chapter 3.
2. Although it is difficult to make firm predictions about future financing for the education sector, the Government clearly intends to support this sector as the economy grows. It will also foster private financing and participation in education. The most likely scenario is that the proportion of the overall Government budget assigned to education will remain relatively stable in the foreseeable future. Accordingly MOSTEC expects to be able to proceed with the proposed strategies, but will adopt a conservative position in relation to implementation.
3. An analysis of demographic issues by MOSTEC shows that in 1990, population growth was approximately 2.7% per annum, but over the ten years to 1998 crude birth rates fell from 36.5 per thousand in the population to 20.6. During the same period mortality rates also declined from 8.4 per thousand in the population to 6.6. The net effect of these changes reduced population growth to a level of approximately 1.4% in 1998. Changes in the birth rate will have an impact upon the education sector and will ease demographic pressures on preschool education and primary education during the period. MOSTEC recognizes this as an opportunity to move ahead with the implementation of the strategies, especially those that will promote qualitative changes.
4. The 23 strategies described in Chapter 4 of the report were developed to conform to these circumstances. Associated projects and activities that are appropriate for the implementation of each of the strategies are also set out in Chapter 4. Both the strategies and activities are listed in Appendix 1.
5. Most of the strategies are directly concerned with one of the six main sub-sectors of education but one is exceptional as it relates to the sector overall. This particular strategy is intended to improve planning, management and coordination across the whole sector by progressively introducing key steps necessary to implement an annual strategic planning cycle in MOSTEC. This strategy is considered vital for the future management of the education sector and for the progressive review and implementation of the remaining 22 strategies during the period 2000 to 2005.
6. Amongst these remaining strategies, some are specifically related to the requirements of a particular sub-sector. However, the majority address needs that are common to more than one of the sub-sectors. The following four common needs were identified:

* Alleviating deficiencies with educational facilities
* Providing teacher training and re-training
* Developing curriculum and providing textbooks and other education materials, and
* Increasing student participation in education.

1. Consequently, several strategies were developed in response to requirements for facilities improvements, equipment replacement and infrastructure development. These are described in Chapter 4, and are found in the sub-sectors of preschool education, primary and secondary education, technical education and vocational training, science and technology, and non-formal and distance education.
2. Similarly, strategies common to a number of sub-sectors are reported for curriculum development and implementation, and the training of teachers and educational administrators. These strategies feature in the sub-sectors of preschool education, primary and secondary education, technical education and vocational training, and non-formal and distance education.
3. Concerns about standards, student assessment and quality improvement have led to the development of strategies in the primary and secondary education, technical education and vocational training and higher education sub-sectors.
4. Four of the six sub-sectors developed specific strategies in response to their unique needs. One of the strategies in primary and secondary education, for example, was developed to reform the structure and operations of institutions that undertake research and development for this sector. Implementation of this strategy will establish a more reliable scientific foundation for policy and concepts to improve the management, organization and methodology in primary and secondary education.
5. One of the essential, specific strategies for technical education and vocational training, which should precede the implementation of all other strategies in this sub-sector is directed at improving research and information about the labour market. This is essential to bring technical education and vocational training programs into better alignment with labour market demand. Another specific strategy of this sub-sector is to diversify and improve the funding of institutions and courses.
6. The specific strategies of higher education are intended to improve the quality, relevance, management and financial capabilities of institutions. One of the strategies is intended to establish more effective policy development processes. Current reform activities in higher education will continue to be supported.
7. In the science and technology sub-sector there are recognized needs for a more unified approach by the various research institutes and for greater exposure to the international scientific community. There is also a need to support research and development activities in the universities and to develop the capacity of their science and technology departments. Two specific strategies reflect these needs.
8. In the report, MOSTEC recognizes that subsequent implementation of these 23 strategies over the next five years will depend upon the availability of funding and resources. Accordingly, Chapter 5 of the report sets out cost estimates of each of the strategies. These are shown in greater detail in Appendix 2. However, the proposals in this report are at a strategic level, not an operational level, and the cost estimates are, therefore, very approximate. They are intended to differentiate between strategies that will be resource intensive and those that can be implemented at a moderate cost. The calculation of more refined cost estimates will be an essential component of future operational planning as MOSTEC moves into the implementation of each particular strategy.
9. The strategies described in Chapter 4 and set out in Appendix 1 are listed in order of priority within each sub-sector. It is important, for example, for the labour market research in the technical education and vocational training sub-sector to occur prior to implementation of other strategies. In addition, all strategies have been given a ranking on a ten point scale to show priorities across the entire sector. The rationale for these ten categories is described in Chapter 5. Fundamentally it is based upon a conservative view of future budgets for the education sector and the premise that available resources should be used as intensively as possible to achieve maximum benefits.
10. Given the critical nature of the planning and management strategy that affects the whole sector, the establishment of an annual MOSTEC strategic planning cycle, this was accorded a high priority. Further efforts will be made during coming years to strengthen the professional capacity and skills of MOSTEC staff to undertake this task and successfully monitor the implementation of the strategic objectives of the education sector.

# CHAPTER 1 - INTRODUCTION

1.1 The Government of Mongolia has demonstrated a strong commitment to undertake needed reforms and improvements in the education sector and intends to continue sector wide initiatives, which are already well advanced, in a planned way for the next decade. In keeping with this commitment, this report has been prepared for the Government of Mongolia by the Ministry of Science, Technology, Education and Culture (MOSTEC) to provide guidance and direction for the development of the education sector in Mongolia from 2000 to 2005.

1.2 This report originated early in 1999 when MOSTEC recognized the need to review plans for development of the education and human resource sector into the next millenium. More specifically, MOSTEC identified a requirement for a planning document that would provide an analytical base for addressing key issues in human resource development, and would indicate priority interventions in the education sector over the medium term from 2000 to 2005. It also recognized that such a document would help provide a sound basis to mobilize future domestic and external resources.

1.3 During the Asian Development Bank’s Mongolia Country Consultation Mission (CCM) in February 1999, discussions took place with the CCM concerning the planning requirements identified by MOSTEC. Subsequently the Bank agreed to support work to prepare a report on education sector strategies through the financing of a small scale technical assistance study.

***Purpose***

1.4 From an overall perspective, MOSTEC’s planning processes are directed at improvements in the access, quality, relevance, cost effectiveness and sustainability of the education sector in the context of Mongolia’s transition from a centrally planned economy to a market-oriented economy. The primary objective of the project underpinning this report was to establish strategies for the development of the education and human resource sector for the period 2000 to 2005. Altogether 23 strategies are documented in this report which also proposes priorities for future development and indicates broad cost estimates for their implementation. A secondary objective of the project was to update information from a sector review conducted in 1993.

## Historical Background

1.5 Mongolia’s substantial achievements in the field of education were secured through a high level of investments made possible by assistance from the former Soviet Union and the Council of Mutual Economic Assistance. However, progress was severely undermined by the economic and fiscal crises early in the 1990s. The resultant deterioration in the quality and coverage of the education sector came at a time when the transition to a market economy called for the provision of different kinds of human resource skills. In 1993 a major education sector analysis review was conducted and on the basis of this review, the following six major areas of educational development and reform activities were identified:

* Preservation and enhancement of basic and secondary education
* Reform of higher education for national development
* Rationalization of vocational and technical education
* Provision of learning opportunities for out-of-school youth and adults
* Improvement of education management, and
* Increasing the efficiency of MOSTEC structures and operations.

1.6 This 1993 Sector Review was used as the basis for developing a Master Plan for the Mongolian education and human resource sector.1 Following extensive dialog among stakeholders and supported with further Asian Development Bank assistance, a Master Plan document was developed which identified priority areas and projects for each of the sub-sectors addressed. This Master Plan was subsequently used as the primary framework for donor funding.

1.7 Subsequently the Government confirmed that investments for improving productivity and efficiency throughout the sector would not be financially sustainable without significant reforms. It determined that any investment in the sector, however essential and desirable, must be closely linked to a program of policy and institutional reforms that ensured longer term sustainability of the education sector.

* 1. In 1996, the Asian Development Bank approved the Education Sector Development Program (ESDP).2 The ESDP comprises an integrated package of policy reforms, investment loan, and associated technical assistance intended to make the sector cost efficient, effective and responsive, to help the emerging economy. The policy program included measures to:
* Rationalize education structures and staffing
* Promote cost recovery schemes
* Support privatization and private provision of education, and
* Develop a comprehensive policy framework for technical education and vocational training.

1.9 The intention of the ESDP was to:

* Strengthen education management capabilities at central, local and institutional levels
* Improve co-ordination of management and academic development in higher education, and
* Upgrade quality and relevance in educational content at the upper secondary and higher education levels.

1.10 Associated technical assistance was initiated to strengthen the institutional capacity of the education sector to achieve the objectives of ESDP. To date, the Government has successfully implemented all key policy actions. Progress

on the implementation of the investment project and the associated technical assistance is considered substantial. The ESDP is scheduled to be completed in 2001.

## Project Methodology

1.11 The project to develop the education sector strategies for this report was a cooperative venture which drew upon the knowledge and expertise of a work group of six officers from MOSTEC, four senior advisers from MOSTEC and a team of five consultants. Members of the work group were appointed by the State Secretary of MOSTEC and were chosen because of their specialized knowledge of a particular sub-sector of education or their expertise in policy development. Senior officers from MOSTEC, who were also appointed by the State Secretary, acted in an advisory capacity. They assisted both the work group and the consultants. The consulting team comprised two international experts and three local experts.

1.12 Although it was never intended to compile a comprehensive strategic plan, the project procedure borrowed heavily on approaches generally used in strategic planning and has followed a similar path to the 1994 Master Plan. In particular, the project reviewed documentation of the Government of Mongolia which outlined both national and educational aims, policy and directions; identified changes since the Master Plan; investigated the perceived needs of each of the sub-sectors and gathered information about expectations of the future.

1.13 An extensive range of documents, which were classified into the following four groups, was examined:

* National overviews
* Law and policy documentation related to education
* Studies of particular education sectors, and
* Documentation from current and completed projects.

In addition, the statistics collected by MOSTEC and relevant statistics of the National Statistical Office of Mongolia were analyzed.

1.14 A further avenue of activity involved the conduct of interviews with a number of informed and expert personnel. This included some members of the parliament of Mongolia, officers from ministries other than MOSTEC, officers of MOSTEC, senior officers of Aimags close to Ulaanbaatar and personnel from donor and co-ordinating agencies.

1.15 Work group officers also facilitated a number of discussion groups. Participants in these groups included key administrators, principals, teachers and donor representatives. Their focus was to review sub-sector needs and to make proposals about future developments. These initiatives were further refined and developed into draft strategies, projects and activities by work group members in conjunction with the consulting team. The drafts were submitted to a national workshop on education sector strategies 2000–05, which was held on 10 June 1999, for further consideration and reactions.

1.16 The national workshop involved a wide range of participants including Members of the Parliament of Mongolia, officers of MOSTEC, officers from other Ministries, key educational administrators and teachers, representatives of donor organizations, the ADB Mission Leader and members of the consulting team. The purpose of the workshop was to:

* Provide participants with an overview of national economic and social perspectives
* Allow participants to consider future educational developments within this overall national framework
* Further refine proposed strategies for the future through discussion and debate, and
* Begin the task of setting priorities for activities within each of the main sectors of education.

1.17 Subsequently, the work group, the advisers and the consultants reviewed input from the workshop and prepared the strategies, projects and activities in final form for this report. At this stage in the process, broad estimates of the costs of implementing the strategies were compiled, and the viability of the strategies in terms of future resource availability and demands in terms of enrollment projections were also considered. Thus, the strategies finally accepted by MOSTEC for this report were the product of consideration of the Government’s current economic and social planning, a review of developments and needs since the 1993 Sector Review and an analysis of demographic circumstances.

1.18 Initial priorities for each sub-sector were set at the national workshop and finalized during the collaborative refinement of the strategies by the work group, advisers and consultants. In addition, all strategies were given a ranking on a ten point scale to show priorities across the entire sector. This will enable MOSTEC to establish an overall sequence for the development of projects, while at the same time having regard for the priorities considered appropriate within each sector. As each of these strategies is addressed by MOSTEC in the future it will be necessary to further analyze problems, issues and needs in much greater detail than has been done here. MOSTEC intends to develop project and operational plans to begin the process of implementing these strategies. An important part of this process will be the compilation of more detailed cost estimates for each of these operational plans.

## Scope of the Report

1.19 This report documents the main outcome of this process, which is a set of strategies and associated projects and activities developed by MOSTEC to steer reform of the education sector over the medium term from 2000 to 2005. In the next chapter the overall directions of Government are reviewed to indicate how education sector strategies complement national economic and social directions. A secondary outcome of the project, the updating of the 1993 sector analysis undertaken in 1993, is reported in Chapter 3. Chapter 4 describes in greater detail the process of formulating strategies and associated projects and activities and sets out details of each of the strategies grouped under sub-sector headings. Chapter 5 briefly outlines initial implementation tasks and discusses strategy costs and priorities. The sixth chapter provides concluding remarks. A summary of the strategies, projects and activities, and priorities is set out in Appendix 1.

CHAPTER 2 - DIRECTIONS OF GOVERNMENT

1. Further development of the education sector in Mongolia over the next five years will depend upon the country’s economy. Overall, two sets of interactions between economic development and development of the education sector are important. On the one hand, it will not be possible to financially support implementation of the strategies, projects and activities proposed in this report without continued economic growth. On the other hand, the development of the human resource potential of the Mongolian people through the contributions of its education and human resource sector is an essential element of future prosperity. During development of the priorities, strategies, projects and activities documented in this report, MOSTEC has taken care to ensure that proposed reforms are consistent with the overall economic and social plans of the Government.

## *The Mongolia Action Plan*

1. In 1998, the Government of Mongolia released a national strategy document *The Mongolia Action Plan for the 21st Century* or *MAP 21*. The document, in development for two years, is comprehensive and visionary. It is, “...based on a modern holistic approach to planning and ‘bottom up’ principles and the goals for the nation to step into the new century through incorporation of the public interests and its vision of the future. The country’s strategy is designed for environmentally friendly, economically stable, socially wealthy development of all the participants in any of the development activities based on the principles of sustainable development”.3
2. *MAP 21* recognizes the importance of the education sector. It states the following objectives for education:

* To make education a universally popular necessity for everybody, and establish a formal and non-formal education system including viable teaching
* To develop and determine training content and standards for every level of education and set up a new monitoring system for education, which consists of highly qualified specialists as well as representatives from the public
* To establish a new system of technical education and vocational training to develop human resources able to provide sustainable development for Mongolia, including a high rate of employment that satisfies the needs and demands of the labour market, and
* To promote educational activities about environmental issues and efficiency of resource usage, and ecology at all level in schools.

1. The documentation suggests that considerable effort has gone into the development of *MAP 21*. This has undoubtedly given direction to economic and social development, but it appears to have been overshadowed by political changes in Government since 1998, which have been a distraction for implementation of this ambitious plan. Nevertheless, a number of the strategies contained in this report reflect these *MAP 21* objectives.

## *Medium Term Strategy*

1. During the first half of 1999 an effort was made to develop a Medium Term Strategy for Mongolia. In April 1999 a National Workshop was held on this topic and a number of papers were presented by key Government officials. In June 1999 the Government of Mongolia released its *Medium Term Economic and Social Development Strategy, 1999–2002*. The document contains two sections covering background information and a development strategy. The major aim of the development strategy is to, “…accelerate economic growth in order to increase the living standards of the population”.4 One of the key components is the human development and social sector development strategy. As economic growth accelerates, the development of Mongolian human resources will become one of the vital medium-term goals of the nation.
2. The strategy states that, “The development of a new education system that can successfully meet the needs of the population in education programs and services is one of the Government’s priority tasks. The Government intends to accelerate ongoing reforms in the educational system, and improve the content of training programs and materials”. Furthermore, it states, “Greater attention will be devoted to the development of non-formal education, distance learning programs and to the completion of ongoing rationalization and productivity improvement measures, including diversification of services delivery and decentralization of education management. The Government also intends to improve education quality by gradually upgrading priority facilities and equipment”.5 Increased numbers will be sent overseas to study advanced courses.
3. The strategy also includes the promotion of science and technology, especially applied sciences. It intends to promote the development of a unified information network to better equip citizens to effectively participate in the market economy. 6
4. The strategy document recognizes that the two principal challenges of the social sector are the need to provide high quality education and health services as efficiently as possible. In this context the Government’s objective is reform of the social sectors with the aim of providing social services on an independent basis. A draft law on the privatization of social services is being prepared. “The adoption of this law will create the legal basis for privatization of state-owned higher education institutions, some hospitals, schools and child care facilities, museums, libraries TV and radio networks and newspapers.” 7
5. In general, the *Medium Term Strategy* places emphasis on investments in economic restructuring and infrastructure development, while at the same time recognizing the importance of human resource development. It also gives the impression that there is greater room for privatization of social sector activities. Similar sentiments were reflected in an address to the National Workshop on Education Sector Strategies 2000–05 on 10 June 1999.8 Attention was given by MOSTEC to the general directions of the *Medium Term Strategy* to ensure that the education sector strategies set out in Chapter 4 of this report are consistent with it. MOSTEC also recognizes that further privatization of the education sector will intensify the need to prepare and maintain up to date plans and clear directions for the education sector.

## *Public Sector Reform*

1. In its overview and summary of the reform program the *Medium Term Strategy* states that the Government intends to continue with structural reforms in the public sector.9 Documents from the Medium Term Strategy Conference refer to the implementation of contract relationships between use of resources and outputs purchased. This would be based on adoption of a draft Public Sector Finance and Management Act, which was submitted to Parliament in November 1997. A further suggestion included in the *Medium Term Strategy*, that is associated with this public sector reform, is to develop policy to ensure that adequate remuneration applies in the public service to attract and retain talented people.10 As serious concerns have been expressed about the living standards of teachers, the intention of this strategy to address problems of public sector remuneration will be welcome in the education sector.
2. Implementation of these reforms, which contain such significant changes, could have a significant impact on the operations of MOSTEC. It recognizes that it may have to investigate the impact upon the operation of schools, and if necessary, develop appropriate policy. Contractual arrangements could create opportunities for further decentralization of responsibilities in accordance with the Government’s policy, legal resolutions and directives. However, MOSTEC is also aware of the complexities and effort that will be required to implement such a significant change in operational arrangements.

## *Finance for Education*

1. The economy has expanded for five consecutive years. Real growth in the Gross Domestic Product (GDP) in 1998 was 3.48% and *the Medium Term Strategy* projects real GDP rates of growth of 3.5% for 1999, increasing to as much as 6% by 2002.11 However, despite these favorable economic indications, budget allocations in much of the social sector, including education, are decreasing constantly in real terms.
2. On the expenditure side of the budget, the Government’s objective is to reduce total expenditures and net lending by 1% of GDP. Current Government expenditures are expected to decline from 37.06% of GDP in 1998 to a figure between 32% and 34% during 2000–2002. Capital expenditure will also be reduced to about 10% of GDP from a figure of 11.7% in 1998. These reductions will fall largely on domestically financed capital expenditure and the purchase of goods and services but the government will give priority to wages, pensions and key social expenditures. It plans to hold wages constant relative to the GNP. As far as the education sector is concerned, expenditure as a percentage of GDP has remained relatively constant over the past four years at around 5.5%. These trends make it difficult to predict future Government funding for the education sector because, on the one hand, overall reductions in Government expenditures are proposed, but on the other, the proportion of GDP for education has historically remained about the same. An overall implication of these financial trends is that the education sector is unlikely to experience significant growth in funding. In this case, greater gains are likely to be achieved for MOSTEC by assigning higher priorities to less resource intensive strategies.
3. The education budget is regulated by:

* The Mongolian Budget Law with final amendments approved in 1993
* The Ministry of Finance, National Development Board resolution from 1 July 1995, *General Procedure for planning revenues and expenditure of government budget organizations*
* Minister for Finance Decree 14 from 1 November 1997, *Budget financing procedure*, and
* The government resolution 106 from 1998, *The procedure for assessing the budget expenditure spending*.

2.15 In 1998 expenditure on education from the Government budget was 47,801.5 million tugrics, or 14.7% of overall budget expenditure. It has remained close to this proportion since 1996. The Government budget is divided into two parts, the state central budget and the local government budget. The state central budget finances higher education institutions, some technical and vocational training schools, the state training fund and centralized measures**.** The centralized measures include:

* Secondary school textbook publishing and printing
* Travel fairs for students from remote areas
* Stipends (subsistence allowances)
* Support for students studying abroad
* International competitions in natural and humanitarian sciences, and
* Final examination costs.

The local government budget finances preschools, primary and secondary schools and some technical and vocational training schools.

2.16 Over the past four years the state central budget has increased as a proportion of the overall education budget. This is evident in Figure 1. The higher proportion allocated to the central budget for education is due to substantial increases in expenditure from the state training fund and centralized measures. The state training fund provides student loans, assistance and subsistence, which have been increasing, but measures have been taken to curb this expenditure growth. The increase in centralized measures is due to curriculum reform and the preparation and production of textbooks in particular. The extent of the increase is shown in Figure 2. At a time when Government policy is to decentralize operations to local areas and educational institutions, it is apparent that the impact of other reforms is increasing the proportion of the budget which has to be managed centrally.

**Figure1: Percentage of Total Education Budget from Central**

**and Local Budgets, 1995–98.**



Note: Figures for 1997 and 1998 are estimates

**Figure 2: Percentage of Centralized Education Measures and**

### State Training Fund Allocated from Central Budget,

**1995–98**

2.17 The proportion of Government expenditures on each sub-sector in 1998 is shown in Figure 3. Per student expenditures are shown in Figure 4.

**Figure 3. Percentage of Education Budget Allocated to**

**Sub-Sectors, 1998.**



**Figure 4. Public Expenditure Per Student by Sub-Sectors, 1998**.



2.18 Taken in isolation, the financial distributions reflected in these figures provide limited guidance about current needs or the nature of future strategies. Nevertheless, during the process of reviewing needs, the impact of financial allocations in some sub-sectors has influenced the development of strategies.

# Chapter 3 - Mongolian Education Sector Reform

1. During the summer and fall of 1993, the Asian Development Bank funded a comprehensive Sector Review and Master Plan process designed to serve as the foundation for supporting assistance to the education and human resource sector in Mongolia as it moved through the difficult transition from a command to a market economy. The two documents that resulted from this work *Mongolia Education and Human Resource Sector Review, 1993*, and *Mongolia Education and Human Resource Master Plan, 1994*, have guided development in the education and human resource sector since that time. The 1993 Sector Review described the educational system in place at that time and identified the areas of specific pressing concern that needed to be addressed. A comprehensive consultation and discussion process conducted a few months later in the year, after there had been ample time to consider the recommendations made in the Sector Review, led to the development of the Master Plan which has been used to guide reform of the education sector in the intervening period.
2. This chapter has three main sections. The first contains a summary assessment of the implementation of the 1994 Master Plan in each of the six areas that were identified as being of highest priority for reform and development. It includes brief descriptions of the types of projects that have occurred and the donors that have supported them as well as the various types of legislation and Government policy documents that have been passed to provide the legal basis for educational reform in Mongolia. Based mainly on statistics collected by MOSTEC, the second section describes the current state of the Mongolian educational system, emphasizing the emerging patterns and changes since the 1993 Sector Review.This section indicates issues that should be addressed in developing strategies for each of the sub-sectors during the period 2000–2005. The third section sets out enrollment projections through to the year 2005.

Master Plan Reforms

1. Six areas were identified for action in the 1994 Master Plan:

* Enhance basic and general education
* Reform higher education for national development purposes
* Rationalize systems for vocational training
* Provide learning opportunities of out-of-school children and youth
* Improve educational management, and
* Increase efficiency of Ministry of Science and Education structure and operations.

1. Appendix 3 summarizes the interventions that have occurred so far and those currently underway. The largest coordinated effort, which spans the entire spectrum of areas listed above, is the ESDP that is funded by the Asian Development Bank. Included under this effort are a technical assistance project concerned with institutional strengthening of the education sector and loans 1507 and 1508. These projects have provided both technical assistance and investment funds to carry out the reform initiatives derived from the 1994 Master Plan*.* A mid-term assessment carried out by an ADB mission and a benefit monitoring activity to be completed in the fall of 1999 both indicate that most of the various activities under the ESDP have met their intended goals.
2. In addition to donor assistance and activity, Mongolia has benefited from programs of support for the long and short term training of educators and educational officials. Before the transition, many Mongolians studied in Russia and the countries of Eastern Europe. Since 1993, other sources have included the German Academic Exchange Service (DAAD), American programs such as Fulbright and IREX, the Australian Government, the Japanese Government, and the Soros Foundation. The country has been in the unique position of being able to draw from both Asian and European sources for this type of support.
3. In addition to ESDP, there have also been a variety of projects funded by individual donors such as DANIDA; UNESCO; UNICEF; the Mongolian Foundation for Open Society (MFOS: Soros Foundation); the Australian Agency for International Development (AUSAID); the European Union’s TEMPUS and TACIS programs; the Korean International Cooperation Agency; and the Save the Children Foundation (UK). There are also new agreements with the German Government in the area of technical education and vocational education, and with the Japanese International Cooperation Agency (JICA) for renovation of school buildings in Ulaanbaatar that have recently been negotiated.
4. In 1996, the Ministry of Science and Education was restructured through a merger with the Ministry of Culture, thus becoming the Ministry of Science, Technology, Education and Culture. Under a national public sector management reorganization funded by the UNDP, the current structure of MOSTEC was established in 1997.

## *Legal Basis for the Education Sector*

1. The Parliament of Mongolia (Great Khural) passed a comprehensive set of laws governing the entire education sector in 1995. This legislation included a set of general principles underpinning education in the country as well as specific laws for education in general, and primary education and higher education, in particular. These laws were amended in 1998. The 1994 Master Plan was an important resource used in the development and amending of these laws. In fact, the initial ADB funding under the Master Plan was not implemented until after the passage of the 1995 Education Laws.
2. In addition to the laws, several Government resolutions have also been issued that establish general policy directions for the various sub-sectors of education. These policy and program documents were developed as part of the educational reform process that has occurred since the 1994 Master Plan. They tend to present overall objectives for reform in each of the areas covered and to mandate the establishment of national bodies to oversee their implementation. Members of the MOSTEC work group, in collaboration with the consulting team, referenced relevant sections of laws and resolutions during the strategy development process for the 2000–2005 period. Associations between these documents and the strategies are reflected in Chapter 4. Relevant documentation includes:

* *National Program on Pre-School Strengthening*, Government Resolution No. 46, 1995
* *Main Directive of the Government of Mongolia for Reform of the Education Sector in 1997–2005*, Government Resolution No. 89, 1997
* *National Non-formal Education Development Program, 1997–2004*
* *National Program for Technical Education and Vocational Training (TEVT)*, Government Resolution No. 41, 1998
* *National Policy on Science and Technology*, Government Resolution No. 55, 1998, and
* Draft *National Program on Distance Education*, June 1999.

Current Situation of the Education Sector in Mongolia

3.10 As indicated in the previous overview of the directions of Government, education continues to be a central priority in Mongolia. Despite the problems of coping with an economic transition from a command to a market economy, Mongolia has maintained an educational system which reaches most of its widely dispersed population and boasts one of the highest literacy rates of any country in the world (more than 90%). In addition to presenting a description of the current situation in the Mongolian education sector, trend data for various periods show how the education sector has changed over time, both since the 1993 ADB Sector Review and over the longer period under the pre-transition conditions. These longer term influences continue to have important consequences for reform. MOSTEC has made use of is own statistical collections, as well as data and information from the National Statistical Office and the Ministry of Finance, in the following assessment of the current situation.

3.11 The Mongolian education system comprises six sub-sectors. There is a preschool and kindergarten sub-sector. This is followed by 4 years of primary education and 4 years of lower secondary education. Compulsory education ends after Grade 8. Upper secondary education is for 2 years. Thus the primary and secondary sub-sector comprises 10 years. The technical education and vocational training sub-sector comprises specialized upper secondary schools as well as post-secondary diploma programs housed in higher education institutions. Higher education, and science and technology, make up two separate sub-sectors. In addition, there is a non-formal and distance education sub-sector. Appendix 4 contains a chart showing the structure of the system.

3.12 Table 1 provides a summary of several basic indicators of the education sector in Mongolia over the past four years. Basic annual expenditures for education have continued at about the same rate, both in terms of the proportion of the State Expenditure Budget and of Gross Domestic Product (GDP). These amounts do, however, represent a reduction from the pre-transition conditions in 1990 when 11.5% and 17.6% of the estimated GDP and State Expenditure Budget, respectively, were allocated to education. While the current proportion of GDP spent on education is about the same as in many Western European countries and the United States, there is continuing pressure on the Government of Mongolia to reduce social sector spending in favor of increased privatization and a re-allocation of public funds to pressing infrastructure needs. There has also been a substantial increase in investment in the education sector, including building renovation, equipment, and textbook publishing, most of which is being financed by an Asian Development Bank loan that is part of the ESDP.

3.13 Higher education has experienced the most rapid enrollment expansion of any level of education in Mongolia over the past four years. While enrollment in private higher education institutions has more than doubled over the past four years, there have also been large enrollment increases in public sector institutions. In 1996 and 1997, half of the 16–17 year-olds were enrolled in school.12 Based on its statistical collections, MOSTEC estimates that 40% of the secondary school completers continue into postsecondary education, a cohort enrollment rate of about 20% of Mongolian 18–22 year-olds.

3.14 Enrollments at all other levels of Mongolian education except technical education and vocational training (TEVT) have also been increasing, but at much slower rates. These enrollment increases have been accomplished without adding new buildings. Through re-structuring and more efficient use of existing buildings, the number of primary and secondary school buildings in daily use has actually been reduced. However, the capacity of existing buildings is a concern to MOSTEC as they provide only 62.6% of the required places. Consequently, in Ulaanbaatar and 18 other aimags there are secondary schools which operate on 3 shifts per day.

3.15 Table 2 shows the 20-year patterns of enrollment change, going back to the 1980–81 school year. This table suggests that there were some changes in enrollment patterns around the time of the transition to a democratic government and the introduction of a market economy, beginning in the late 1980’s and extending into the early 1990’s. Most significant of these shifts was the marked drop in the numbers of students going into both upper secondary and postsecondary diploma programs in technical education and vocational training. This reflected the growing uncertainty about what types of jobs would be available under the new market economy. Under the old command economy, with the Government as the sole employer, it was possible to design technical education and vocational training programs that prepared people for jobs in Government and in state-owned enterprises. These jobs were easily identifiable and the central manpower planning agency had the authority to allocate spaces in upper secondary and higher education on the basis of easily developed employment projections. After the transition to a market economy, international development banks and other agencies strongly encouraged the privatization of state-owned enterprises and the elimination of centrally determined manpower planning approaches. Of course, as state-owned enterprises were privatized or closed, the capacity of a central manpower planning agency to forecast accurately manpower needs diminished.

3.16 Table 3 shows the gender composition of enrollment by level for the past two years. As can be seen from this table, female students outnumber their male counterparts at all levels of education, with the female advantage increasing as the level increases. Mongolia is among a handful of nations of the world in having females outnumber males by almost two to one in postsecondary degree programs. Its pattern of educational opportunity for women is just the reverse of what is found in virtually all other developing countries and is a remarkable anomaly for Asia.

**TABLE 1. BASIC INDICATORS FOR THE EDUCATION SECTOR,**

# 1995–98

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Indicator | | 1995–96 | 1996–97 | 1997–98 | 1998–99 |
| 1. | State Expenditure Budget for education  sector (million tugrugs, current prices) | 23525.3 | 31188.4 | 42161.0 | 47815.5 |
| 2. | Education sector as percentage of total  State Expenditure Budget | 15.8 | 14.8 | 14.7 | 14.7 |
| Education sector as percentage of GDP | 5.5 | 5.3 | 5.6 | 5.5 |
| 3. | Percentage of students in public and private schools |  |  |  |  |
|  | - Public schools | 78.0 | 74.0 | 72.0 | 70.8 |
|  | - Private schools | 22.0 | 26.0 | 28.0 | 29.2 |
| 4. | Investment (million tugrugs) |  |  |  |  |
|  | - in building reconstruction and  vocational and technical schools | 64.3 | 74.5 | 167.0 | 205.0 |
|  | - in equipment and training facilities | 20.0 | 32.5 | 97.0 | 135.0 |
| 5. | Number of public universities,  institutes and colleges | 29 | 29 | 29 | 33 |
|  | - number of students in all public  postsecondary programs \* | 29167 | 31391 | 35229 | 46185 |
|  | - numbers of teachers | 2693 | 2683 | 2799 | 3261 |
| 6. | Number of private institutes and  Colleges | 41 | 51 | 57 | 71 |
|  | - number of students in all private  postsecondary programs \* | 8930 | 11861 | 14405 | 19087 |
|  | - number of teachers | 383 | 522 | 617 | 925 |
| 7. | Technical and vocational secondary schools | 34 | 33 | 38 | 38 |
|  | - number of students | 7987 | 11308 | 12320 | 11650 |
|  | - number of teachers | 495 | 767 | 742 | 656 |
| 8. | Number of primary and secondary schools | 664 | 658 | 645 | 630 |
|  | - primary schools  (Grades 1–4) | 83 | 79 | 89 | 96 |
|  | - lower secondary schools  (Grades 1–8) | 232 | 208 | 219 | 214 |
|  | - general secondary schools  (Grades 1–10) | 349 | 371 | 337 | 320 |
|  | Number of students in primary and  secondary schools | 403847 | 418293 | 435061 | 447121 |
|  | Number of teachers in primary and  secondary schools | 19411 | 20090 | 18511 | 18118 |
| 9. | Percentage of drop-outs | 4.29 | 3.53 | 3.92 | 2.50 |
| 10. | Number of kindergartens | 660 | 667 | 660 | 658 |
|  | - number of children in kindergartens | 64086 | 67972 | 70035 | 73955 |
|  | - number of teachers in kindergartens | 2004 | 2998 | 2985 | 3015 |

Note: \* Data combine enrollments in postsecondary vocational (diploma), bachelors

degree, and postgraduate degree programs.

Sources: *Analysis of 1998 Education Sector Statistical Data.* Ulaanbaatar: Ministry of Science, Technology and Culture, 1999, Table 1.1; *Mongolian Statistical Yearbook, 1998.* Ulaanbaatar: National Statistical Office of Mongolia, 1999, Tables 5.1 and 8.3.

# TABLE 2. GROWTH OF ENROLLMENT BY LEVEL SINCE 1980–81

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Level | *General Primary and Secondary Education*  *(Grades 1–10)* | | *Technical and Vocational Education*  *(Grades 9–10)* | | *Specialized Vocational Education*  *(Post-secondary Diploma)* | | *Higher Education*  *(Bachelors or Equivalent Degree Only)* | |
| **Academic Year** | **Total** | Growth Rate (From Previous Year) | **Total** | Growth Rate (From Previous Year) | **Total** | Growth Rate (From Previous Year) | **Total** | Growth Rate (From Previous Year) |
| 1980/81 | 372618 | - | 18651 | - | 17391 | - | 17152 | - |
| 1981/82 | 379444 | 1.83 | 19464 | 4.36 | 18518 | 6.48 | 17731 | 3.38 |
| 1982/83 | 387997 | 2.25 | 19409 | -0.28 | 19492 | 5.26 | 18705 | 5.49 |
| 1983/84 | 397991 | 2.58 | 19458 | 0.25 | 20063 | 2.93 | 19692 | 5.28 |
| 1984/85 | 406283 | 2.08 | 21553 | 10.77 | 20426 | 1.81 | 19152 | -2.74 |
| 1985/86 | 415726 | 2.32 | 23236 | 7.81 | 21612 | 5.81 | 18487 | -3.47 |
| 1986/87 | 424110 | 2.02 | 25036 | 7.75 | 21714 | 0.47 | 17358 | -6.11 |
| 1987/88 | 430540 | 1.52 | 28269 | 12.91 | 22336 | 2.86 | 16482 | -5.05 |
| 1988/89 | 438152 | 1.77 | 30574 | 8.15 | 21248 | -4.87 | 15074 | -8.54 |
| 1989/90 | 446665 | 1.94 | 31194 | 2.03 | 19223 | -9.53 | 14101 | -6.45 |
| 1990/91 | 440986 | -1.27 | 26431 | -15.27 | 17609 | -8.40 | 13825 | -1.96 |
| 1991/92 | 411696 | -6.64 | 17961 | -32.05 | 14986 | -14.90 | 13223 | -4.35 |
| 1992/93 | 384069 | -6.71 | 11491 | -36.02 | 8116 | -45.84 | 16917 | 27.94 |
| 1993/94 | 370302 | -3.58 | 8317 | -27.62 | 5566 | -31.42 | 22135 | 30.84 |
| 1994/95 | 381204 | 2.94 | 7555 | -9.16 | 5849 | 5.08 | 26490 | 19.67 |
| 1995/96 | 403847 | 5.94 | 7987 | 5.72 | 5584 | -4.53 | 32241 | 21.71 |
| 1996/97 | 418293 | 3.58 | 11308 | 41.58 | 3730 | -33.20 | 39157 | 21.45 |
| 1997/98 | 435061 | 4.01 | 12320 | 8.95 | 4426 | 18.66 | 44864 | 14.57 |
| 1998/99 | 447121 | 2.77 | 11650 | -5.44 | 4094 | -7.50 | 59444 | 32.50 |

Source: Ministry of Science, Education, Technology and Culture, Mongolia.

### TABLE 3. ENROLLMENT BY LEVEL, TYPE OF CONTROL AND GENDER, 1997–98 AND 1998–99

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Level | 1997–98 | | | | | | 1998–99 | | | | | |
| Public | | | Private | | | Public | | | Private | | |
| Schools | Total | % | Schools | Total | % | Schools | Total | % | Schools | Total | % |
|  | Enrolled | Female |  | Enrolled | Female |  | Enrolled | Female |  | Enrolled | Female |
| General Primary and Secondary Schools | 628 | 434310 | 53.3 | 17 | 751 | 53.0 | 609 | 445851 | 52.5 | 21 | 1270 | 51.6 |
| [Workers’ Programs – Evening] | [87] | 4018 | 47.5 |  |  |  | [107] | 5287 | 47.1 |  |  |  |
| Technical and Vocational Schools | 34 | 11990 | 51.5 | 4 | 330 | 67.3 | 34 | 11461 | 55.3 | 4 | 189 | 71.4 |
| Higher Education Institutions | 29 |  |  | 57 |  |  | 33 |  |  | 71 |  |  |
| Postsecondary Technical (Diploma) |  | 4011 | 77.9 |  | 415 | 27.0 |  | 3764 | 71.4 |  | 330 | 53.9 |
| Bachelors Degree |  | 31218 | 66.5 |  | 13646 | 71.5 |  | 40696 | 61.9 |  | 18748 | 70.4 |
| Postgraduate Degrees (MA, Ph.D.) |  | 1657 | 61.9 |  | 14 | 85.7 |  | 1725 | 64.1 |  | 9 | 77.8 |

Source: Ministry of Science, Technology, Education and Culture, Mongolia.

**TABLE 4. NEW ENTRANTS BY LEVEL, TYPE OF CONTROL, AND**

# GENDER, 1997–98 AND 1998–99

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Level of Educational Institution | 1997–98 | | | | 1998–99 | | | |
| Public Schools | | Private Schools | | Public Schools | | Private Schools | |
| Total | %  Female | Total | %  Female | Total | %  Female | Total | %  Female |
| To Grade 1 of General Primary and | 67063 | 49.9 | 417 | 52.8 | 69284 | 49.2 | 665 | 49.6 |
| Secondary Schools |  |  |  |  |  |  |  |  |
| Technical and Vocational Schools | 6701 | 52.7 | 205 | 67.3 | 4804 | 59.6 | 81 | 82.7 |
| Higher Education Institutions |  |  |  |  |  |  |  |  |
| Postsecondary Technical (Diploma) | 1566 | 77.1 | 151 | 41.7 | 1284 | 63.5 | 201 | 51.2 |
| Bachelors Degree | 9303 | 66.3 | 5551 | 70.4 | 14057 | 58.6 | 8547 | 68.4 |
| Postgraduate Degrees (MA, Ph.D.) | 851 | 62.2 | 5 | 80.0 | 724 | 67.0 | 9 | 77.8 |

Source: Ministry of Science, Technology, Education and Culture, Mongolia.

# TABLE 5. TEACHERS BY LEVEL, TYPE OF CONTROL, AND GENDER,

# 1997–98 AND 1998–99

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Level of Educational Institution | 1997–98 | | | | 1998–99 | | | |
| Public Schools | | Private Schools | | Public Schools | | Private Schools | |
| Total | %  Female | Total | %  Female | Total | %  Female | Total | %  Female |
| Kindergartens | 2985 | 99.3 |  |  | 3015 | 99.7 |  |  |
| General Primary and Secondary  Schools | 18469 | 78.4 | 42 | 85.7 | 18017 | 79.5 | 101 | 88.1 |
| Higher Education Institutions  (Including TEVT) | 3481 | 52.9 | 617 | 56.7 | 3904 | 50.4 | 938 | 57.4 |

Source: Ministry of Science, Technology, Education and Culture, Mongolia.

3.17 The data shown in Table 4 for the gender composition of new entrants to schools suggests a continuing imbalance, with females again outnumbering males in greater numbers as the level increases. Finally, Table 5 shows that this gender imbalance favoring females is also reflected in the teaching staff at each level of education. Unlike enrollment, however, the female advantage among teachers decreases as the educational level increases.

3.18 In the following sections, each of the levels of education is discussed in more detail. The emphasis is on explaining patterns and trends as well as suggesting their implications for continued development of the education sector. Results from the implementation of the 1994 Master Plan for the Mongolian education and human resource sector that are reflected in changes over the period are also identified.

Preschool and Kindergarten

3.19 Enrollment in kindergartens dropped from 97,200 in 1990 to 64,100 in 1995, but has been increasing steadily since then. In 1998, just over one fourth (28.3%) of all Mongolian children attended kindergarten. Enrollment in nursery schools has been reduced drastically, dropping from 441 schools with 21,600 children in 1990 to only 34 nursery schools with 1,600 children in 1998.13 As schools at this level are most accessible to people living in urban areas, the greatest coverage is in Ulaanbaatar. It is the intention of the Government of Mongolia to increase nursery school and kindergarten participation rates substantially by the year 2005, from 5.4% to 30% and from 28.3% to 45%, respectively. MOSTEC will undertake careful planning for the deployment of necessary resources, both physical facilities and training of additional teachers, to attain such an ambitious goal. It is anticipated that much of the nursery school expansion will be in the non-formal sub-sector, with a significant increase of private provision in urban areas, especially Ulaanbaatar.

Primary and Secondary Education

3.20 Table 6 shows the enrollment patterns by aimag since 1995–96. As would be expected the figures reflect the population distribution in the country. Table 7 shows the net enrollment rate of children between the ages of 8 and15, which is the normal age range for the 8 years of compulsory education, by aimag. These data indicate that enrollment rates are lowest in the most remote aimags and highest in the largest cities. Not surprisingly, the aimags with the highest enrollments also have the largest numbers of dropouts. However, as can also be seen in Table 8, the number of dropouts in 1997–98 decreased by about 30% from the previous year (according to Table 1, the annual dropout rate decreased from 3.9% to 2.5%). Each of the areas with large numbers of dropouts has its own particular problems in trying to reach children who are not in school, ranging from the street children of Ulaanbaatar to nomadic herdsmen's children in remote aimags.

3.21 The distribution of personnel working in primary and secondary schools is shown in Table 9. As part of the investment component of the Asian Development Bank’s Education Sector Development Program, financial incentives were offered to teachers working in regions and/or fields in which there was excess capacity willing to leave their jobs. This was part of a larger effort to improve efficiency and cost-effectiveness of the Mongolian educational system. Over the two years shown in Table 11, the number of teachers declined by almost 400 or 2.1%. However, the overall number of personnel employed in Mongolian primary and secondary schools actually increased by 300 during the same period because the relatively more highly paid teachers were replaced by stokers, electricians, and doorkeepers. MOSTEC has identified two reasons for the increases in these particular categories of personnel. First, dormitories were re-opened in several aimags, thereby necessitating employment of doorkeepers and other security personnel. Second, as part of the rationalization of service provision under increased decentralization of Government functions, central heating plants in many aimags were placed under the responsibility of the largest user, the local education authority. This required the hiring of additional stokers.

**TABLE 6. ENROLLMENT OF PRIMARY AND SECONDARY SCHOOLS BY AIMAG**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Academic Year* | 1995–96 | | 1996–97 | | 1997–98 | | 1998–99 | |
| Year | 1995 | | 1996 | | 1997 | | 1998 | |
| Totals | Total | Female | Total | Female | Total | Female | Total | Female |
|  | 403847 | 218384 | 418293 | 224601 | 435061 | 232099 | 447121 | 234913 |
| Arhangai | 15359 | 8461 | 15988 | 8684 | 16715 | 9075 | 17210 | 9255 |
| Bayan-Ulgyi | 13181 | 6867 | 13988 | 7316 | 14176 | 7339 | 15493 | 7964 |
| Bayankhongor | 13502 | 7402 | 14264 | 7677 | 14946 | 7951 | 15406 | 8107 |
| Bulgan | 10973 | 6087 | 11409 | 6244 | 11654 | 6242 | 11703 | 6183 |
| Gobi-Altai | 11371 | 6213 | 11799 | 6324 | 12074 | 6396 | 12063 | 6281 |
| Dornogobi | 9088 | 4940 | 9154 | 4953 | 9474 | 5058 | 9581 | 5111 |
| Dornod | 16114 | 8865 | 15736 | 8588 | 15764 | 8536 | 15886 | 8417 |
| Dundgobi | 8902 | 4961 | 9001 | 5009 | 9121 | 5026 | 9195 | 5004 |
| Zavkhan | 16020 | 8653 | 16297 | 8710 | 16467 | 8789 | 16078 | 8493 |
| Uvurkhangai | 16185 | 9112 | 16717 | 9323 | 17638 | 9716 | 18511 | 10024 |
| Umnugobi | 7995 | 4448 | 8208 | 4473 | 8787 | 4773 | 8844 | 4725 |
| Sukhbaatar | 9946 | 5355 | 10111 | 5451 | 10318 | 5619 | 10298 | 5441 |
| Selenge | 20233 | 10965 | 20764 | 11231 | 21622 | 11482 | 21920 | 11402 |
| Tuv | 18692 | 10165 | 18798 | 10188 | 19141 | 10358 | 19278 | 10154 |
| Uvs | 15659 | 8679 | 16321 | 8895 | 15694 | 8460 | 16363 | 8724 |
| Khovd | 14979 | 8175 | 15766 | 8479 | 16718 | 8868 | 16534 | 8656 |
| Khuvsgul | 18334 | 10122 | 19709 | 10692 | 20111 | 11004 | 20710 | 11185 |
| Khentyi | 12861 | 7070 | 13461 | 7316 | 13792 | 7465 | 13924 | 7401 |
| Darkhan-Uul | 16619 | 8901 | 17442 | 9196 | 17773 | 9429 | 18537 | 9611 |
| Ulaanbaatar | 119271 | 63023 | 123896 | 65374 | 132228 | 69406 | 135995 | 71006 |
| Orkhon | 13493 | 7136 | 14336 | 7635 | 15715 | 8309 | 16808 | 8776 |
| Gobi-Sumber | 2681 | 1474 | 2771 | 1517 | 2859 | 1573 | 2831 | 1496 |
| Others \* | 2389 | 1310 | 2357 | 1326 | 2274 | 1225 | 3953 | 1497 |

\* Others include MOSTEC’s schools.

Source: Ministry of Science, Technology, Education and Culture, Mongolia.

# TABLE 7. NET ENROLLMENT RATE IN BASIC EDUCATION BY AIMAG, 1998–99

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Aimag | Number of Children (age 8–15) | | Enrollment (age 8–15) | | Net Enrollment Rate | |
| Total | Female | Total | Female | Total | Female |
| 471740 | 236133 | 410278 | 213156 | 87.0 | 90.3 |
| Arkhangai | 20585 | 10249 | 16057 | 8530 | 78.0 | 83.2 |
| Bayan-Ulgyi | 18935 | 9344 | 13659 | 6940 | 72.1 | 74.3 |
| Bayankhongor | 19333 | 9566 | 14537 | 7556 | 75.2 | 79.0 |
| Bulgan | 12906 | 6474 | 10936 | 5696 | 84.7 | 88.0 |
| Gobi-Altai | 14030 | 7248 | 11409 | 5855 | 81.3 | 80.8 |
| Dornogobi | 10626 | 5363 | 8941 | 4724 | 84.1 | 88.1 |
| Dornod | 17164 | 8508 | 14662 | 7660 | 85.4 | 90.0 |
| Dundgobi | 11697 | 5848 | 8716 | 4710 | 74.5 | 80.5 |
| Zavkhan | 20322 | 10607 | 14876 | 7750 | 73.2 | 73.1 |
| Uvurkhangai | 23936 | 11924 | 17370 | 9324 | 72.6 | 78.2 |
| Umnugobi | 10294 | 5132 | 8341 | 4422 | 81.0 | 86.2 |
| Sukhbaatar | 12640 | 6155 | 9714 | 5075 | 76.9 | 82.5 |
| Selenge | 22286 | 11166 | 19995 | 10284 | 89.7 | 92.1 |
| Tuv | 22357 | 11142 | 17996 | 9353 | 80.5 | 83.9 |
| Uvs | 20423 | 10050 | 15356 | 8136 | 75.2 | 81.0 |
| Khovd | 18604 | 9399 | 15374 | 7940 | 82.6 | 84.5 |
| Khuvsgul | 25142 | 12612 | 19052 | 10121 | 75.8 | 80.2 |
| Khentyi | 14924 | 7406 | 12726 | 6677 | 85.3 | 90.2 |
| Darkhan-Uul | 17309 | 8637 | 16474 | 8429 | 95.2 | 97.6 |
| Ulaanbaatar | 120469 | 60446 | 126283 | 64725 | 104.8 | 107.1 |
| Orkhon | 15006 | 7475 | 15234 | 7900 | 101.5 | 105.7 |
| Gobi-Sumber | 2752 | 1382 | 2570 | 1349 | 93.4 | 97.6 |

Source: Ministry of Science, Technology, Education and Culture, Mongolia.

# TABLE 8. PRIMARY AND SECONDARY SCHOOL DROPOUT BY AIMAG, 1997–98

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Aimags and Cities | Students  Attending School in October, 1997 | Drop-outs:  Students No Longer Attending in October, 1998 | Female Drop- outs | Percentage of All Drop-outs Who are Female | Drop-outs in Previous Year | Increase (+)  or  Decrease (-) of Drop-outs |
| Ulaanbaatar | 134502 | 889 | 494 | 55.6 | 1035 | -146 |
| Gobi-Sumber | 2859 | 25 | 8 | 32.0 | 86 | -61 |
| Darkhan | 17773 | 210 | 128 | 61.0 | 1000 | -790 |
| Zavkhan | 16467 | 211 | 61 | 28.9 | 594 | -383 |
| Dundgobi | 9121 | 144 | 56 | 38.9 | 486 | -342 |
| Bulgan | 11654 | 212 | 105 | 49.5 | 858 | -646 |
| Orkhon | 15715 | 304 | 152 | 50.0 | 337 | -33 |
| Arkhangai | 16715 | 330 | 144 | 43.6 | 796 | -466 |
| Bayankhongor | 14946 | 309 | 142 | 46.0 | 841 | -532 |
| Dornod | 15764 | 348 | 173 | 49.7 | 841 | -493 |
| Tuv | 19141 | 562 | 215 | 38.3 | 563 | -1 |
| Selenge | 21622 | 758 | 472 | 62.3 | 456 | 302 |
| Uvurkhangai | 17638 | 626 | 263 | 42.0 | 1660 | -1034 |
| Khentii | 13792 | 500 | 260 | 52.0 | 775 | -275 |
| Khovd | 16718 | 608 | 268 | 44.1 | 322 | 286 |
| Uvs | 15694 | 579 | 220 | 38.0 | 1241 | -662 |
| Umnugobi | 8787 | 359 | 171 | 47.6 | 485 | -126 |
| Sukhbaatar | 10318 | 458 | 199 | 43.4 | 497 | -39 |
| Gobi-Altai | 12074 | 565 | 233 | 41.2 | 413 | 152 |
| Bayan-Ulgii | 14176 | 806 | 405 | 50.2 | 1086 | -280 |
| Khuvsgul | 20111 | 1339 | 495 | 37.0 | 1386 | -47 |
| Dornogobi | 9474 | 812 | 436 | 53.7 | 337 | 475 |
| Total | 435061 | 10954 | 5100 | 46.6 | 16095 | **-**5141 |

Source: Ministry of Science, Technology, Education and Culture, Mongolia.

# TABLE 9. PRIMARY AND SECONDARY SCHOOL PERSONNEL

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Personnel | Total in  1997–98 | Total in  1998–99 | Change in Personnel | Total in 1998–99: Female | % of Personnel Paid by Government |
| Principal | 592 | 580 | -12 | 133 | 95.7 |
| Deputy Principal,  Master | 1121 | 1130 | 9 | 656 | 98.7 |
| Full-time Teachers | 18511 | 18118 | -393 | 14409 | 99.1 |
| Primary Grades | 7737 | 7750 | 13 | 7204 | 98.9 |
| Middle Grades | 8521 | 8443 | -78 | 5855 | 99.2 |
| Senior Grades | 2253 | 1925 | -328 | 1350 | 99.7 |
| Accountants | 394 | 380 | -14 | 297 | 97.6 |
| Bookkeepers | 538 | 530 | -8 | 251 | 99.4 |
| Dormitory Teachers | 299 | 291 | -8 | 188 | 100.0 |
| Librarians | 406 | 330 | -76 | 304 | 99.7 |
| Typists | 187 | 231 | 44 | 225 | 99.1 |
| Physicians | 101 | 138 | 37 | 127 | 99.3 |
| Assistants | 95 | 134 | 39 | 89 | 98.5 |
| Cloakroom Keepers | 134 | 148 | 14 | 143 | 99.3 |
| Cleaners | 2339 | 2426 | 87 | 2379 | 99.5 |
| Cooks | 378 | 461 | 83 | 442 | 98.7 |
| Cook Assistants | 198 | 231 | 33 | 200 | 98.7 |
| Laundry/Washers | 140 | 149 | 9 | 142 | 100.0 |
| Horse-cart Drivers | 36 | 34 | -2 | 1 | 97.1 |
| Plumbers | 394 | 371 | -23 | 12 | 100.0 |
| Stoker | 409 | 599 | 190 | 42 | 100.0 |
| Electrician | 102 | 115 | 113 | 3 | 97.4 |
| Cattle Breeder | 340 | 317 | -23 | 31 | 54.9 |
| Doorkeeper | 1741 | 2079 | 338 | 743 | 99.2 |
| Driver | 97 | 92 | -5 | 5 | 88.0 |
| Tractor Driver | 24 | 16 | -8 |  | 75.0 |
| Planter | 5 | 29 | 24 | 10 | 79.3 |
| Others | 240 | 196 | -44 | 87 | 96.9 |
| Total | 28821 | 29125 | 304 | 20919 | 98.5 |

Source: Ministry of Science, Technology, and Culture, Mongolia.

*Analysis of 1998 Education Sector Statistical Data.*

3.22 Another issue of concern to MOSTEC in the primary and secondary sub-sector, concerns the proportion of teachers who are working without having the training and credentials required for the level or subjects they are teaching. Table 10 shows the percentages of teachers without appropriate credentials ‘non-professional’ in each aimag. As was the case for dropout rates, the most remote aimags have the largest numbers of non-professional teachers. This is especially true for aimags in the Gobi region of the country such as Bayankhongor, Dornogobi, Dornod, Dundgobi, Umnugobi, and Gobisumber. Table 11 shows the distribution of non-professional teachers by subject. The most problematic subjects with respect to proportions of non-professional teachers are in vocational and technical areas (i.e., labour training – 41%, drawing/labour – 33%, and drawing/technical drawing – 28%). About 15% of the English language and physical culture teachers do not have the required teaching credential.

3.23 Table 12 shows the recently approved academic year curriculum for primary and secondary education in terms of the numbers of hours of instruction required in each subject. At this time, textbooks and teaching materials are being developed and printed but serious shortages are likely to continue for some time. Of course, as new curricula are developed, there is a need for inservice education of teachers to prepare them to use new materials. MOSTEC is reviewing the extent of teacher involvement at the school level in the design of materials as opposed to the pattern that has been in effect for some time of centrally determined and disseminated curricula.

3.24 Table 13 shows the distribution of primary and secondary schools by size. Clearly, school size varies widely throughout the country, ranging from 48 schools with 1800 or more students to 108 schools with less than 200 students. It should be noted that 61.8% of the primary and secondary schools in Mongolia have fewer than 600 students which is not surprising given the widely dispersed population. Finally, Table 14 shows the enrollment in special schools. These schools serve a very small segment of the school-aged population and are located in the largest cities, five in Ulaanbaatar and one in Darkhan.

3.25 Issues that need to be addressed for this level of education include both increasing the number of seats available to reduce the need for running schools on multiple shifts and upgrading existing school buildings. The harsh winter climate takes a heavy toll on buildings. Heating is also taking an ever increasing amount of the budget for school operations.

3.26 Textbook provision and supply is being addressed, but more work is needed in this area. There has been investment in textbooks under the ESDP, but more is needed. Along with the provision of new textbooks and instructional materials is the need to train teachers in their use. There is also a continuing need for regular inservice training of teachers for purposes of continuing professional development. Several of the donor projects have emphasized greater involvement of teachers in all aspects of the educational process at the school level (e.g., the MFOS-Soros ‘School 2001’ project). These projects have included school-based management and design of curricula, which are advances that should be encouraged. Finally, those teachers whose credentials are not sufficient for the subjects they are teaching require re-training.

# TABLE 10. NON-PROFESSIONAL PRIMARY AND SECONDARY

# TEACHERS BY AIMAG, 1998–99

|  |  |  |  |
| --- | --- | --- | --- |
| Aimags and Cities | Full-time Teachers | Non-professional Teachers | Percentage of Non-professional Teachers |
| Arkhangai | 721 | 49 | 6.8% |
| Bayan-Ulgii | 700 | 55 | 7.9% |
| Bayankhongor | 651 | 104 | 16.0% |
| Bulgan | 512 | 70 | 13.7% |
| Gobi-Altai | 513 | 46 | 9.0% |
| Dornogobi | 398 | 57 | 14.3% |
| Dornod | 639 | 117 | 18.3% |
| Dundgobi | 400 | 45 | 11.3% |
| Zavkhan | 717 | 47 | 6.6% |
| Uvurkhangai | 722 | 45 | 6.2% |
| Umnugobi | 392 | 73 | 18.6% |
| Sukhbaatar | 421 | 44 | 10.5% |
| Selenge | 907 | 167 | 18.4% |
| Tuv | 810 | 93 | 11.5% |
| Uvs | 679 | 43 | 6.3% |
| Khovd | 676 | 62 | 9.2% |
| Khuvsgul | 871 | 94 | 10.8% |
| Khentii | 597 | 88 | 14.7% |
| Darkhan-Uul | 751 | 73 | 9.7% |
| Ulaanbaatar | 5084 | 220 | 4.3% |
| Orkhon | 653 | 39 | 6.0% |
| Gobisumber | 115 | 17 | 14.8% |
| Others | 189 | 2 | 1.1% |
| Total | 18118 | 1650 | 9.1% |

Source: Ministry of Science, Technology, and Culture, Mongolia.

##### Analysis of 1998 Education Sector Statistical Data*.*

# TABLE 11. NON-PROFESSIONAL TEACHERS BY SUBJECT, 1998–99

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Subjects | | Full-time Teachers | Non-professional Teachers | Percentage of Non-professionals |
| 1 | Primary School Teachers | 7750 | 459 | 5.9% |
| 2 | Mongolian Language/Literature | 1477 | 82 | 5.6% |
| 3 | Khazakh Language | 37 | 7 | 18.9% |
| 4 | Social Studies | 170 | 4 | 2.4% |
| 5 | History/Geography | 402 | 22 | 5.5% |
| 6 | History | 273 | 10 | 3.7% |
| 7 | Geography | 251 | 11 | 4.4% |
| 8 | Russian Language/Literature | 1015 | 47 | 4.6% |
| 9 | *English Language* | 507 | 75 | 14.8% |
| 10 | Other Foreign Languages | 58 | 3 | 5.2% |
| 11 | Mathematics | 1029 | 79 | 7.7% |
| 12 | Physics | 386 | 11 | 2.8% |
| 13 | Mathematics/Physics | 344 | 26 | 7.6% |
| 14 | Physics/Mathematics | 174 | 5 | 2.9% |
| 15 | Chemistry | 278 | 3 | 1.1% |
| 16 | Biology | 295 | 5 | 1.7% |
| 17 | Chemistry/Biology | 339 | 16 | 4.7% |
| 18 | Physical Culture | 1135 | 165 | 14.5% |
| 19 | Music | 626 | 70 | 11.2% |
| 20 | Drawing /Technical Drawing | 220 | 61 | 27.7% |
| 21 | Drawing/Labour | 390 | 127 | 32.6% |
| 22 | Labour Training | 842 | 347 | 41.2% |
| 23 | Pedagogy/Psychology | 11 | 1 | 9.1% |
| 24 | Defectology | 47 | 1 | 2.1% |
| 25 | Speech Correction | 8 | 2 | 25.0% |
| 26 | Information | 22 | 6 | 27.3% |
| 27 | Others | 32 | 5 | 15.6% |
|  | Total | 18118 | 1650 | 9.1% |

Source: Ministry of Science, Technology, and Culture, Mongolia.

##### Analysis of 1998 Education Sector Statistical Data.

# TABLE 12. 1998–1999 ACADEMIC YEAR CURRICULUM (TOTAL HOURS OF INSTRUCTION BY GRADE AND SUBJECT)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Primary Grades | | | | Lower Secondary Grades | | | | Upper Secondary | |  |
| Grade 1 | Grade 2 | Grade 3 | Grade 4 | Grade 5 | Grade 6 | Grade 7 | Grade 8 \* | Grade 9 | Grade 10 | Total |
| 1 | Mongolian Language \*\* | 280 | 263 | 281 | 238 | 140 | 114 | 122 | 97 | 36 | 36 | 1607 |
| 2 | Literature |  |  |  |  | 61 | 61 | 52 | 52 | 63 | 72 | 361 |
| 3 | Foreign Language \*\*\* |  |  |  |  | 149 | 132 | 97 | 88 | 99 | 90 | 655 |
| 4 | Mathematics | 144 | 153 | 144 | 145 | 148 | 149 | 149 | 148 | 162 | 153 | 1495 |
| 5 | Informatics |  |  |  |  |  |  |  |  | 36 | 36 | 72 |
| 6 | Environmental Studies | 52 | 68 | 68 |  |  |  |  |  |  |  | 188 |
| 7 | Natural Sciences |  |  |  | 68 | 62 | 36 |  |  |  |  | 166 |
| 8 | Geography |  |  |  |  |  | 43 | 62 | 61 | 36 | 36 | 238 |
| 9 | Biology |  |  |  |  |  | 43 | 70 | 62 | 36 | 72 | 283 |
| 10 | Physics |  |  |  |  |  |  | 61 | 105 | 153 | 135 | 454 |
| 11 | Chemistry |  |  |  |  |  |  | 52 | 61 | 99 | 90 | 302 |
| 12 | History and Social Studies |  |  |  | 68 | 70 | 87 | 87 | 88 | 36 | 72 | 508 |
| 13 | Music | 52 | 68 | 51 | 68 | 61 |  |  |  |  |  | 300 |
| 14 | Fine Arts | 50 | 51 | 68 | 50 | 35 | 35 |  |  |  |  | 289 |
| 15 | Creative Works, Basic Designing | 34 | 34 | 34 | 34 | 44 | 70 | 88 | 78 | 72 | 72 | 560 |
| 16 | Physical Education | 68 | 68 | 68 | 68 | 70 | 70 | 70 | 70 | 72 | 72 | 696 |
| 17 | Other Compulsory Subjects | 34 | 34 | 34 | 34 | 35 | 35 | 35 | 35 | 36 | 36 | 348 |
| 18 | Subjects Chosen by School | 34 | 34 | 34 | 34 | 70 | 70 | 70 | 105 | 144 | 108 | 703 |
| Hours Per Grade | | 748 | 773 | 782 | 807 | 945 | 945 | 1015 | 1050 | 1080 | 1080 | 9225 |

Notes: \* Grade 8 is the last year of compulsory education.

\*\* Instruction in old Mongolian script is added to Cyrillic in Grade 3 (2 hrs/week in grades 3–6, 1 hour in grades 7–8).

\*\*\* The most common options are English and Russian.

Source: Annex 3 of Minister of MOSTEC Order No. 100, April 22, 1998.

# TABLE 13. SIZE OF PRIMARY AND SECONDARY SCHOOLS, 1998–99

|  |  |  |
| --- | --- | --- |
| *Size of School* | Number of Schools | Percentage |
| *1800 or More Students* | 48 | 7.6% |
| 1600–1799 Students | 23 | 3.7% |
| 1400–1599 Students | 21 | 3.3% |
| 1200–1399 Students | 22 | 3.5% |
| 1000–1199 Students | 21 | 3.3% |
| 800–999 Students | 29 | 4.6% |
| 600–799 Students | 78 | 12.0% |
| 400–599 Students | 150 | 24.0% |
| 200–399 Students | 130 | 21.0% |
| 100–199 Students | 43 | 6.8% |
| Up to 99 Students | 65 | 10.0% |

Source: Ministry of Science, Technology, and Culture, Mongolia.

*Analysis of 1998 Education Sector Statistical Data.*

# TABLE 14. ENROLLMENT IN SPECIAL SCHOOLS, 1998–99

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Number of Groups | Students | Female | Blind | Deaf and Dumb | Paraplegic | Mentally Disabled |
| Darkhan  No. 12 | 12 | 280 | 137 | 18 | 32 | 1 | 111 |
| UB No.25 | 13 | 196 | 91 | 11 | 16 | 5 | 196 |
| UB No.55 | 21 | 280 | 143 | 13 | 20 | 12 | 280 |
| UB No.63 | 17 | 200 | 81 |  |  | 2 | 200 |
| UB No. 70 | 15 | 240 | 113 |  |  |  | 240 |
| UB No. 29 | 50 | 561 | 274 | 54 | 348 | 7 | 27 |
| Total | 128 | 1757 | 839 | 96 | 416 | 27 | 1054 |

Source: Ministry of Science, Technology, and Culture, Mongolia. *Analysis of 1998*

*Education Sector Statistical Data.*

***Technical Education and Vocational Training (TEVT)***

3.27 Table 15 shows the 1998–99 enrollment in vocational training and production centers (VTPC) and step schools. With the exception of the construction trades, the TEVT sector also tends to have more female than male students. It should be noted that this table includes only the upper secondary vocational schools. In addition, several of the higher education institutions have upper secondary level TEVT programs. This accounts for the difference between the overall enrollment of 11,650 shown in Table 1 and the 10,765 enrollment shown in Table 15. MOSTEC is aware that, as greater emphasis is placed on the development of a TEVT system that is more responsive to the employment needs of the emerging market economy, refinement of these statistics will be necessary.

3.28 Two problems characterize the TEVT system as it currently exists. One is its fit with the needs of an emerging Labour market driven by private sector, as opposed to public sector, employment demands. This requires systematic study of the current situation and projections of future needs in order to be able to tailor the TEVT system to the jobs of the future. It will also require the development of new curricula and training standards. In 1998, for instance, 48.7% of the Mongolian labour force was employed in agriculture; 22.5% in trade and technical areas; 12.1% in industry; 9.2% in services; 4.1% in transportation and communications; and 3.4% in construction.14 A labour market survey is needed to identify and project employment demand and associated training needs in the emerging market economy. A second issue is the serious need for modernizing the facilities and equipment in TEVT schools. According to the 1993 *Mongolia Education and Human Resource Sector Review*, the average age of equipment in TEVT schools was 17 years. Virtually none of this equipment has been upgraded, so it is now an average of 23 years old. This reflects a time when the command economy drove the vocational education system and Russian subsidies funded the materials and equipment that were used. Clearly, major modernization of the TEVT system is now overdue.

3.29 MOSTEC is aware that the most pressing problem in the TEVT area is an assessment of labour market demand for the next five years. Current TEVT programs are based on pre-transition conditions when employment was primarily in state-owned enterprises or agriculture. A careful assessment of present and projected labour market needs is necessary to provide the foundation for the re-design of the TEVT system. Only when there is a good sense of the employment picture can the next step in reform be accomplished, namely the design of new training programs that correspond with the jobs and skills needed. MOSTEC also intends to have standards developed for new professional training programs, and to revise existing programs that are retained to meet current needs. Employers, labour organizations, chambers of commerce, and educators will have to work closely together in the reform of TEVT, something that is required under the TEVT Program. Of course, there will also have to be corresponding training of teachers in the new areas.

# TABLE 15. ENROLLMENT IN VOCATIONAL TRAINING AND PRODUCTION CENTERS (VTPC) AND STEP SCHOOLS BY GENDER, 1998–99

|  |  |  |  |
| --- | --- | --- | --- |
| Public Institutions | | Enrollment | |
| Total | % Female |
| 1 | Music and Dance College in Ulaanbaatar | 210 | 62.9 |
| 2 | Construction Training College in Ulaanbaatar | 396 | 30.6 |
| 3 | Mongolian-Turkish Construction and Technical College in UB | 437 | 27.9 |
| 4 | Light Industry Step School in Ulaanbaatar | 643 | 79.5 |
| 5 | Food Technology Step School in Ulaanbaatar | 921 | 80.9 |
| 6 | Industry and Service Step School in Ulaanbaatar | 816 | 66.1 |
| 7 | Construction Step School in Ulaanbaatar | 51 | 27.5 |
| 8 | Technical Step School in Nalaikh District (Ulaanbaatar) | 273 | 35.5 |
| 9 | Construction Step School in Darkhan-Uul | 302 | 45.4 |
| 10 | Music and Dance College in Zavkhan | 180 | 68.9 |
| 11 | Agricultural TPC in Khovd | 323 | 71.8 |
| 12 | Agricultural Step TPC in Dornod | 259 | 55.6 |
| 13 | TPC in Arkhangai | 187 | 52.4 |
| 14 | TPC in Bayan-Ulgii | 226 | 58.8 |
| 15 | TPC in Bayankhongor | 247 | 67.2 |
| 16 | TPC in Bulgan | 331 | 60.4 |
| 17 | TPC in Gobi-Altai | 418 | 62.4 |
| 18 | TPC in Dornogobi | 159 | 61.6 |
| 19 | TPC in Dornod | 301 | 54.5 |
| 20 | TPC in Dundgobi | 145 | 69.7 |
| 21 | TPC in Zavkhan | 348 | 69.3 |
| 22 | TPC in Uvurkhangai | 378 | 66.1 |
| 23 | TPC in Umnugobi | 250 | 71.6 |
| 24 | TPC in Selenge | 218 | 28.0 |
| 25 | TPC in Shaamar (Selenge Aimag) | 275 | 25.5 |
| 26 | TPC in Sant (Selenge Aimag) | 75 | 33.3 |
| 27 | TPC in Tuv | 132 | 66.7 |
| 28 | TPC in Arkhust (Tuv Aimag) | 30 | 6.7 |
| 29 | TPC in Bayanchandmani (Tuv aimag) | 218 | 40.8 |
| 30 | TPC in Zaamar (Tuv Aimag) | 196 | 40.3 |
| 31 | TPC in Uvs | 490 | 57.6 |
| 32 | TPC in Khuvsgul | 320 | 64.7 |
| 33 | TPC in Khentii | 212 | 61.8 |
| 34 | TPC in Orkhon | 275 | 71.6 |
| 35 | TPC in Darkhan-Uul | 368 | 46.2 |
| Private Institutions | |  |  |
| 1 | Secretarial and Interpreter's Step School in Tuv Aimag | 75 | 89.3 |
| 2 | Fine Arts Step School "Anima" | n.a. | n.a. |
| 3 | Fine Arts Step School "Green Horse" | 80 | 43.8 |
| Total (38 Institutions) | | 10765 | 58.6 |

Source: Ministry of Science, Technology, Education and Culture, Mongolia.

Higher Education

3.30 As has already been mentioned, higher education is the fastest growing segment of the education sector. Table 16 shows that the enrollment in public higher education institutions has more than doubled since 1992, and private institutions, which now have more than 18,000 students, enroll almost a third of all students. Women outnumber men by almost two to one in both public and private sector institutions. Commerce and business administration has the largest number of students in private institutions, and more students are studying law in private than public sector higher education institutions.

3.31 All institutions have been freed from the constraints of Government enrollment quotas, except in the awarding of public loans and other student assistance, but the public share of their funding has also been reduced to cover only utility costs. The Government is obligated by law to cover these costs, but recently, financing them has become difficult. Since 1993, students attending public higher education institutions have been charged tuition based on the full operating costs, including salaries of staff and building maintenance.

3.32 Higher education was the beneficiary of considerable assistance under the 1994 Master Planin a variety of areas, including management reform, curriculum development, academic and library networking, and associate professional development activities of faculty and administrators. A National Council for Higher Education Accreditation has been established and 11 institutions have been accredited. Loans and other assistance are now only available to students attending accredited institutions. MOSTEC wishes to see this pattern of reform continued into the future, along with carefully planned activities designed to improve the overall quality of the system.

Student Loans

3.33 A student loan system is available for higher education. This is financed from a State Training Fund which draws upon the state central budget for 80% of its expenditure and repayments of loans and interest for the remaining 20%.

3.34 The fund began in 1993, based on the 1992 Government resolution 107 which approved the procedure for financing state owned professional institutions. It provides state loan and assistance funds for payment of tuition fees to students studying in professional schools.

3.35 The State Training Fund activities are regulated by the 1995 Government resolution 194, *Procedure for granting loan and assistance to students studying in professional schools*. This was revised by the 1997 Government resolution 179, *Procedure for granting loan and assistance to students studying diploma and bachelor degrees in universities, higher educational institutions and colleges*. According to the above documents, the following 4 categories of students are eligible for loans:

**TABLE 16. ENROLLMENT FOR “FIRST UNIVERSITY DEGREE OR**

**EQUIVALENT QUALIFICATION” (ISCED LEVEL 5) IN HIGHER EDUCATION INSTITUTIONS BY FIELD OF STUDY AND GENDER, 1992–93 AND 1998–99 \***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| UNESCO Field of Study \*\* | | Public | | Private | | Public | |
| 1998–99 | | 1998–99 | | 1992–93 | |
| Total | % Female | Total | % Female | Total | % Female |
| 1 | Education and Teacher Training | 6048 | 79.3 | 3635 | 76.0 | 4775 | 73.8 |
| 2 | Fine and Applied Arts | 962 | 49.5 | 539 | 51.8 | 412 | 49.0 |
| 3 | Humanities, Religion, Theology | 3776 | 77.3 | 3060 | 79.6 | 1679 | 73.6 |
| 4 | Social and Behavioral Science | 2774 | 65.0 | 2451 | 75.3 | 255 | 65.9 |
| 5 | Journalism and Information | 641 | 73.6 |  |  | 86 | 69.8 |
| 6 | Commerce and Business Administration | 5710 | 68.9 | 4091 | 70.7 | 1705 | 59.2 |
| 7 | Law | 999 | 61.4 | 2539 | 65.3 | 282 | 46.5 |
| 8 | Life Sciences | 725 | 82.5 | 68 | 79.4 | \*\* | \*\* |
| 9 | Physical sciences | 1286 | 47.2 |  |  | 727 | 54.3 |
| 10 | Mathematics and Statistics | 777 | 63.8 |  |  | \*\* | \*\* |
| 11 | Computing | 644 | 30.3 | 229 | 50.2 | 455 | 41.1 |
| 12 | Engineering and Engineering Trades | 1819 | 77.2 | 30 | 90.0 | 1973 | 40.3 |
| 13 | Manufacturing and Processing | 7432 | 41.0 | 296 | 65.2 | 241 | 49.0 |
| 14 | Architecture and Building | 167 | 45.5 |  |  | 38 | 26.3 |
| 15 | Agriculture, Forestry and Fishery | 1926 | 67.0 | 55 | 60.0 | 956 | 54.1 |
| 16 | Veterinary |  |  |  |  |  |  |
| 17 | Health | 2295 | 83.7 | 90 | 75.6 | 2748 | 79.3 |
| 18 | Social Services |  |  |  |  |  |  |
| 19 | Personal Services | 275 | 66.5 | 1173 | 44.9 | 116 | 75.9 |
| 20 | Others | 2440 | 15.2 | 492 | 63.4 |  |  |
| TOTAL | | 40696 | 61.9 | 18748 | 70.4 | 16917 | 63.8 |

Notes: \* ISCED = International Standard Classification of Education, program leading “to the awarding of a first university degree or equivalent qualification,” Level 6 in 1992 was the same as Level 5 in 1998.

\*\*In 1992, the category “Natural Sciences” included BOTH “Life Sciences” and “Physical Sciences;” and the category “Mathematics and Computer Science” included BOTH “Mathematics and Statistics” and “Computing.”

Source: Ministry of Science, Education, Technology, and Culture, Mongolia.

* One child from very poor families with family income lower than the secured living standards
* One student from a disabled family
* Not more than two children from low income family with both parents retired, and
* Children from a single parent family.

The fund also provides assistance to the following categories of students:

* Orphans, and
* Disabled students.

3.36 Since 1997, the fund was extended to provide assistance to the following categories of students with outstanding academic achievements:

* Tuition fee assistance for the whole duration of study to students who win one of the first of three prizes in international competitions; and two and a half years of tuition fee assistance for students who win one of the first three prizes in national competitions, and
* Tuition fee assistance for the remaining duration of study for students with excellent academic standing and outstanding research achievements and who are nominated by the rector for the assistance.

3.37 In practice, the impact of fee increases in higher education and colleges resulted in an increase in the number of students from families with lower than secured living standards, from 366 in 1995–96 to 7,337 in 1998–99. During the same period the numbers from disabled families declined from 7,137 to 623.

3.38 A joint decree of the Minister for MOSTEC and the Minister of Finance was passed in 1997 to limit enrollments in higher educational institutions for the academic year 1998–1999. A further joint decree to be passed in 1999 will limit enrollments for the academic year 1999–2000. In the 1998–1999 academic year not more than 60% of approved students obtained loans and assistance in public institutions and in private institutions the figure was 10%.

3.39 In the future there is need to:

* Improve the fund system and structure
* Increase the security for repayment of loans by delegating some powers to institute levels
* Support certain Government priority professions like teacher training, computer training, and law, and
* Obtain external assistance to fund the loan and assistance system, especially during the transition period when economic activities are limited.

Science and Technology

3.40 Table 17 reflects the shifts in the science and technology sector that have occurred following passage of the 1995 Education Law which required much closer integration of scientific research with institutions and researchers in higher education. The number of research institutes has been reduced from 84 to 36 since 1995. The research institutes under the National Council of Science and Technology have increased from 5 to 13 and the number of Science, Technology, and Corporations has increased from 4 to 9. These newly established corporations have enabled an increase in income-producing activities from 8.8% to 14.1% of the total budget for science and technology.

3.41 The advancement of science and technology will require continuing efforts to establish linkages with international scientific communities in order to operate at a very high level of quality. Facilities become outdated rapidly, but it is expected that joint ventures with private sector entities will continue to provide resources that can be used to upgrade scientific capacity. There will also have to be even more cooperation between the institutes of the Academy of Science and universities as well as continued involvement with private sector firms depending on high-level scientific work.

Non-Formal and Distance Education

3.42 The National Center for Non-Formal Education collected data from aimags during the spring of 1999 on the extent and scope of non-formal education programs. Even though the data are incomplete, they do provide an indication of the types of people being served as well as the types of programs being offered. Based on the responses received, there are at least 20,000 people being served by non-formal education programs. About 75% of the students are illiterate. More than 250 training courses are being offered. Almost 3,000 people acquired a new profession through one of these non-formal training programs. Just under 1,000 school drop-outs were returned to formal education after participating in programs offered by more than 200 learning centers in aimags throughout Mongolia.

3.43 MOSTEC recognizes the need to develop even more extensive use of non-formal and distance education approaches. This will help to cover the increasing needs for job training and re-training, for continuing professional development of people in a variety of fields, and for reaching groups that are not being served by the formal system, such as dropouts, adults and nomadic families. This requires effort in a number of areas, including improvements to facilities for distance education, increasing the quantity and quality of instructional materials, and training teachers in the use of new materials and equipment.

**TABLE 17. BASIC INDICATORS FOR THE SCIENCE AND**

**TECHNOLOGY SECTOR, 1995–1998**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Basic Indicators | 1995 | 1996 | 1997 | 1998 |
| Number of research institutions | 84 | 84 | 35 | 36 |
| - under Academy of Sciences | 22 | 22 | 11 | 11 |
| - Science, Technology and  Production Corporation | 4 | 4 | 8 | 9 |
| - under National Council of  Science and Technology | 5 | 5 | 13 | 13 |
| - Others | 53 | 53 | 3 | 3 |
| Total number of employees | 3033 | 2934 | 2861 | 2861 |
| - Academy of Sciences | 2454 | 2013 | 1566 | 1566 |
| Total number of researchers \* | 1932 | 2038 | 1790 | 1790 |
| - with Doctor of Science degree | 193 | 217 | 215 | 215 |
| - with Ph.D. or equivalent degree | 1739 | 1821 | 1575 | 1575 |
| Number of projects on science and  Technology | 331 | 327 | 322 | 298 |
| Financing from Budget (million tug.) \*\* | 1097.8 | 1372.5 | 1627.9 | 1573.5 |
| - Percentage of GDP | 0.26 | 0.26 | 0.21 | 0.17 |
| - Income (million tug.) | 108.0 | 168.4 | 204.8 | 267.3 |
| Percentage of income in total budget | 8.80 | 10.80 | 10.80 | 14.10 |
| Centralized investment (million tug.) | 23.4 | 20.7 | 48.4 | 42.0 |

\* Because statistics for the science and technology sector are processed on

February of each year, numbers of employees and researchers are for the end of 1997.

\*\* Budget, financing, income and centralized investment are the figures planned for1998.

Source: Ministry of Science, Technology, and Culture, Mongolia. *Analysis of 1998 Education Sector Statistical Data.* Table 1.3.

Issues for Continued Reform and Development of the Education Sector

3.44 The following areas, most of which were originally identified in the 1994 Master Plan,have been addressed in implementation activities since then. However, as indicated in discussion of the current situation for each sub-sector of education, varying degrees of effort remain important for strategic development over the next five years:

* Deficiencies of buildings and facilities
* Teacher training and retraining
* Curriculum development and provision of materials for instruction
* Increasing student participation in education (e.g., expanding nursery school and kindergarten enrollments; extending general secondary education from 10 to 12 years)
* Organization and management of the educational system, and
* Maintaining a consistent funding base for both facilities and teachers’ salaries.

Projections of Enrollment

3.45 To address the issue of increasing student participation in education and assess the costs of implementation, it is important to project future levels of student enrollments that are anticipated under specific assumptions about rates of attendance. An enrollment projection model, developed by officers of MOSTEC, was used to make the projections that follow.

3.46 In 1998 the estimated population of Mongolia was 2.4 million.15 Of the total, 36.6% were between the ages of 5 and 19 years, the age bracket that places heavy demands upon educational institutions. In 1990, population growth was approximately 2.7% per annum, but over the ten years to 1998 crude birth rates fell from 36.5 per thousand in the population to 20.6.16 During the same period mortality rates also declined from 8.4 per thousand in the population to 6.6. The net effect of these changes reduced population growth to a level of approximately 1.4% in 1998.17 Changes in the birth rate will have an impact upon the education sector for a number of years, and will certainly affect enrollments during the planning period 2000–05 considered in this report.

3.47 Enrollments in preschools are a function of three factors. The first is the size of the population for the appropriate age cohorts, which span 3 to 7 years. The second is the availability of places in either kindergartens or non-formal programs, and the third factor is the enrollment of some 6 and 7 year olds at primary schools where the combination of available facilities and proximity of schools enables attendance on a daily basis.

3.48 Table 18 shows that after allowing for 6 and 7 year olds that can attend primary school, which is slightly in excess of 10,000 each year, the preschool age population will decline from almost 233,000 in the 2000–01 school year to 185,000 in 2004–05. During this demographic opportunity, MOSTEC would like to increase participation of the eligible age group as stated in the National Program on Preschool Strengthening.18 As a result the projection model assumes an increase in participation at kindergartens from 30.6% to 42%. This will increase numbers by 12,000, but this can be accomplished by more intensive use of places in existing facilities.

Table 18. Projections of Population Aged 3–7 years and

Preschool Enrollments, 2000–05

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Years | **Population**  **3–7 years\*** | Preschool Education | | | **%** |
| **Kindergarten** | **Non-formal** | **Total** |
| 2000–2001 | 232814 | 71330 | 27729 | 101418 | 42.5 |
| 2001–2002 | 219848 | 73412 | 33669 | 109163 | 48.7 |
| 2002–2003 | 206993 | 74939 | 38962 | 115428 | 55.0 |
| 2003–2004 | 196323 | 76713 | 44050 | 122537 | 61.5 |
| 2004–2005 | 188662 | 79251 | 49358 | 131147 | 68.2 |

Note: Figures are adjusted by primary enrollments from 6 and 7 years

3.49 At the same time it has also been assumed that participation in non-formal preschool education will increase substantially from almost 28,000 in 2000–01 to over 49,000 in 2004–05. Overall, the combination of reduced demographic pressure and the proposed efforts to improve participation will mean preschool participation will increase from 42.5% to 68.2% during the five years from 2000–01 to 2004–05.

3.50 The decline in the birth rate will also ease pressure upon primary school enrollments. Even after allowing for some improvements in participation, particularly amongst 8 year olds, the projection model shows that new enrollments in grade 1 will decline during the planning period. This is shown in Table 19. The steady decline in overall primary enrollments is evident in Figure 5.

# Table 19. Primary Education New EnrolLment Projections,

# 2000–05

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Years | **6 years** | **7 years** | **8 years** | **9 years** | Total |
| 2000–2001 | 583 | 9841 | 44771 | 1302 | 56497 |
| 2001–2002 | 558 | 10246 | 41925 | 971 | 53700 |
| 2002–2003 | 534 | 10278 | 40583 | 702 | 52097 |
| 2003–2004 | 495 | 10267 | 37956 | 436 | 49154 |
| 2004–2005 | 481 | 9935 | 35436 | 202 | 46054 |

##### Figure 5. Projections of Total Primary Enrollments, 2000–05

3.51 In general, an increase is expected in secondary education enrollments (excluding primary). This is shown in Figure 6. However, a peak will occur in 2003–04 when enrollments will be almost 30,000 higher than in 2000–01. The impact of lower birth rates during the last decade ceases by grade 7, which has relatively stable enrollment numbers throughout the five year period at levels between 47,000 and 50,500. The figures for grades 5 and 6 and those for 8, 9 and 10 run in opposite directions, with the lower grades declining slightly in enrollments and the higher grades increasing. After 2003–04, the projection model indicates declining overall secondary enrollments. This is shown in Figure 7. The model also indicates that the decline which first appears in 2004–05, will continue for several years and will include substantial reductions, giving this level of education an excellent opportunity to make qualitative improvements during this time.

###### Figure 6. Projections of Total Secondary Enrollments, 2000–05



Note: Excludes primary enrollment

3.52 Even under reasonably generous assumptions about participation rates the pattern of school enrollment projections suggests that preschools and primary schools will not be under intense pressure for additional resources during the five year study period. Secondary schools will be the exceptional case, where numbers in upper secondary will increase. This is likely to have a significant effect on some schools, as the enrollment pressures will be felt on the very section of the school system where resource requirements are most intensive.

3.53 In technical education and vocational training the projection model assumes there will be an increase in demand in the medium term as a consequence of the following factors:

* More general secondary education schools will include vocational training in their program
* Government medium-term economic and social development strategy implementation, particularly for private sector industries, will encourage economic growth and greater employment opportunities for TEVT graduates
* Government will continue to provide financial support for TEVT in the medium term, and
* Implementation of strategies developed as part of this study will encourage an increase in TEVT enrollments.

3.54 The pattern of new enrollments from general secondary and other sources is shown in Table 20. Projected overall enrollments are shown in Figure 7.

**Table 20. PROJECTIONS OF NEW ENROLLMENTS IN TECHNICAL AND VOCATIONAL EDUCATION, 2000–05.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **2000–01** | **2001–02** | **2002–03** | **2003–04** | **2004–05** |
| Lower Secondary | 7163 | 7690 | 9209 | 9271 | 9376 |
| Upper Secondary | 1113 | 1638 | 1974 | 2290 | 2957 |
| Other | 165 | 181 | 199 | 218 | 239 |
| Total | 8441 | 9509 | 11382 | 11779 | 12572 |

**Figure 7: Projections of Total Enrollments in Technical and Vocational Education, 2000–05**



3.55 Only a moderate increase in enrollments in higher education is expected, in part because of increased demand for technical and vocational education. However, the number of students attending private higher education institutions is expected to increase. Shifts are expected in certain higher education fields of study and the number of postgraduate students will increase at a rate faster than at undergraduate level. Anticipated sources of new enrollments are shown in Table 21 and the pattern of overall numbers is shown in Figure 8.

3.56 Based upon these projections of the normal college-age cohort, the lagged effect of fluctuating student numbers in first year enrollments is expected to result in variations in the number of graduates from 20,400 in 2000–01 to 8,700 in 2003–04. However, experience in other countries with strong demands for higher education, such as Korea, suggests that enrollments lost because of reductions in the size of this cohort, can be more than offset by two other factors. These are increases in the numbers of non-traditional students and continued growth in the proportion of the college-age cohort attending higher education.

**TABLE 21. PROJECTIONS OF NEW ENROLLMENTS IN HIGHER EDUCATION, 2000–05.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **2000–01** | **2001–02** | **2002–03** | **2003–04** | **2004–05** |
| Upper Secondary | 6226 | 8399 | 9292 | 9915 | 11789 |
| Other | 6226 | 6719 | 6504 | 6940 | 8252 |
| Total | 12452 | 15118 | 15796 | 16855 | 20041 |

**Figure 8: Projections of Total Enrollments in Higher Education,**

**2000–05**



# CHAPTER 4 - DESCRIPTION OF STRATEGIES

1. This chapter summarizes the process used to develop strategies and outlines some of the characteristics which are common to a number of them. It refers to some of the underlying needs in the sub-sectors and provides a full description of each strategy.

## *Formulation of Strategies*

4.2 As indicated in the Introduction, the project work underlying this report was a collaborative venture involving a work group of MOSTEC officers, a select group of senior officers of MOSTEC acting in an advisory capacity and a small group of consultants. The methodology employed was a truncated approach to more conventional strategic planning exercises, which was restricted to the review of current circumstances and needs, and compilation of strategies for future development. However, during the strategy development process, considerable efforts were made to enlist as much participation by key personnel as was practicable in the limited time available.

4.3 As already described, analysis of the present circumstances proceeded through the review of an extensive range of documentation, statistical analysis, information searches and consultation. The outcomes are documented in the previous two chapters, which outline the directions of Government and the outcomes of education sector reform.

4.4 In the early stages of strategy development members of the work group made arrangements for meetings of a number of discussion groups specifically related to each of the sub-sectors of education. Participants in these groups included key administrators, principals, teachers and donor representatives. Their focus was to review sub-sector needs and to make proposals about future developments. These initiatives were further refined and developed into draft strategies, projects and activities by work group members in conjunction with the consultants. The drafts were submitted to a national workshop on education sector strategies 2000–05, which was held in Ulaanbaatar on 10 June 1999, for further consideration and reactions.

4.5 The national workshop involved almost 100 invited participants. It included Members of the Parliament of Mongolia, officers of MOSTEC, officers from other Ministries, key educational administrators and teachers, and representatives of donor organizations. In addition to consideration of the national overview, participants were involved in small group reviews which concentrated upon draft strategies for each sub-sector. Animated discussions occurred within these groups and outcomes were reported at a workshop plenary session. This reporting also included the determination of priorities for strategies within sub-sectors.

4.6 Subsequently, the work group, advisers and consultants reviewed outcomes from the workshop and prepared the strategies, projects and activities in final form for this report. As a result, strategies have been formulated to be comprehensive and coherent descriptions of MOSTEC’s future direction and they describe how it will go about achieving a number of its objectives.

## *Characteristics of the Strategies*

4.7 The process of developing strategies by sub-sector groups was a strength, because it brought together educators and other persons with a common interest and concentrated high levels of expertise and effort to the task. However, If additional time had been available, the work group would have also benefited from a close examination of common elements in the strategies. It is important for these common issues and linkages between strategies to be recognized and carefully considered as part of future implementation arrangements.

## 4.8 Common Sub-Sector Needs. As indicated in the review of education sector reform, varying degrees of effort remain important in a number of areas over the medium term from 2000 to 2005. The following are four areas that are identified as highly pertinent during the review of needs in each of the sub-sectors:

* Alleviating deficiencies with buildings and facilities
* Providing teacher training and re-training
* Developing curriculum and providing textbooks and other educational materials, and
* Increasing student participation in education.

4.9 Based upon survey material collected by MOSTEC, most educational buildings are now more than 20 years old and are in acute need of renovation and refurbishment. In many buildings heating systems either do not function or are in a poor condition. In a country which experiences such severe winter conditions this is obviously a major difficulty. In addition much of the equipment in schools is in poor condition. These physical requirements cannot be ignored, but a vast quantity of resources will be needed to rectify them. Further details about buildings and facilities are considered in subsequent reviews of sub-sector requirements.

4.10 The reform of Mongolian education has established a requirement for revised curriculum at all levels and this, in turn, has created needs for new approaches to teacher pre-service education, teacher in-service, and the provision of textbooks and educational materials. Although subsequent strategies may reflect slightly different approaches in different sub-sectors, these are simply variations on the more general theme of the impact of curriculum change.

4.11 The third common element also comes from curriculum change and is highly inter-related with the second. It is the provision of textbooks and materials appropriate for the new curriculum. Clearly there is a strong association between the provision of teacher education and the availability of materials and this is often reflected in the strategies that have been formulated.

4.12 The fourth element, which is of vital importance, relates to the level of student participation in educational programs. Before transition, participation rates at all levels in Mongolia appear to have been high, but following transition participation initially declined, then seems to have recovered slightly. Maintaining and improving the recovery momentum is also a feature that is reflected in the strategies at all levels.

4.13 Linkages Between Strategies. Generally organizations that are faced with an exercise in strategic planning find that their information sources for developing projects are incomplete and MOSTEC was no different in this regard. Consequently, a few of the strategies are investigations and within many of the other strategies there are projects and activities that are predominantly reviews, enquiries, research or data collection. Invariably, they are sequenced early in the series of activities programmed within strategies. However, before implementation of each strategy begins, all strategies should be reviewed to ensure that, where it is appropriate for reasons of operational efficiency, research and investigations are conducted simultaneously or in an appropriate sequence.

4.14 Other obvious linkages will require careful attention as strategies, projects and activities move into the implementation phase. The renovation of buildings is an example. In this case, an approach based upon coordinating programs of work at particular locations will be much more efficient in the long run than one based solely upon sub-sector priorities alone.

## *Planning and Management Strategies*

4.15 Earlier sections of this report indicate the considerable progress that has been made in the reform of the education sector in Mongolia. A substantial part of these changes are derived from the Sector Review of 1993 and the subsequent Master Plan of 1994. Since then considerable effort has occurred in the preparation of policies and laws which have passed through the Parliament and are now the platform for further development of the education sector. All of this represents a planning effort of considerable magnitude. The compilation of this report at this particular point of time in Mongolia’s history represents a further step in this planning process.

4.16 As part of the ESDP some aspects of MOSTEC’s management and operations were improved. Some rationalization of staffing has occurred, improvements have been made in data collection and Ministry staff position descriptions have been modified. However, advice from members of staff and interactions with donor organizations suggest that improvements in the coordination of activities would be beneficial.

4.17 The combined observations that planning activities are staged on an ‘as required’ basis and that coordination could be improved, suggest that planning and monitoring activities could be placed on a firmer, on-going basis. The most obvious approach is to introduce an annual strategic planning cycle into MOSTEC’s operations. Strategic planning is advocated in the *Main Directive of the Government of Mongolia for Reform in the Education Sector in 1997–2005.19*

4.18 Despite the careful attention given by MOSTEC to the development of the strategies described in this report, they cannot be expected to remain current and viable for the full planning period from 2000 to 2005. Like all plans, the strategies could be seriously affected by external and internal influences and events. By adopting a strategic planning approach MOSTEC could make effective use of the present strategies to give it the basis for its first annual review of strategies, projects and activities. This could provide the organization with a relatively early entry into a relatively simple strategic planning approach, which could be expanded and further developed in subsequent years.

4.19 The development of strategic planning in MOSTEC should occur in a number of stages over the five years to 2005 to ensure that the approach is kept as simple as possible and that stepwise improvements occur at each new annual cycle. If carefully implemented and staged over time, this could serve as a model for the introduction of strategic and operational planning more widely throughout the education sector. The benefits in terms of direction setting, coordination and monitoring of progress could be substantial.

### Management Strategy 1: Establishment of an Annual MOSTEC Strategic Planning Cycle

4.20 MOSTEC has undergone structural changes over the past few years, however there is no explicit form of strategic planning. The Education Laws and Policy contain requirements for the Central Administrative Agency to develop short and long term plans and the *Main Directive of the Government of Mongolia for the Reform in the Educational Sector in 1997–2005* contains reference to implementation of strategic planning.

4.21 There are at least four significant consequences of the absence of strategic plans. The first is that the priorities of MOSTEC are not clear and apparent to regional administrations, educational institutions, other organizations and the community at large that have an interest in education. The second is that the Ministry appears to require higher standards of coordination. This affects foreign donor agencies and one of the consequences is that the best possible use is not being made of scarce resources, whether they are provided domestically or by donors. The third issue is that, although an extensive range of statistical data is collected each year, it does not appear to impact directly upon decision making. The fourth factor is that an annual strategic plan would give greater focus to budgeting for education. Overall management of MOSTEC could be considerably improved through the implementation of an effective strategic planning and review cycle. This strategy aims to establish an annual strategic planning cycle so that plans and priorities can be set each year and projects and activities can be reviewed in the light of actual events and outcomes.

**Anticipated Benefits**

4.22 Benefits of this strategy are that it would give focus to management in MOSTEC. It would assist considerably with the coordination of developmental activities, it would help shape the annual budget and would improve coordination for donor organizations. In the medium term it would establish a framework for the development of operational plans by regional and institutional authorities and would provide the structure necessary for the collection of statistics and other information for the evaluation of performance. It would make the intentions of MOSTEC more transparent and would lead to greater community participation in setting directions for educational development.

**Projects and Activities**

1. Establish agreement with key stakeholders for the introduction of a strategic planning cycle.
2. Clearly determine the personnel who will take responsibility for implementation of this management change and establish a steering committee.
3. Identify, select and train personnel who will perform the tasks of establishing and documenting processes, systems and performance indicators to support the planning cycle.
4. Progressively expand the planning process in subsequent annual cycles to include operational plans at lower levels in the education sector.

***Preschool Education Strategies***

4.23 By Resolution No 46, of April 1995, the Government of Mongolia established a National Program on Preschool Strengthening. It sets out, in some detail, the Government’s intentions for development of this sub-sector. The Resolution includes an ambitious implementation plan for the period 1995 to 2000. Although no review has been made of this implementation, information collected by MOSTEC about this sub-sector indicates that progress has been made, with assistance from donor organizations, towards improvements in both access to preschool and the quality of programs provided.

4.24 Mongolian children make a late start into primary education. For many children, the age of entry into the first year of primary schools is eight years. This means that a relatively large number of age cohorts of preschool children have to be minded by families or communities, be placed in child care or attend a preschool program. The population statistics show that in 1998, almost one quarter of the total population of Mongolia were under eight years of age.20 MOSTEC data show that almost 74,000 children attended kindergartens last year. These data also give some idea of the range of age groups attending preschools, as 8% of these children were under the age of two years. Altogether there are 658 preschools. Of these, 24 are operated by private organizations. Almost 10,000 people work in kindergartens.

4.25 The data indicate that a fortunate minority of children is able to experience preschool education. On average across the whole country, about 30 % of eligible children are enrolled. However, according to experts working in this sub-sector, the variation in the level of attendance across aimags is considerable. Consequently, when children eventually enter primary schools they do so with vastly different experiences of education and different levels of preparation for grade 1.

4.26 The problem of access to preschools in urban areas is related to the availability of preschool facilities, personnel and educational resources to conduct appropriate programs. MOSTEC has conducted at least two surveys of the condition of buildings and associated facilities in the last two or three years and as a result, has good information about reconstruction and refurbishment requirements. In rural areas problems of access for children, particularly those from nomadic families, arises because of their remote locations and because they are unable to attend a preschool on a daily basis. Several different approaches have been used to develop partial solutions to this problem. In some areas mobile ger kindergartens are used. Other approaches are home preschools where teachers are stationed in small communities for short periods of time. Programs are also directed at parents to encourage them to visit kindergartens and attend seminars which will assist them to provide learning experiences for their own children. To help children who have no direct involvement in preschool education a program of one month duration is provided to help them to transition into the first year of primary school.

4.27 A review and some redevelopment of the preschool curriculum has been undertaken over the past two years and a trial implementation is now in progress in three schools in Ulaanbaatar and two schools in aimags. In all cases where curriculum redevelopment occurs, the consequences are resource intensive because it leads to follow up requirements for new teaching materials and teacher retraining. Consequently it is not surprising that preschool education in Mongolia is now facing up to these needs and their associated resource requirements. As the new curriculum is more widely implemented the needs will expand and intensify. Some preparatory work has already been done to help manage this requirement, and much of it seems to be through a ’bottom up’ approach at the local level.

4.28 Teachers are, for example, being encouraged to innovate and share experiences and lesson plans. A journal, which is funded by the Save the Children Fund, is prepared on a regular basis for distribution to preschools. It contains practical material to promote an exchange of ideas between teachers and specialists. Overall, discussions with personnel involved in this sub-sector give the impression that they are aware of the direction that has been set and they are promoting changes at both the central and local levels to improve the quality of services delivered. Their approach to the next five years is, understandably, to continue with the qualitative changes that have only just taken their first tentative steps. Two strategies have been developed, which are logically aimed at improvements in access to preschools and improvements in quality.

**Medium Term Objectives**

4.29 The present national program on preschool education (1995–2000) aims to improve access, quality and sustainable development in this sub-sector.21 Current efforts to strengthen the system involve a renewal and redevelopment of curriculum content, implementation of new forms of preschool education, more active teaching-learning methodologies, and an upgrading of kindergarten buildings and equipment.

4.30 The overall strategy for this period is to continue the initiatives begun over the last few years. In particular, access to preschool should be increased by 40%, further improvements in quality are necessary and support should be provided for facilitators to increase the participation of parents, communities and private preschool organizations. It is also intended to improve the quality of preschool education through continued reform of content, teacher retraining and improvements in the learning environment.

### Preschool Strategy 1: Improving Training of Teachers and Managers

4.31 Development has just been completed of new content and methodology for preschool education. Testing of core curriculum implementation is planned between now and the end of 2001. This significant change will generate a requirement for in-service training of teachers in this sub-sector and the associated provision of suitable educational materials.

# Anticipated Benefits

4.32 This strategy will develop a capacity amongst preschool teachers to make effective use of new content and methodology. Trial implementation of the new curriculum in conjunction with appropriate teacher preparation indicates improvements in the quality of preschool education. This strategy will provide teachers with an understanding of the new requirements and in addition will provide them with training experiences that improve overall teaching performance.

**Projects and Activities**

1. Establishment of arrangements that will facilitate teacher retraining at local and central levels.

2. Provision of teaching aids and materials.

3. Support for teachers to learn active teaching methodologies.

4. Support for teachers to involve parents in the teaching-learning process with their children.

### Preschool Strategy 2: Improving Physical Environments of Preschools

4.33 The work of preschool educators is restricted by inappropriate facilities for young children. As the approach of preschool education is through play activities, this sector has a significant requirement for a suitable environment, toys and other related equipment. This type of equipment is in short supply

# Anticipated Benefits

4.34 This strategy will develop a program of renewal for preschool facilities and the equipment needed for them Children will be accommodated in safe, suitable environments and will have access to equipment and materials which support learning experiences suitable for their age groups.

**Projects and Activities**

1. Provision of repair and maintenance services for preschool facilities.
2. Provision of equipment, toys and teaching aids and the creation of suitable learning environments.
3. Provision of local methodologist preschool specialists with the required back-up office equipment.

## *Primary and Secondary Education Strategies*

4.35 Primary and secondary education provides for eight years of compulsory schooling, commencing at the age of eight years. A further two years of secondary schooling is available at upper secondary and technical and vocational schools. In 1998 there were 630 primary and secondary schools. Of these 96 were for the first four grades only and 214 catered for primary and lower secondary (grades 5–8). The remainder offered a full program of 10 grades.

4.36 Comprehensive policy and laws in relation to primary and secondary education were enacted in 1995 and amended in 1998. They provide a sound basis for development of this sub-sector. The goal of preschool, primary and secondary education is, ‘...to serve citizens by helping them to obtain general, technical and professional primary, secondary levels of education, to acquire a profession and develop an individual human being to discover their own talents and abilities, and to prepare for life’. Policy and laws establish a framework for access, the nature of institutions, their governance and management and the content of their programs. The comprehensive nature of these documents is certainly a firm basis for future development, but it is in the execution of these ambitious intentions that deficiencies appear to be evident.

4.37 As discussed in Chapter 3, the ESDP, which commenced in 1997, includes a number of projects related to primary and secondary education. This program has funded a strengthening and reorganization of educational management in MOSTEC, local government and professional units. It has provided for the reconstruction of 171 schools through a program which is expected to be completed in September 1999. It has undertaken a staffing rationalization program and has developed a stepwise performance and incentive program for teachers. It has also equipped a ‘model school’ in Ulaanbaatar and has supplied science laboratory equipment to 150 secondary schools. 22

4.38 In addition, donor organizations have provided assistance in the primary and secondary sector, largely by promoting innovations on a limited scale. The objectives of these innovative projects appear to be partly experimental, but where they are successful, donors have expectations that MOSTEC will be willing to adopt them and apply them in a wider context throughout the sector. The projects differ considerably in scope and content. The Mongolian Foundation for an Open Society (Soros Foundation), for example, is implementing a number of projects in the primary and secondary sectors. One of the major projects is the School 2001 Reform Program which aims to open up the curriculum for new content, decentralize school management and diversify approaches to teacher education. The Mongolian Foundation for an Open Society also has health education programs, an English language program, a civics and law program and programs to improve the performance of teachers and administrators. Other organizations such as DANIDA and UNICEF have implemented projects concerned with changes in the curriculum, child centered learning, textbooks, school management and teacher in service. The innovations which are occurring are, therefore, both extensive and diverse.

4.39 Despite these developments the needs of primary and secondary education are enormous. Reference to recent reports, and interviews with members of parliament, donor organizations and MOSTEC officers indicate wide ranging problems of a serious nature.

4.40 Buildings and Facilities. At least two surveys or mapping exercises of school buildings have been conducted in recent times and the data now held by MOSTEC has contributed to the program of reconstruction undertaken as part of the ESDP. A further request for assistance was lodged for consideration at the donors meeting on 21 June 1999. This request is for renovation of 108 schools in rural centers, the construction of 25 secondary schools and 77 dormitories, and other building requirements. This major renovation and reconstruction problem arises because many of the buildings were constructed 20 to 30 years ago and the combination of time, usage, and severe weather conditions has taken its toll. A further problem, at least in Ulaanbaatar, is that urban population growth has placed so much pressure upon school facilities that schools must run more than one shift per day. In some cases three shifts are operated.

4.41 In rural areas, the problems appear to be different, but are nevertheless just as significant. Because heating systems are antiquated or too expensive to run, many rural schools are unable to operate through the severe winter months of the year. Moreover, dormitories, which were intended to cater for children who cannot travel to school on a daily basis have been reduced in number either because the buildings are inadequate, or because running costs in terms of heating and other domestic operations are prohibitive and beyond the financial capacity of parents and local communities.

4.42 In addition to the deficiencies with buildings and associated fittings, schools also lack equipment. New and replacement equipment is in short supply and older equipment no longer operates because of lack of maintenance.

4.43 At least one donor organization is presently considering making a reasonably substantial investment in school buildings in Ulaanbaatar. However, the size and severity of problems associated with school buildings and facilities means that any program of rectification will have to be programmed over a considerable period of time. It will require a stream of financial investment over several years to overcome the difficulties. Moreover, the logistical problems of mounting such a large renovation program across the entire country will need to be addressed and will require careful planning. In addition to addressing these short term problems, the longer term issue of managing this large asset portfolio requires attention. If a progressive program of reconstruction were implemented immediately, it is reasonable to assume that upon its completion some of the schools renovated in the early part of the program would again be in need of some repair. This means that a longer term plan for managing these assets and keeping them in good operating condition is needed. At some stage it will become necessary for MOSTEC to develop an asset management strategy,

4.44 Capabilities of Teachers. Graduates from courses of teacher education obtain a diploma or degree qualification, and in both cases they undertake a four year program. Most students study the degree course. Approximately 2000 students graduate each year, and about one third of these are from private institutions. The general impression of MOSTEC officers and school principals who participated in work groups was that students are not well prepared for entry into the teaching workforce, and graduates from private institutions are not as capable as those from the public universities and colleges. They also have the opinion that courses in teacher education have not changed for many years and are now unsuitable for the preparation of teachers for schools where curriculum content and teaching methodologies have changed significantly.

4.45 The impact on teachers of the rationalization of schools, a reduction in the size of the teaching workforce, a more decentralized approach to educational administration and the introduction of new curriculum content, all in a relatively short period of time, appears to have had a major impact upon teachers. This is probably exacerbated by general economic conditions that have been accompanied by inflation, reduced real wage levels and lower benefits for teachers.

4.46 Whereas teachers formerly held a respected position in Mongolian society these changes have eroded their status. Although it is Government policy to maintain an appropriate standard of living for teachers, financial constraints have limited its capacity to implement these policies. The Government has attempted to increase teachers salaries, along with those of other public servants, through step by step increases, but this has not maintained their standard of living, which is now not as high as it was in 1990.23 An issue of particular concern for teachers is assistance with costs of accommodation. The feedback obtained through interviews and discussion with work group members is that the capabilities and performance of teachers requires significant improvement which will be achieved only through a combination of teacher in-service programs and performance appraisal. However, none of this will be effective unless it is accompanied by a more appropriate level of remuneration which will restore the motivation of teachers.

4.47 Curriculum Content and Materials. MOSTEC records show, that over the past year, an impressive record of 30 textbooks and teachers guides have been prepared and printed.24 Following a review of the school curriculum last year the ESDP implemented a program of textbook production using private publishing and printing firms. To date this program has produced ten textbooks and a teachers guide.25 During the second half of this year, thirteen more titles will be issued. Nevertheless, feedback from interviews indicates continuing deficiencies in the availability of materials for schools. There is also a concern about libraries, partly because of closures and partly because the libraries that are continuing to operate lack appropriate materials. A further issue in relation to materials and equipment is that there are shortages of equipment and the equipment that is available has not been effectively maintained.

4.48 Level of Participation. Prior to transition Mongolia was able to show a proud record of achievement in education. Records indicate a high level of participation, high levels of literacy and a high level of gender equity. The position has changed markedly during the 1990’s and some studies indicate that enrollment rates fell from 98% to 84% in primary schools in the early part of this decade and from 65% to 54% in secondary schools.26 The statistics of MOSTEC show that, following transition, drop out rates for male students increased substantially. This appeared to be partly due to privatization in the agricultural sector which resulted in boys remaining at home to assist with the management of animal herds. Subsequently the drop out rates improved, and statistics for 1998 show that 2.5% dropped out in 1998.27 However, key personnel who were interviewed have the impression that the drop out rate is much higher than the data indicates. Although their opinions are invariably based upon anecdotal evidence gained either through personal observation or through feedback from field staff, the consistency of these comments suggests that the problem does require attention.

4.49 Mongolia’s developmental thrust towards a market economy, which can participate globally, will be constrained by the structure of its education system. As described previously the majority of children, approximately 80%, do not begin grade 1 of primary education until they are 8 years of age. If they remain at school beyond the compulsory leaving age and finish upper secondary, they complete 10 years of schooling. The need to move towards 12 years of schooling was raised by members of parliament during interviews, and is certainly an issue of concern for MOSTEC officers.

4.50 Although MOSTEC does not have a specific plan to make this change, the process that seems to be generally accepted is that the age of entry to primary school should be lowered and additional grades should be progressively inserted into the primary program. Already the preschool curriculum is being strengthened and as the enrollment projection model shows, an acceptable increase in preschool participation during the life of this five year plan is proposed.

4.51 Moving to 12 years of schooling is a laudable objective, especially in the long term. However, experience of extending the length of schooling has demonstrated that this type of change places heavy demands upon resources. The process of lowering the age of entry into primary will have repercussions on the resource requirements of all grades, and will certainly add to the costs of operating the upper secondary levels. For the period under review the dual imperatives of maintaining the momentum of change already established over the past few years, and improvements in the quality of teaching-learning environments and outcomes must take precedent. This should not, however, prevent an early start on research and planning into the best way of accomplishing this important objective.

4.52 Given the present circumstances of primary and secondary education, together with the stage of economic development of Mongolia it would be extremely ambitious to suggest significant innovations or a major change in direction which could become an increased drain upon the limited public and private sector resources that are available. Primary and secondary education has already experienced rapid changes over the past few years and now requires a period of consolidation. Over the next five years it will be important to ensure that the present difficult circumstances do not deteriorate. It seems highly likely that addressing some of the existing problems will require all of the resources available to this sub-sector over the next five years. Consequently the strategies recommended for this sub-sector are conservative in nature and are directed towards continuation of the initiatives already established.

**Medium Term Objectives**

4.53 Implementation of the Master Plan of 1994 and its associated reforms, programs and developmental projects, has provided investment funds to help restructure and reorient primary and secondary schools. Nevertheless, a large proportion of school facilities requires extensive renovation, reforms in curriculum content and methodology begun in 1998 are not yet completed and the quality of training for teachers and school administrators requires improvement. There appears to be general acceptance of the proposition that a reasonably high priority should be given to primary and secondary education over the next five years.

4.54 Strengthening reforms in primary and secondary education to improve quality and efficiency is considered as the main objective over the medium term. This objective is considered justified as it will reinforce earlier reforms from the Master Plan, the ESDP and Donor organization projects and will lead to improvements in quality and efficiency. Successful implementation of this medium term objective in primary and secondary education will have associated positive benefits for other sub-sectors of education. The following strategies are proposed:

* Improvements in teacher pre-service and in-service training
* Improvement of school facilities and equipment
* Refinement of content, methodology and structure
* Development of a monitoring and evaluation system, and
* Expansion and improvement in research studies.

### Primary and Secondary Strategy 1: Improving Teacher Pre-service and In-service Training

4.55 Following reforms in social and education systems, a number of private schools were established for teacher training, re-training and up-grading, leading to greater decentralization. Reforms like the creation of a competitive environment to meet needs and requirements by providing teachers with vouchers to up-grade their skills and the rationalization of teacher training schools are underway. Nevertheless, other issues need to be considered. These include an unclear definition of concepts and trends in the overall reform of teacher training, a low level of skills of teachers prepared by public and private schools which do not fully meet requirements of secondary education, lack of rational and effective teacher re-training in new structures and mechanisms and problems of teachers remuneration These issues have not been resolved at the appropriate levels.

**Anticipated Benefits**

4.56 This strategy will create a new system of teacher training, re-training and up-grading more in line with the new education system, and will be the basis for sustained development for schools. It will also improve the material available for teacher re-training. It is expected to result in changes in attitude for teachers at schools which will raise their motivation and interest, enabling them to take greater professional responsibility for performance.

**Projects and Activities**

1. Promote more decentralized approaches to teacher training, re-training and up-grading at the school level and at centers.
2. Create an improved materials environment for complex schools and aimag schools with advanced training to upgrade the skills of teachers and build up human resource capacity.
3. Establish five regional teacher up-grading centers.
4. Invest in the Pedagogical University and Teacher Training Colleges to strengthen their material environment and elevate human resource capacity.
5. Create new mechanisms and methods to encourage schools and teachers to take initiatives, develop school activities and up-grade teachers skills.
6. Renew professional and ethical requirements for teachers and establish mechanisms for fair assessment of teachers’ performance and payments for their work in accordance with outcomes.

### Primary and Secondary Strategy 2: Improving School Facilities and Equipment

4.57 Extensive public investments in primary and secondary education between 1970 and the 1980’s provided school buildings, equipment and instructional materials. However, present studies show an overall deterioration of school buildings, equipment and furniture. Since reform in 1990 there has been no significant investment. Local investments have been trivial and of low quality that their impact is scarcely visible. The absence of investment for such a substantial period of time, has led to a very significant problem. Surveys undertaken by MOSTEC show extensive deficiencies.

**Anticipated Benefits**

4.58 In the long term, creation of a favorable physical environment will facilitate an increase in teacher motivation and student interest in learning which in turn will improve school participation and learning outcomes. In the medium term a coordinated program should be developed to ensure that the limited resources available for the reconstruction of buildings are effectively used.

**Projects and Activities**

1. Reconstruct, expand and construct school buildings and dormitories, particularly in rural areas.
2. Renew furniture, training equipment and facilities in schools and dormitories and improve continuity of supply.
3. Provide stable heating and electricity supply to enable schools to operate during winter.
4. Develop asset review and data collection systems to ensure that information is available for maintaining up to date plans for the systematic renovation and upgrading of school facilities.

### Primary and Secondary Strategy 3: Refining Curriculum, Methodology and

### Structure

4.59 In recent years the content and methodology of primary and secondary education, as well as its programs and standards have been refined and implemented successfully. Textbook provision has also been improved. However, these innovations are not complete and reforms in this sub-sector should be intensified. Issues related to the creation of educationally acceptable environments for learning, and relationships between teachers, students and parents are of great concern. Interactions between, schools and local governments should also be improved.

4.60 Although higher education institutions offer students numerous opportunities to select programs and courses, the same liberal approaches are only just beginning in primary and secondary education. Consequently, it is important to modify the present uniform education structure and introduce more flexible arrangements that allow students to make choices in accordance with their interests and abilities. To achieve international standards in schooling, planning and preparation needs to occur for moving to a system of 12 years of schooling.

4.61 The fact that skills, knowledge and learning outcomes for secondary students are considered poor and unsatisfactory suggests a need for further refinement of process in terms of content and methodology. This strategy aims at making significant improvements in decentralization and liberalization of primary and secondary education as well as acceleration of the program of reforms.

### Anticipated Benefits

4.62 The quality of the learning outcomes will be improved by developing appropriate environments which will improve teachers productivity and student motivation. It is expected that different forms of school organization, greater student choice and improvements in the quality of learning outcomes for students will result.

**Projects and activities**

1. Develop more decentralized and liberalized policies in primary and secondary education to:
2. Enable schools to make decisions on around 50% of curriculum content;
3. Delegate methodology and technology management to schools.
4. Create flexible, multi-functional operational structures for schools to support implementation of reforms;
5. Assist in developing involvement and co-operation of beneficiary organizations, teachers, parents and students, to provide appropriate educational and training environments.
6. Develop special training policies and programs to involve mentally, physically disabled and vulnerable group children, and provide gender equality, particularly at senior level grades of secondary schools.
7. Increase access to school textbooks through enrichment of library facilities, an increase of training materials, and introduction of new information technologies.
8. Undertake research into the possibilities of implementing a 12 year education, to determine the precise financial, educational and social implications and to indicate the relevant preparatory activities that must be undertaken.
9. Develop appropriate forms of support for the development of non-government primary and secondary educational organizations.

### Primary and Secondary Strategy 4: Developing a Quality Assurance System

4.63 In most countries, education quality assurance, monitoring and evaluation are important issues. These countries have developed and implemented quality assurance systems and have accumulated experience in this field. For countries taking their first steps to build up monitoring and evaluation systems, problems arise due to lack of experience with these processes, shortages of qualified personnel and uncertainty about how to proceed. Consequently, their monitoring and evaluation processes do not meet requirements and the results of monitoring and evaluation are not used effectively for policy development and decision making.

**Anticipated Benefits**

4.64 Establishment of a monitoring and evaluation system will begin the process of providing information about student achievement. Over time the data will help to provide insights about improvements in learning outcomes and will help improve standards in primary and secondary schools.

**Projects and Activities**

1. Review education content and assessment standards.
2. Develop and apply indicators of performance, activities and organizational assessment in education institutions.
3. Establish performance measurement for primary and secondary school students for analysis of results and comparative studies.
4. Establish a teacher performance evaluation system.
5. Establish test and diagnosis centers to inform and assist communities.
6. Establish linkages between monitoring and performance data and the education management information system.

### Primary and Secondary Strategy 5: Improving Educational Research

4.65 Curriculum content and standards for primary and secondary education were developed in 1998 to facilitate stability and sustainability in this sub-sector. However, there is a lack of systemic studies about curriculum content and teaching methodologies in primary and secondary education. Despite the fact that the legal foundation for decentralization is already established, well developed and reliable scientific information to enable management to make rational decisions and implement primary and secondary education policy is still missing. The findings of studies carried out by research institutions like the Education Research Institute and the School of Education Development lack relevance in this context. The main objective of this strategy is to develop a capacity among personnel to strengthen and rationalize the structure of research institutions working in the field of primary and secondary education and to expand and improve the quality and outcomes of research in this field.

**Anticipated Benefits**

4.66 Implementation of this strategy will establish a more reliable scientific foundation for policy and concepts to improve the management, organization and methodology in primary and secondary education.

**Projects and Activities**

1. Review and reorganize the structure of institutions concerned with education research and methodology and establishment of high quality research on education policy and management studies. Development of capacities amongst personnel to strengthen research work and provide appropriate information for decision making.
2. Establish regional education study & methodology centers to facilitate data collection and research in education management, content and methodology.
3. Train highly qualified researchers in education studies in country and overseas.
4. Support initiatives of public and non-public institutions in education studies and publishing to provide access to information for the public.

## *Technical Education and Vocational Training Strategies*

4.67 During the centralized planned economy system, where all factories were state owned and human resource needs were determined centrally, the state was able to forecast needs for professional development. However, since the beginning of the 1990’s, due to the transition to a market economy, structural problems in the TEVT sector have arisen. In as much as employment demand and needs are coming from both private and state enterprises, TEVT must be reformed to suit the requirements of a market economy. For this reason, there is a need to increase participation and involvement in development of TEVT programs from stakeholders, education sector management employers and employees’ associations. A National Program for TEVT, developed by the Government of Mongolia and approved in March 1998, was aimed at resolving these issues. Following this resolution, a national Policy Co-ordination Committee was established with the primary objective of reforming the TEVT sector in accordance with market economy needs and demands.

**Medium Term Objectives**

4.68 The primary objective is to establish a new system of technical education and vocational training that is responsive to the demands of the emerging market economy in Mongolia. This will include investing in innovative training techniques and technology as well as developing sustainable financing through new combinations of Government and private sector resources. Training content, standards, and quality assurance procedures will have to be developed in line with needs of the Mongolian labour market and people’s interests. Appropriate structures and approaches (including non-formal and distance education) to technical education and vocational training will also have to be developed in order to make it accessible to students.

4.69 There is a also a need to improve foreign and domestic co-operation in order to make the system correspond to Mongolian economic needs, both national and local, as well as meet international requirements. Development of the TEVT system will have to be designed to provide preparation and effective training environments for students preparing to enter the labour market as well as skilled professionals seeking re-training or upgrading of skills in accordance with employers requirements.

### TEVT Strategy Number 1: Bringing TEVT in Line With Labour Market Demand

4.70 Until 1990, the Technical Education and Vocational Training schools trained and delivered professionals for state owned, centralized enterprises and planned the required number of specialists for the national economy. Since 1990 state owned enterprises have been privatized, and this has been followed by shutting down economically inefficient enterprises, shrinkage of others that have continued and consequential reductions in the number of workers.

4.71 At the same time, opportunities to run private business have appeared and the number of small business entities, enterprises and services has increased. Many of the firms, companies and co-operatives established by private businesses were based on family relationships and, at the beginning, did not consider the employment of skilful, trained personnel. However, owners of private businesses have since realized that without trained personnel in the field, they are not able to generate profits, and have started to train their personnel within their own organizations as well as in educational institutions. At a result, educational organizations, the employers of their graduates, and business entities have recognized the need for information about the needs for trained personnel. This function is fulfilled by aimags and district labour regulation offices, but their activities are limited to keeping records on unemployment, providing unemployment compensations and taking job orders. Moreover, there is an acute need for making manpower forecasts, conducting research on labour force demand and supply, identifying the requirements of particular organizations and estimating shortages and excesses in specific trades and professions.

# Anticipated Benefits

4.72 This strategy is designed to up-grade vocational training and increase the quality and efficiency of such services corresponding to development, employment and labour market demand of regions. It will widen the selection of future job opportunities, increase training quality, and make the organization and types of training more flexible and accessible.

**Projects and Activities:**

1. Increase the scope of research on employment of the population and needs of labour market demand.
2. Identify vocational training needs of population.
3. Allow active involvement of community partnerships in vocational training activities.
4. Provide consultancy in professional orientation, acquisition of practical knowledge and selection of professions.

### TEVT Strategy 2: Establishing a Standards and Assessment System

4.73 In a situation where different types of schools in terms of ownership, training level and abilities are offering vocational training, it is important for the Government to set up minimum requirements for graduates’ specialization skills. Due to the fact that in a market economy, workers are able to work in domestic factories, joint or foreign plants in open zones, and abroad, vocational training is becoming internationally significant. Since 1990, every school has been responsible for administering final exams for their graduates, based on the capabilities of their own faculty alone. Consequently, objective evaluation of graduates’ professional skills and knowledge, as well as determination of whether these skills and knowledge suit the needs of businesses and the labour market more generally, have become problematic.

4.74 For this reason, there is a need to improve vocational training standards to the international level. On the other hand, with an increase of investment in vocation training, there is a need for evaluation of its quality. The main criteria for implementation of the above requirements should be vocational training and education standards. Therefore, the priority issue in TEVT as stated in the meeting of the National Committee on TEVT Policy Co-ordination is the development of training content and standards. This strategy will improve the professional skills assessment system of graduates from vocational training schools by establishing criteria for defining training quality. Consequently, the level of training acquired will be certified and opportunities to work will be increased because skills will suit the demands and needs of businesses. Relationships and co-operation between employers and vocational schools will be strengthened. Employers will become more concerned about vocational training and will be interested in becoming involved in training activities.

# Anticipated Benefits

# 4.75 This strategy aims to develop skill and knowledge standards for every level of vocational training in order to improve training quality and outcomes. It relies on close cooperation between educators and employers in the establishment of training standards and evaluation criteria. It is anticipated that graduates will be more suitably trained for the jobs being offered by employers and thus be more likely to be hired.

**Projects and Activities:**

1. Develop a national system of TEVT program standards.
2. Develop a system of student evaluation based on the standards.
3. Establish the legal basis for participation of social and economic partners.
4. Develop alternative versions of assessment systems for vocational school graduates.
5. Establish a system of evaluating the vocational training schools by quality of their graduates’ professional skills and rates of employment.

### TEVT Strategy 3: Improving Teacher Training, Re-Training and Up-Grading

4.76 Due to deterioration of student numbers in TEVT since 1990 because of a decline in teachers’ salary as well as increased opportunities to run a private business, highly qualified TEVT teachers have started to leave technical and vocational schools. The majority of teachers who have left were master-specialists in carpeting, plumbing, electric welding, and building decorating. The fact that the engineer-teachers program of the Technical and Agricultural Universities was temporarily shut down from 1996 also had a negative effect on provision and quality of TEVT teachers.

4.77 From previous experience it is obvious that for a small country like Mongolia with a few institutions, a concentration of teacher preparation in certain schools is not a suitable system. As an example, specialists in construction engineer-teacher and agricultural engineer-teacher that have had 3–4 graduations since 1980 are still in excess in some parts of the country. However, TEVT has more than 100 specialized courses and graduates from Technical and Agricultural Universities are insufficient to fulfil needs for teachers in these courses. Therefore, teacher training, re-training and up-grading for TEVT is becoming a compelling problem.

# Anticipated Benefits

4.78 The objective of this strategy is the provision of TEVT schools with highly skilled specialists-teachers who have the opportunity to acquire teaching methodology on a highly professional level as well as to up-grade teachers’ professional knowledge and skills. It will result in the establishment of a TEVT teacher training, re-training and up-grading system that is designed to provide continuous improvement of training content and program modernization.

**Projects and Activities:**

1. Make a survey on TEVT schools’ teachers’ specialization, education and social state, define demand, and develop a policy to train and re-train TEVT schools’ teachers.
2. Develop a program for engineers and master-teachers on training content, methodology and teaching methods.
3. Make arrangements for provision of TEVT school teachers with necessary information successfully.

### TEVT Strategy 4: Upgrading Technical and Technological Facilities

4.79 Every year more than 20,000 children, or 30% of students from secondary schools’ 8th and 10th grade, are not able to enter the next step of training and leave with no job opportunity. According to a survey conducted by the Government on poverty and unemployment issues, 25% of the total population of Mongolia lives below the poverty line, including 59% of the 63,700 thousand people registered in the labour regulation office who have not acquired any profession. The number of poor people with no job opportunities is increasing.

4.80 To improve this situation the Government approved Resolution No. 41, *The National Program for Development of Technical Education and Vocational Training*, in 1998. The Program aims to renovate the training and workshop equipment of Vocational Training and Production Centers and improve the training environment to prepare highly qualified workers who will be able to use advanced modern techniques and technology. Moreover, this will contribute to the reduction of poverty and unemployment level countrywide as well as influence improvement of living standards of indigent and needy people. The training techniques and equipment of more than 90% of Vocational Training and Production Centers countrywide are out-of-date and do not meet modern requirements.

**Anticipated Benefits**

4.81 The instructional and learning environment of technical and vocational training centers will be renovated and up-dated to suit modern needs. Outdated equipment will be replaced so that students are trained in up-to-date facilities.

**Projects and Activities**

1. Conduct a survey on the current situation of TEVT’s material base, making a list of workshops and equipment necessary to be renovated.
2. Define a framework of TEVT school activities (in terms of aimag, region or locality) and start a renovation process, beginning with schools which prepare high priority specialists.

### TEVT Strategy 5: Improving Curriculum and Methology of Training

4.82 As a result of realization of annual and 5-year activities to develop and publish textbooks by domestic teachers that started at the end of 1970’s, 30% of the total vocational training profiles were supplied by basic technical and specialized technical textbooks. These textbooks are, however, considered to be out-of-date and are not meeting current requirements. There are difficulties derived from the particular types of textbooks required to be published for use in Vocational Training and Production Centers. Rather than needing to be published in large numbers as for secondary schools, much smaller numbers of copies of TEVT texts requiring special types of printing schemes and graphs that result in a high price for publication are needed. There is also no selection and reward system for authors and editors.

# Anticipated Benefits

4.83 Policy will be developed for publication of technical education and vocational training textbooks, revision of existing texts and improvement of their supply. Content, quality and presentation of textbooks will be improved. Materials will be designed that improve the possibilities for trainees’ self-study, including opportunities to obtain new specializations and up-grade knowledge. Library services will be up-dated.

**Projects and Activities**

1. Identify current needs for new textbooks required for technical education and vocational training.
2. Develop a policy for publication and distribution of textbooks for technical education and vocational training.
3. Develop a proposal on selecting and rewarding authors and editors of textbooks for Vocational Training and Production Centers.

#### TEVT Strategy 6: Diversifying Finance

4.84 Technical education and vocational training is financed through the state centralized budget. According to the Education Law of Mongolia (1995, amended in 1998), no less than 20% of the state budget’s annual income should be spent on the entire education sector. By 1998, only three percent of the total budget in the education sector was provided and spent for normal functioning of Vocational Training and Production Centers, with 80% of this amount spent on salaries and utility costs. Consequently, there were virtually no funds for renovation of training facilities. There are needs for improving and defining appropriate financing mechanisms in order to provide possibilities to obtain vocational education by students in grades 9 and 10, by high school graduates left with no job opportunities as well as by those who want acquire new professions and change their specialization.

# Anticipated Benefits

4.85 This strategy will result in the development of appropriate financing mechanisms for TEVT. It will clarify financing sources and establish a stable environment for development of training institutions. The involvement of partners and community members in financing technical and vocational education will become more extensive. Auditing of financial sources will become more open and transparent and TEVT institutions will become more accountable to both students and employers.

**Projects and Activities**

1. Approve the main normative sources of funding that will be used for technical education and vocational training.
2. Determine and mobilize different financing sources, including private sector resources, for technical education and vocational training.
3. Guarantee and establish the legal environment for specialized funds and other resources that will create financing sources for technical and vocational training.

***Higher Education Strategies***

4.86 The higher education sector has been the beneficiary of significant assistance during the period of implementation of the 1994 Master Plan. There have been reforms in structure, finance, governance, and both academic and institutional management. There has also been rapid growth of enrollments in both the public and private sectors as citizens try to prepare for the professional employment demands of the emerging market economy. However, while there has been much activity in this sector, there is still much to be done in order to bring the Mongolian higher education system up to an international standard. Consequently, the strategies proposed are aimed at improving higher education management, financing and business activities, at intensifying higher education reforms, at improving quality and effectiveness and streamlining the mechanism for implementing government policy.

**Medium Term Objectives**

4.87 The main objective is to Intensify higher education reforms that have been ongoing since the 1994 Master Plan*,* creatingconditions for sustainable development of the higher education sector to bring its quality and efficiency up to international standards. It will also improve the integrity of Mongolian higher education by developing and implementing a consistent set of standards for the training, research and business activities of higher education institutions. Additional objectives include improving quality assurance through academic program accreditation, enhancing management systems, and improving research capacity.

### Higher Education Strategy 1: Improving Higher Education Management and Finance

4.88 As a result of activities implemented in the higher education sector, management is becoming more and more decentralized and the higher educational institutions are becoming more and more autonomous, each with its own governing boards. As stated in the 1998 amendments in the Higher Education Law, the governing board shall make important decisions such as appointing a rector, approving the budget, setting student fees, strategic planning, etc. Admission and graduation activities are now carried out by higher educational institutions, themselves.

4.89 Within the ESDP, concrete measures were taken to improve quality and financial management of higher education institutions that have been successful. Guidelines for defining student credit hours, credit-based fees, and developing annual budgets based on credit hour fees were developed and have started to be implemented. With the aim of improving higher education quality and efficiency, the Institute of Finance and Economics has been privatized by management contract and the initial outcome is to be reviewed.

##### Anticipated Benefits

4.90 The purpose of this strategy is to improve higher education management and fully transform higher education into a self-financing, self-governing system. This will include improvement of faculty salaries and benefits.

**Projects and Activities**

1. Create conditions for financially independent, sustainable development of higher education institutions and encourage management privatization of state-owned higher education institutions that meet established criteria.
2. Create the structure necessary for developing higher education management capability.
3. Develop appropriate higher education planning, fund management and accounting systems.
4. Create the legal and financial environment to encourage income-generating activities.

### Higher Education Strategy 2: Intensifying Higher Education Reforms for Improving Quality and Effectiveness

4.91 According to 1998 amendments in the Education and Higher Education Laws and as stated in the Government document, *Directions of Reforms in the Education Sector for 1997–2005*, the credit hour system has been developed and is being implemented into the higher education sector. Though the legal foundation has been established, the actual implementation has been slow, cosmetic and needs to be strengthened by going more deeply into education content and methods of delivery. The standards for masters and doctoral level higher education are not developed. Consequently, the contents lack integrity and consistency from on higher education institution to another. Higher education faculty preparation, in-service, and continuing professional development structure is not established. The higher education accreditation process has started and is expanding. Monitoring and evaluation of higher education reform processes and its outcomes have just started.

4.92 Under loan and grant assistance from the ESDP, a higher education curriculum development project has been implemented and minimum standards (core curriculum) for economics and business administration undergraduate program have been developed and proposed for implementation. Also within the ESDP program, the Higher Education Academic Network is to be strengthened. Higher education academic libraries have also been assisted by consulting and training activities and there is a plan to assist in establishing Subject Centers of Excellence. A legal document for defining the higher education content by credit hour was developed and is being implemented. Also within the ESDP loan program's Staff Development component, higher education faculty and managers are being provided with short-term international and local training. While this is a good start, there is a continuing need to expand these activities for the whole higher education sector.

##### Anticipated Benefits

4.93 This strategy is intended to strengthen higher education reforms, fully transition into a credit hour system, and move to an internationally recognized standard of quality. The longer-term benefit will be to increase the value of a Mongolian higher education degree.

**Projects and Activities**

1. Develop standards for masters and doctoral (Ph.D.) level education and enforce their implementation.
2. Start academic program accreditation in selected professional fields.
3. Upgrade higher education monitoring and evaluation activities.
4. Strengthen the Higher Education Academic Network and Library Network.
5. Move faculty research activities to a higher level.
6. Create conditions for developing an appropriate structure for integration of training, research and business activities of universities.
7. Support initiatives and ideas for cooperative resource sharing activities among institutions that improve quality and efficiency of the higher education system.
8. Develop and implement an appropriate system for improving the social and economic condition of higher education faculty.

### Higher Education Strategy 3: Establishing a More Effective Policy Process

4.94 Government higher educational institutions are currently mandated by law to receive a range of support and assistance. This includes heating, electricity, and water expenses, financed directly from the Government’s central budget; payment of student loans (60% of students enrolled); and one dependent of each government employee is entitled to have his or her higher education fees paid by the Government. These allocations have not always been paid in the recent past and do not provide adequate support for implementing government priorities within the higher education system. As a result, the Government cannot provide the funds necessary to ensure all types of professional preparation are provided. This results in poor quality and skills of some professionals and, consequently, in poor performance of some important sectors. As government financing and capacity are limited in practice, this results in an inability to fund fully all of its obligations and devalues overall government assistance in the sub-sector.

**Anticipated Benefits**

4.95 This strategy will lead to the establishment and streamlining of government higher education priority setting and will support a structure with an appropriate financing system. This will include development of a policy for preparation of professionals with government assistance. Government financing of the higher education sector will become more consistent. Higher education staff benefits, distribution and quality will also be improved.

**Projects and Activities**

1. Create a sound legal and financial basis for higher education development, for government support of state-owned and private institutions, and for autonomous financial and business activities of higher educational institutions.
2. Improve management and planning of intellectual investment, and of human resources development policy.

## *Science and Technology Strategies*

4.96 Since the 1970’s, a set of measures in the field of science and technology have been undertaken which includes the training of research workers, bolstering of research laboratories, and setting up scientific and research institutions. As a result, more than 40 scientific and research institutions were established by the early 1980’s and intensive scientific research was undertaken, covering a variety of fields. Compared with the 1970’s, the number of employees in the scientific research sector nearly quadrupled, the researchers doubled while the scientific workers with advanced academic degrees grew by 6.7 times at the end of the 1980’s. Between 1970 and 1990, the fund allocation for this sector had increased 7.6 times, and the funding for science at the end of the period represented 1.5% of GDP. There were also a wide range of activities that included such things as joint research projects, training of scientific researchers, bolstering of research laboratories and acquisition of technical documentation within the framework of long-standing scientific and technical cooperation among COMECON member countries.

4.97 Since the 1990’s, the strength of the scientific research sector diminished and international cooperation became stagnant. During the 1990’s, the number of employees in the scientific sector has been reduced by 2.5 times. There is continuing ‘brain-drain’ because many of the most highly qualified young personnel have been finding much more highly paid opportunities in private business. In addition, owing to government financial constraints and budgetary difficulties, the amount of funds allocated for the scientific sector have been consistently reduced. For the last three years, an average of only 0.2% of GDP has been spent on science, an amount that is seven times lower than the level mandated by law.

# Medium Term Objectives

4.98 The primary objectives for development of Mongolian science and technology are to shore up the scientific capacity to a level which approaches an international standard and which can support sustainable development within the context of a market economy. Several activities are envisaged as being necessary for reaching the medium-term objectives. They include development of a master plan for the science and technology sector, improving the training of highly qualified and skilled workers specializing in leading fields of science and technology, setting up an integrated database network with linkages to international scientific networks, and strengthening of research and testing facilities of laboratories at scientific and higher education institutions. Expansion of collaboration among higher education, science and business organizations throughout the world with regard to science and technology transfer, and rationalization of their organizational structure is also a goal.

### Science and Technology Strategy 1: Improving Physical Facilities of Universities and Research Institutes

4.99 The existing research and experimental equipment of scientific institutions has to be upgraded because it does not satisfy current requirements. To date, almost 50% of the existing 2000 types (3000 pieces) of equipment worth 1.1 billion tugrugs are broken. 80% of this equipment was procured before the 1990’s. According to an estimate made by MOSTEC, 6–7 billion tugrugs is required in order to procure 830 types (1700 pieces) necessary for current research work requirements.

# Anticipated Outcomes

4.100 This objective of this strategy is to upgrade research and experimental facilities as well as equipment of laboratories at universities and research institutes. It includes developing a master plan for the science and technology sector, increasing the technological base for developing of national production based on natural resources of Mongolia, and reducing dependence on foreign technology. Success in these areas will also contribute to employment and national economic development.

**Projects and Activities**

1. Development of a master plan for the science and technology sector.
2. Upgrading of laboratory facilities of 10 institutions undertaking research activity in the fields of chemistry, physics, biology, agriculture and renewable energy.
3. Provision of research equipment to experimental centers at the Institute of Chemistry, Renewable Energy Center, Electricity Center, Wool and Cashmere Center, Skin and Fiber Research Center, Institute of Mining, and Wood Processing Center.
4. Provision of equipment to ‘Inter-school Laboratory’ at Technical University.
5. Upgrading of equipment and software for receiving, storing, and transmission of information at the Science and Technological Information Center; including linkages with international scientific and technological databases.
6. Establishment of an inter-sector laboratory to examine natural resources and raw materials.

### Science and Technology Strategy 2: Increasing Cooperation among Education-Science-Business Organizations

4.101 The need for development and introduction of science and technology increased significantly during 1970’s due to the requirements for socio-economic development. However, this issue was tackled in the past, not by using existing capacity of university professors and scientists, but through heavy investment in establishment of research institutes. It became a base for separation of collaboration between universities and research institutes. Even though several research institutes were transferred to universities by Government Resolution No. 31 of 1997, the collaboration in research sector was not improved, and institutes usually ran separate and independent activities.

4.102 Also, there was no conformity of activities among scientific and business entities. There are not adequate initiatives among scientific and economic entities that include introduction of science and technological achievements, investment and financing of this type of activities and transfer of new efficient technology and know how. One of the bases for successful development of science and technology is to enhance cooperation among the education, science and business sectors.

# Anticipated Outcomes

4.103 This strategy will facilitate expansion of collaboration among education, science and business organizations with regard to science and technology transfer, and rationalization of their organizational structure. It will lead to the establishment of new options, organizational structures for efficient cooperation among education, science and business organizations with regard to science and technology transfer and minimize the length of time for transfer of results from research and processing activities.

**Projects and Activities**

1. Establishment of legal framework and standard requirements to encourage enhancement of cooperation between education, science and business organizations for science and technology transfer.
2. Support establishment of non-government scientific research units, development of various types of unions, foundations and associations within the framework of science and technology transfer.
3. Support establishment of inter-institutional laboratories shared by universities, research organizations, and local engineering centers.

### Science and Technology Strategy 3: Expanding External/International Relations of Science and Technology

4.104 Before the 1990’s, Mongolia actively cooperated with former COMECON member countries in the field of science and technology. Ten institutions, including experimental laboratories, the Information Center for Science and Technology, and Centers for Research and Experimenting of wool and skin manufacturing were incorporated by using assistance from these member countries. However, in the early 1990’s, the former cooperation in science and technology fields among these countries came to an end because of the collapse of COMECON itself.

4.105 Even though Mongolia has been expanding its relations with many countries in the world, there is not enough development in external cooperation in the field of science and technology, which is relevant to the new market economic situation. This is because Mongolia could not form new mechanisms of cooperation in the science and technology sector. According to Government Resolution No. 55 of 1998, *National Policy on Science and Technology*, section 7, international cooperation is strongly encouraged. This includes linkages with international scientific information networks.

**Anticipated Outcomes**

4.106 This strategy will lead to the broad expansion of collaboration with neighboring countries and developed countries in the field of science and technology with the goal of reaching a world level. It will expand capacity to obtain technological support as well as implementation of programs and projects to meet national socio-economic objectives. It will also provide increased opportunity for training and re-training of highly qualified professionals in the science and technology sector, exchange of scientists, and linkages with international scientific networks.

**Projects and Activities**

1. Establishment of legal framework and bilateral or multilateral contracts with foreign countries.
2. Conducting joint research and experiments, and establishing joint plants and research laboratories.
3. Introduction of advanced technology and know-how, professional exchange programs, and training of Mongolian researchers in developed countries.
4. Establishment of linkages with international scientific information networks.

## *Non-formal and Distance Education Strategies*

4.107 The *National Non-Formal Education Development Program, 1997–2004*, states as its mission the establishment and development an educational structure that enables each citizen to continue the learning process throughout their lives. This document stresses several issues and areas in which non-formal education can make significant contributions:

* the importance of non-formal education for meeting the education, training, and continuing professional development needs of adults
* the importance of establishing a national network so that non-formal education is readily available throughout the country
* the importance of coordinating non-formal education activities of both governmental and non-governmental entities
* increasing the literacy rate of the population
* re-training of the population
* improving the general level of education
* preparing the population for employment, and improving the education and professionalism of those who are employed
* assisting the population in learning and acquiring creative skills,
* assisting the population in independent, self-guided learning.

4.108 There is also a draft National Program on Distance Education that is under consideration by MOSTEC. Included in this draft are the following tasks:

* developing appropriate distance education curricula, content, formats and methodologies
* training and continuing professional development of distance education teachers, and
* provision of appropriate material and technological bases for distance education.

**Medium Term Objectives:**

4.109 The primary medium term goal in this area is to develop an efficient and effective structure for non-formal and distance education. This will include developing training content and materials, methodology and means of delivery (e.g., radio, TV, print materials, etc.). It will provide pre-service, in-service and continuing professional development of teachers. Access to non-formal and distance education (e.g., higher education, vocational training, etc.) will be expanded and central and local administrative level non-formal education organizations will be strengthened. A network of providers for involving citizens in non-formal programs through distance education methods will be established.

### Nonformal and Distance Education Strategy 1: Strengthening Central and Local Non-formal Education Centers

4.110 The legal framework for development of non-formal education was constituted by the 1995 Education Law and its 1998 amendments as well as government policy, specifically the *National Non-Formal Education Development Program, 1997–2004*. The management structure for implementing this program is being established. However, conditions for appropriate operation of central and local non-formal education centers has not been satisfactory due to deficiencies in physical facilities, equipment, and qualified staff. Therefore, there is a need for provision of equipment and teaching facilities to non-formal education centers at both the central and local administrative levels.

**Anticipated Benefits**

4.111 The objective of the strategy is to provide necessary staff preparation, equipment and teaching materials to non-formal education centers. Central and local level non-formal education centers will be provided with qualified staff, equipment and facilities, thereby improving the quality of training.

**Projects and Activities**

1. Undertake survey to identify staff training, equipment and teaching materials requirements.
2. Provision of necessary equipment and training materials, staff training and re-training.
3. Training and re-training of central and local non-formal and distance education staff, both in-country and in countries with highly developed non-formal education systems.
4. Conducting national workshops and seminars on non-formal education;
5. Implementing non-formal and distance education projects under the assistance and loans of multilateral and bilateral agencies.

### Nonformal and Distance Education Strategy 2: Developing Curriculum, Methodology, and Training

4.112 A survey of non-formal education content and methodology was conducted to identify major directions of non-formal education development in Mongolia. However, non-formal education content, methodology and training arrangements are not specified at the national level. Projects implemented or presently being implemented in this sector had realistically adopted contents, methodology and methods suitable for specific projects, but there was no generally agreed upon set of underlying principles. Because training content and methodology should be based on assessment of needs for education among the specific populations being served, it is necessary to develop appropriate surveys for this purpose. The results of this needs assessment should then be used to guide development of non-formal and distance education content by field, as well as to identify appropriate methodology and methods for training.

##### Anticipated Outcomes

4.113 The objective of the strategy is to undertake a survey to identify the needed contents, methodology and training methods in the various fields of non-formal and distance education. Once identified, the necessary materials, methodology, and training methods will be field-tested, revised and then implemented. By introduction of improved non-formal education contents, methodology and methods, people shall have an increased opportunity to acquire necessary education and professional qualifications in non-formal ways. As result, education content should become more flexible and education services should be expanded to groups not previously served, thereby increasing the level of education among the population and improving the socio-economic development of the country.

**Projects and Activities**

1. Undertake a survey to explore the current status, needs, and future prospects of nonformal and distance education, focusing on differences by age (e.g., children vs. adults), sex, educational status (e.g., dropouts vs. school completers) as well as identification of contents, methodology and methods.
2. Test and implement contents, methodology and methods.

### Nonformal and Distance Education Strategy Number 3: Establishing a Distance Education Network

4.114 International organizations are supporting many distance education activities being carried out in Mongolia. Apart from the projects being implemented in collaboration with UNESCO, DANIDA, UNICEF and the Soros Foundation, the National University of Mongolia, the Medical University, and the national Non-formal Education Center are preparing to carry out distance education activities. Within the framework of these projects, necessary measures were taken for training of trainers, acquiring theoretical and methodological knowledge, and obtaining required technology and equipment. However, a national policy on distance education was not formulated, and problems of management structures and organization of distance education were not yet solved. At present, it is still not possible for citizens to acquire educational services through distance education programs that are appropriate for their educational needs and interests, including the acquisition of professional training.

##### Anticipated Outcomes

4.115 By establishing a distance education network, citizens will have greater access to the possibilities of enhancing their knowledge and participating in continuous education. The country will also benefit from coordinating the experience of non-governmental organizations that have developed a variety of materials and provided training in their use for distance education.

**Projects and Activities**

1. Study and evaluate the physical environment for conducting distance education in Mongolia and its potential utilization, using this information to formulate national policy.
2. Coordinate issues related to joint utilization of distance education equipment at the national, regional and local levels.
3. Coordinate national infrastructure development plan with distance education policy.
4. Establish a distance education network, broadly involving Mongolian telecommunication, national and local radio, TV and other types of mass media.
5. Obtain loans and financial assistance from international donor organizations.

# CHAPTER 5 – IMPLEMENTATION, COSTS AND PRIORITIES

5.1 This chapter provides a brief overview of implementation of the strategies, describes the process used to make cost estimates and outlines priorities that could guide MOSTEC in programming strategies for implementation.

### ***Implementation***

5.2 MOSTEC has undergone a number of administrative reforms over the past few years, including structural change. As part of its new, functional organization it has created a Department of Strategic Management and Planning which can assume responsibility for implementation of the strategies set out in the previous chapter. Thus MOSTEC has the capability to undertake the tasks associated with implementation of the strategies, develop a program for implementation through to 2005, and at the same time progressively construct a procedural framework for annual progress reviews and future strategic planning.

5.3 The immediate tasks for MOSTEC are to review resource availability, select the strategies that will commence early in the program and ensure that associated projects and activities become operational.

5.4 Clearly, not all of the strategies listed in this report can be implemented simultaneously and a limited number will have to be selected for immediate action. The cost estimates and priorities set out in this chapter will help with this selection process, but as well as that, MOSTEC will need to take into account the availability of funding from the public and private sectors and from donor organizations. When all of these factors are reviewed, MOSTEC will be in a sound position to recommend strategies to Government that should proceed early in the program. Once these priority decisions are made, the next task is to ensure that responsibilities are assigned for preparing and implementing operational plans to get associated projects and activities underway. It is imperative that these plans analyze costs in detail and prepare budgets accordingly.

5.5 Once MOSTEC is confident that projects and activities associated with strategies selected for immediate implementation are underway, it can begin to establish a framework to support monitoring activities and an annual strategic planning cycle. The first task will be to link projects and activities from the selected strategies to the Government’s budget cycle and processes. The second will be to establish performance indicators, measurements and feedback as part of monitoring arrangements. The third will be to timetable strategic planning events to ensure that they comply with other annual events of the Government and the education sector.

5.6 Implementing this annual strategic planning framework is important because it will provide a means of monitoring the progress of strategies that are implemented and will ensure that the status of all other strategies is subject to regular review. However, most public sector organizations that have adopted a strategic planning approach have found that this implementation is not easy. Generally, they refine the approach over successive annual iterations. Consequently, MOSTEC will aim at a modest initial implementation and will make refinements during the annual iterations that occur throughout the period to 2005.

## *Cost Estimates*

5.7 As this report has dealt with strategic issues, it has not specified the projects and activities associated with strategies in great detail. As indicated above once implementation begins, this will be the work of groups or teams, which plan projects and activities at an operational level. It is only at this level that refined estimates of costs will be obtained.

5.8 Consequently, the cost estimates compiled for this report are broad approximations. They are intended to differentiate between strategies that will be resource intensive and those that can be implemented at a moderate cost. Even this distinction was difficult to achieve as the broad nature of many projects and activities means it was impossible to be precise about cost items. Furthermore, even when these were identified it was often difficult to obtain reliable cost data to make estimates.

5.9 The process used was to create a limited number of cost models. These were applied to each project or activity to make estimates. In some instances, informed judgements were made based upon the experience of other projects. Accordingly, the estimates should not be treated as if they are precise, but instead should be regarded as indicative of the general magnitude of the resource requirements needed to proceed with implementation of particular strategies. The estimates are set out in Table 22 and further details are available in Appendix 2.

## TABLE 22. SUMMARY OF STRATEGIES AND INDICATIVE COSTS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a | b |  | | **US$** |
| **EDUCATION SECTOR MANAGEMENT** | | | **200,000** | |
| 1 | 1 | Establishment of an Annual MOSTEC Strategic Planning Cycle | 200,000 |  |
| **PRE-SCHOOL EDUCATION** | | | **2,968,500** | |
| 4 | 1 | Training of Teachers and Managers | 562,000 |  |
| 10 | 2 | Improving Physical Environments of Preschools | 2,406,500 |  |
| **PRIMARY AND SECONDARY EDUCATION** | | | **32,189,000** | |
| 4 | 1 | Improving Teacher Pre-service and In-service Training | 4,314,000 |  |
| 10 | 2 | Improving School Facilities and Equipment | 25,060,000 |  |
| 5 | 3 | Refining Curriculum, Methodology and Structure | 700,000 |  |
| 6 | 4 | Developing a Quality Assurance System | 500,000 |  |
| 6 | 5 | Improving Educational Research | 1,615,000 |  |
| **TECHNICAL EDUCATION AND VOCATIONAL TRAINING** | | | **2,148,000** | |
| 3 | 1 | Bringing TEVT in Line with Labour Market Demand | 200,000 |  |
| 6 | 2 | Establishing a Standards and Assessment System | 200,000 |  |
| 4 | 3 | Improving Teacher Training, Re-Training and Up-Grading | 200,000 |  |
| 10 | 4 | Upgrading Technical and Technological Facilities | 1,200,000 |  |
| 5 | 5 | Improving Curriculum and Methodology of Training | 338,000 |  |
| 8 | 6 | Diversification of Finance | 10,000 |  |
| **HIGHER EDUCATION** | | | **3,215,000** | |
| 8 | 1 | Improving Higher Education Management and Finance | 2,100,000 |  |
| 5 | 2 | Intensifying Higher Education Reforms for Improving Quality and Effectiveness | 1,075,000 |  |
| 9 | 3 | Establishing a More Effective Policy Process | 40,000 |  |
| **SCIENCE AND TECHNOLOGY** | | | **4,850,000** | |
| 10 | 1 | Improving Physical Facilities of Universities and Research Institutes | 4,650,000 |  |
| 7 | 2 | Increasing Cooperation among Education-Science-Business Organizations |  |  |
| 7 | 3 | Expanding External/International Relations of Science and Technology | 100,000 |  |
| **NON-FORMAL AND DISTANCE EDUCATION** | | | **2,445,000** | |
| 4 | 1 | Strengthening Central and Local Non-formal Education Centers | 695,000 |  |
| 5 | 2 | Developing Curriculum, Methodology, and Training | 700,000 |  |
| 2 | 3 | Establishing a Distance Education Network | 1,050,000 |  |
|  |  |  | |  |

Notes: a. Priorities across sub-sectors (1=highest) are based on discussion among consultant team members and MOSTEC officials: 1=strategic planning; 2=distance education network; 3=market driven TEVT; 4=staff training; 5=instructional content and methodology; 6=standards, research, and evaluation; 7=cooperation; 8=finance; 9=policy implementation; and 10=facilities.

b. Priorities within sector (1=highest) are from discussion at National Seminar, 10 June 1999.

***Priorities***

5.10 At the National Workshop on Education Sector Strategies 2000-05 on 10 June 1999, the various groups that discussed particular sub-sector strategies placed them into a priority order for the sub-sector. However, to help MOSTEC to make decisions about the order in which priorities will be implemented it requires a set of priority guidelines across all sub-sectors. The guidelines developed for this report make use of a rank order of 10 categories, which are set out in Table 22.

5.11 Although the Medium Term Strategy of the Government of Mongolia places emphasis upon human resource development, more immediate concerns are related to economic growth to ensure that subsequent improvements occur in standards of living. As already indicated, the Medium Term Strategy suggests declining Government expenditures as a proportion of GDP in the future, which are likely to impose new financial constraints upon the education sector.

5.12 Taking this overall Government position into account the underlying reasons for adopting each of the categories in this 10 point framework were:

1. As indicated in the earlier consideration of implementation issues, development of an annual strategic planning capacity in MOSTEC is regarded as an important strategy. An annual strategic planning cycle would give focus to the developmental efforts of the Ministry, which, in turn, has considerable importance for the other strategies as it means they would come under annual review.
2. This priority is given to the distance education network. It is apparent that a number of activities are already in progress for distance education, but are not well coordinated. Students in all sub-sectors of education throughout the country could benefit from development of distance education, and co-ordination is vital to minimize infrastructure, development and operating costs. The draft national program for distance education should be completed.
3. The third priority is concerned with labour market demand. The technical and vocational education sub-sector is at a point where directions can best be set if there is a much better understanding of the precise requirements of the emerging market economy. A detailed labour market survey is essential, not only for TEVT but also for the higher education and non-formal education sub-sectors.
4. The fourth important category is the training of teachers. As already indicated in the previous chapter, this issue permeates all sub-sectors and will require co-ordination across the sub-sectors. A high priority for this grouping is justified, as there is ample research evidence that the quality of learning outcomes is very dependent upon the capabilities and performance of teachers.
5. The fifth category and priority is concerned with curriculum reform and the associated provision of learning materials. Clearly, it is also closely linked to the previous category as the combination of improvements in teachers knowledge and capabilities together with ready availability of materials will considerably strengthen learning environments.
6. This category is related to several strategies that are concerned with monitoring and evaluation. Again the linkages with previous categories are important. This type of feedback is also a requirement of strategic planning in the first category.
7. The seventh category is concerned with the establishment of linkages and co-operation. Within Mongolia, this refers to the establishment of public sector linkages with private sector entities. Externally, it refers to increasing linkages and co-operation with international entities.
8. The eighth category is related to the previous one in the sense that it encourages diversification of financing, with an emphasis on greater contributions by the private sector entities that are the primary clients and beneficiaries of well-developed manpower.
9. The ninth category refers to the need for improving relationships among sub-sectors and the Government in order to facilitate more effective policy development and implementation.
10. This category groups all of the strategies across sub-sectors that involve upgrading or constructing buildings and facilities. The poor condition of the physical environment at all levels in the education sector is of concern and, in the opinion of some of the experts consulted, should be accorded a very high priority. This cannot be denied. However, the Government budget funds recurrent and capital expenditures separately, and it seems unlikely that the extent of activity in relation to facilities would be affected by the priority it is accorded here. What does seem highly likely is that one or more donor agencies may undertake extensive facility renovation projects, which again would not be affected by these priorities. Moreover, if facilities strategies across the sub-sectors were assigned the highest priority in this framework, the resource demands would be intensive. The result would be that a limited number of students and staff members would be better accommodated, but other strategies vital for the reform of the education sector would not proceed at all in the five year time period. Such an alternative could not be seriously contemplated.

***Access and Equity***

1. Before 1989, access to education in Mongolia was virtually universal, as reflected in a literacy rate (above 90%) which was among the highest in the world. In the early 1990's, immediately following the transition to a market economy, there were some drops in school enrollments, especially among boys living in aimags located far away from Ulaanbaatar who were kept at home to tend the newly privatized herds. Over the past few years, enrollments have again reached pre-1990 levels, but enrollment rates in the most remote aimags continue to lag behind those in urban areas. Further, the enrollment of females continues to exceed that of males in the later school years, culminating in a female-male advantage of almost 2 to 1 in higher education. This preponderance of women in higher education is also quite unusual in international context.
2. The Government of Mongolia, is however, committed to both medium- and long-term strategies that maximize both access to and equity in the provision of

education in accordance with the Children's Summit and the Jomtien "Education for All" Meeting. There is a particular concern for serving the needs of poor and otherwise vulnerable children in Mongolia. The medium-term priorities for education described in this report are designed to support the national educational policy which mandates provision of education to all Mongolians, regardless of gender, geographic location, or socio-economic condition. This also includes provision of continuing professional education and training throughout people's lives. The priorities in this report emphasize children's formal education through at least grade 8, but include provision of education by non-formal and distance means. In fact, taken together, the strategies for pre-school, primary and secondary, non-formal, and distance education include $38 million of the $48 million investment package proposed across all sub-sectors.

CHAPTER 6 - CONCLUSION

# 6.1 Over the past decade Mongolia has adjusted to severe economic and social changes. It intends to improve living standards substantially and find a place globally through its transition from a command economy to a market economy. It no longer has the advantage of direct financial support from Russia, which helped provide the capacity to support an effective, comprehensive education sector. Its economic position over the past few years has been further weakened by the severe downturn experienced in neighboring Asian economies.

# 6.2 Nevertheless, as the turn of the century approaches, the education sector in Mongolia is in a better position to implement reforms than it has been for many years. The Government of Mongolia has made strenuous efforts to devise and implement medium term economic plans. These plans recognize the importance of the education and human resource sector for future economic growth and social welfare. Growth has occurred in the GDP over the past few years and it is predicted to increase further in the medium term. As the wealth of the nation improves, the education sector will benefit from an improved resource base which will increase MOSTEC’s capacity to implement reform strategies.

6.3 Other Government initiatives have also added strength to MOSTEC’s future capabilities. In particular, the numerous laws, policy resolutions and directives of Government in relation to the education sector now set overall directions and provide the education sector with clear goals and objectives for the future. This is a fundamentally important framework, which was not in place at the time of the 1994 Master Plan. In addition, the Government is considering draft laws for the operation of public sector organizations and new financial arrangements for publicly funded activities, which will promote operational efficiency. It also intends to encourage further privatization in the social sector, including education.

6.4 The strengthening of MOSTEC itself through administrative reforms over the past few years has placed it in a much better position to promote change and improvements in the education sector. The resolutions and directives of Government have already started to bring about greater decentralization of operational activities in education and create the opportunity for MOSTEC to concentrate on strategic and policy matters. The organization of MOSTEC has been reviewed and streamlined, and new positions have been created to adopt a more modern, functional approach to administration. Significant improvements have also been made in setting up procedures for data collection and monitoring progress in this sector. While the need for further reforms must be acknowledged, MOSTEC is now better placed to address future change than it has been for some time.

# 6.5 Within the education sector itself the position is also much improved. The reforms outlined in this report since the Asian Development Bank supported compilation of the 1994 Master Plan, and the ESDP since then, have placed the sector in a considerably better position to benefit from further, well orchestrated change programs. This has been augmented by numerous contributions of other donor agencies, which have often supported innovative projects.

# 6.6 Against this background, the initiative to prepare strategies for future development and document them in this report has come at an appropriate time. Clearly, the Government of Mongolia has set an agenda for the future but the last major planning study, which took place some five years ago, is now at the end of its term. Moreover, the most significant intervention, the ESDP, will shortly reach a conclusion. Consequently, the 23 strategies compiled for this report provide MOSTEC with timely and appropriate ways to continue the reform process in the medium term and address a number of the Government’s goals and objectives.

# 6.7 The strategies documented here are not a radical departure from the past. Because a participative approach was adopted to the development of the strategies, the needs of the education sector have strongly influenced the strategies that were finally approved by MOSTEC. As a result, they reflect a clear intention to continue in the same general direction as the past few years, to implement more fully the reforms that have started and to further improve the quality of learning outcomes in the sector. It would be unusual if this was not the case. One of the strengths of the strategies documented here is that they represent a refinement and focussing of ideas, rather than a major change in direction.

# 6.8 In the medium term (2005-05) MOSTEC does not expect to resolve all of the problems and needs of the education sector in Mongolia, nor were the strategies intended to achieve such an ambitious goal. Throughout the project work undertaken for this report, it was recognized that some needs simply could not be addressed during this period. However, MOSTEC appreciates that, equipped with the set of strategies set out in this report, it is now in the best position it has been for some time to move forward with continued reform of the education sector. MOSTEC is now ready to take the first steps in the implementation phase and understands that the immediate challenge ahead is to effectively match resource availability, from public, private and donor sources, with the strategies that are of greatest importance to Mongolia. This will require a careful reconsideration of priorities.

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4. See, “Medium-Term Economic and Social Development Strategy 1999–2002”, 1999; p.14
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3. See, “Mongolian Statistical Yearbook”, 1998; p.33
4. See, “Mongolian Statistical Yearbook”, 1998; p.28
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6. See, Government of Mongolia, Resolution No.89, Appendix; “Main Directive of the Government of Mongolia for the Reform in Educational Sector in 1997–2005”, 1997.
7. See, “Mongolian Statistical Yearbook”, 1998; p.29
8. See, Government of Mongolia, Resolution No.46, Annex 1. “National Program on Preschool Strengthening“, 1995.
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1. See, “The impact of economic transition on education in Mongolia“, Bernadette Robinson, forthcoming publication in the International Journal of Educational Development, 1999.

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APPENDICES

# APPENDIX 1

# SUMMARY MATRIX OF STRATEGIES

# Strategies by Sub-Sector

|  |  |  |
| --- | --- | --- |
| **a** | **b** |  |
| EDUCATION SECTOR MANAGEMENT | | |
| **1** | **1** | **Establishment of an Annual MOSTEC Strategic Planning Cycle** |
|  |  |  |
| PRE-SCHOOL EDUCATION | | |
| **4** | **1** | **Training of Teachers and Managers** |
| **10** | **2** | **Improving Physical Environments of Preschools** |
|  |  |  |
| PRIMARY AND SECONDARY EDUCATION | | |
| **4** | **1** | **Improving Teacher Pre-service and In-service Training** |
| **10** | **2** | **Improving School Facilities and Equipment** |
| **5** | **3** | **Refining Curriculum, Methodology and Structure** |
| **6** | **4** | **Developing a Quality Assurance System** |
| **6** | **5** | **Improving Educational Research** |
|  |  |  |
| TECHNICAL EDUCATION AND VOCATIONAL TRAINING | | |
| **3** | **1** | **Bringing TEVT in Line with Labour Market Demand** |
| **6** | **2** | **Establishing a Standards and Assessment System** |
| **4** | **3** | **Improving Teacher Training, Re-Training and Up-Grading** |
| **10** | **4** | **Upgrading Technical and Technological Facilities** |
| **5** | **5** | **Improving Curriculum and Methodology of Training** |
| **8** | **6** | **Diversification of Finance** |
|  |  |  |
| HIGHER EDUCATION | | |
| **8** | **1** | **Improving Higher Education Management and Finance** |
| **5** | **2** | **Intensifying Higher Education Reforms for Improving Quality and**  **Effectiveness** |
| **9** | **3** | **Establishing a More Effective Policy Process** |
|  |  |  |
| SCIENCE AND TECHNOLOGY | | |
| **10** | **1** | **Improving Physical Facilities of Universities and Research Institutes** |
| **7** | **2** | **Increasing Cooperation among Education-Science-Business Organizations** |
| **7** | **3** | **Expanding External/International Relations of Science and Technology** |
|  |  |  |
| NON-FORMAL AND DISTANCE EDUCATION | | |
| **4** | **1** | **Strengthening Central and Local Non-formal Education Centers** |
| **5** | **2** | **Developing Curriculum, Methodology, and Training** |
| **2** | **3** | **Establishing a Distance Education Network** |
|  |  |  |

**Notes: a. Priorities across sub-sectors (1=highest) are based on discussion among consultant team members and MOSTEC officials: 1=strategic planning; 2=distance education network; 3=market driven TEVT; 4=staff training; 5=instructional content and methodology; 6=standards, research, and evaluation; 7=cooperation; 8=finance; 9=policy implementation; and 10=facilities.**

**b. Priorities within sector (1=highest) are from discussion at National Seminar, 10 June 1999.**

## EDUCATION SECTOR MANAGEMENT

|  |  |
| --- | --- |
|  | |
| STRATEGY | PROJECTS |
| Establishment of an Annual MOSTEC Strategic Planning Cycle | 1. Establish agreement with key stakeholders for the introduction of a strategic planning cycle; 2. Clearly determine the personnel who will take responsibility for implementation of this management change and establish a steering committee; 3. Identify, select and train personnel who will perform the tasks of establishing and documenting processes, systems and performance indicators to support the planning cycle; 4. Progressively expand the planning process in subsequent annual cycles to include operational plans at lower levels in the education sector. |

## PRE-SCHOOL EDUCATION

|  |  |
| --- | --- |
|  | |
| STRATEGY | PROJECTS |
| Improving Training of Teachers and Managers | 1. Establishment of arrangements that will facilitate teacher retraining at local and central levels. 2. Provision of teaching aids and materials. 3. Support for teachers to learn active teaching methodologies. 4. Support for teachers to involve parents in the teaching-learning process with their children |
| Improving Physical Environments of Pre-Schools | 1. Provision of repair and maintenance services for preschool facilities. 2. Provision of equipment, toys and teaching aids and the creation of suitable learning environments. 3. Provision of local methodologist preschool specialists with the required back-up office equipment. |

## PRIMARY AND SECONDARY EDUCATION

|  |  |
| --- | --- |
|  | |
| STRATEGIES | PROJECTS |
| 1. Improving Pre-Service and In-Service Training of Teachers | 1. Promote more decentralized approaches to teacher training, re-training and up-grading at the school level and at centers. 2. Establish five regional teacher up-grading centers 3. Create an improved materials environment for complex schools and aimag schools with advanced training to upgrade the skills of teachers and build up human resource capacity. 4. Invest in the Pedagogical University and Teacher Training Colleges to strengthen their material environment and elevate human resource capacity. 5. Create new mechanisms and methods to encourage schools and teachers to take initiatives, develop school activities and up-grade teachers’ skills. 6. Renew professional and ethical requirements for teachers and establish mechanisms for fair assessment of teachers’ performance and payments for their work in accordance with outcomes. |
| 2. Improving School Facilities and Equipment | 1. Reconstruct, expand and construct new school buildings and dormitories, particularly in rural areas. 2. Renew furniture, training equipment and facilities in schools and dormitories and improve continuity of supply. 3. Provide stable heating and electricity supply to enable schools to operate during winter. |
| 3. Refining Curriculum, Methodology and Structure | 1. Develop more decentralized and liberalized policies in primary and secondary education to: 2. Enable schools to make decisions on around 50 percent of curriculum content. 3. Delegate methodology and technology management to schools. 4. Create flexible, multi-functional operational structures for schools to support implementation of reforms; 5. Assist in developing involvement and co-operation of beneficiary organizations, teachers, parents and students, to provide appropriate educational and training environments. 6. Develop special training policies and programs to involve mentally, physically disabled and vulnerable group children, and provide gender equality, particularly at senior level grades of secondary schools. 7. Increase access to school textbooks through enrichment of library facilities, an increase of training materials, and introduction of new information technologies. 8. Undertake research into the possibilities of implementing a 12 year education, to determine the precise financial, educational and social implications and to indicate the relevant preparatory activities that must be undertaken. 9. Develop appropriate forms of support for the development of non-government primary and secondary educational organizations. |
| 4. Developing a Quality Assurance System | 1. Review education content and assessment standards 2. Develop and apply indicators of performance, activities and organizational assessment in education institutions 3. Establish performance measurement for primary and secondary school students for analysis of results and comparative studies. 4. Establish a teacher performance evaluation system 5. Establish test and diagnosis centers to inform and assist communities 6. Establish linkages between monitoring and performance data and the education management information system |
| 5. Improving Educational Research | 1. Review and reorganize the structure of institutions concerned with education research and methodology and establishment of high quality research on education policy and management studies. Development of capacities amongst personnel to strengthen research work and provide appropriate information for decision making. 2. Establish regional education study & methodology centers to facilitate data collection and research in education management, content and methodology. 3. Train highly qualified researchers in education studies in country and overseas. 4. Support initiatives of public and non-public institutions in education studies and publishing to provide access to information for the public. |
|  |  |

## TECHNICAL EDUCATION AND VOCATIONAL TRAINING

|  |  |
| --- | --- |
|  | |
| STRATEGIES | PROJECTS |
| 1. Bringing TEVT in Line with Labour Market Demand | 1. Increase the scope of research on employment of the population and needs of labour market demand. 2. Identify vocational training needs of population. 3. Allow active involvement of community partnerships in vocational training activities. 4. Provide consultancy in professional orientation, acquisition of practical knowledge and selection of professions. |
| 2. Establishing a Standards and Assessment System | 1. Develop a national system of TEVT program standards 2. Develop a system of student evaluation based on the standards 3. Establish the legal basis for participation of social and economic partners 4. Develop alternative versions of assessment systems for vocational school graduates 5. Establish a system of evaluating the vocational training schools by quality of their graduates’ professional skills and rates of employment |
| 3. Improving Teacher Training, Re-Training and Up-Grading | 1. Make a survey on TEVT schools’ teachers’ specialisation, education and social state, define demand, and develop a policy to train and re-train TEVT schools’ teachers 2. Develop a program for engineers and master-teachers on training content, methodology and teaching methods 3. Take arrangements for provision of TEVT school teachers with necessary information successfully |
| 4. Upgrading Technical and Technological Facilities | 1. Conduct a survey on the current situation of TEVT’s material base, making a list of workshops and equipment necessary to be renovated 2. Define a framework of TEVT school activities (in terms of aimag, region or locality) and start a renovation process, beginning with schools which prepare high priority specialists |
| 5. Improving Curriculum and Methodology of Training | 1. Identify current needs for new textbooks required for technical education and vocational training. 2. Develop a policy for publication and distribution of textbooks for technical education and vocational training. 3. Develop a proposal on selecting and rewarding authors and editors of textbooks for Vocational Training and Production Centres, |
| 6. Diversification of Finance | 1. Approve the main normative sources of funding that will be used for technical education and vocational training. 2. Determine and mobilise different financing sources, including private sector resources, for technical education and vocational training. 3. Guarantee and establish the legal environment for specialised funds and other resources that will create financing sources for technical and vocational training. |
|  |  |

## HIGHER EDUCATION

|  |  |
| --- | --- |
|  | |
| STRATEGY | PROJECTS |
| 1. Improving Higher Education Management and Finance | 1. Create conditions for financially independent, sustainable development of higher education institutions and encourage management privatization of state-owned higher education institutions that meet established criteria 2. Create the structure necessary for developing higher education management capability 3. Develop appropriate higher education planning, fund management and accounting systems 4. Create the legal and financial environment to encourage income-generating activities |
|  |  |
| 2. Intensifying Higher Education Reforms for Improving Quality and Effectiveness | 1. Develop standards for masters and doctoral (Ph.D.) level education and enforce their implementation 2. Start academic program accreditation in selected professional fields 3. Upgrade higher education monitoring and evaluation activities 4. Strengthen the Higher Education Academic Network and Library Network 5. Move faculty research activities to a higher level 6. Create conditions for developing an appropriate structure for integration of training, research and business activities of universities. 7. Support initiatives and ideas for cooperative resource sharing activities among institutions that improve quality and efficiency of the higher education system 8. Develop and implement an appropriate system for improving the social and economic condition of higher education faculty |
|  |  |
| 3. Establishing a More Effective Policy Process | 1. Create a sound legal and financial basis for higher education development, for government support of state-owned and private institutions, and for autonomous financial and business activities of higher educational institutions 2. Improve management and planning of intellectual investment, and of human resources development policy |
|  |  |

## SCIENCE AND TECHNOLOGY

|  |  |
| --- | --- |
|  | |
| STRATEGY | PROJECTS |
| 1. Improving Physical Facilities of Universities and Research Institutes | 1. Development of a Master Plan for the science and technology sector. 2. Upgrading of laboratory facilities of 10 institutions undertaking research activity in the fields of chemistry, physics, biology, agriculture and renewable energy. 3. Provision of research equipment to experimental centers at the Institute of Chemistry, Renewable Energy Center, Electricity Center, Wool and Cashmere Center, Skin and Fiber Research Center, Institute of Mining, and Wood Processing Center. 4. Provision of equipment to “Inter-school Laboratory” at Technical University. 5. Upgrading of equipment and software for receiving, storing, and transmission of information at the Science and Technological Information Center; including linkages with international scientific and technological databases. 6. Establishment of an inter-sector laboratory to examine natural resources and raw materials. |
| 2. Increasing Cooperation Among Education-Science-Business Organizations | 1. Establishment of legal framework and standard requirements to encourage enhancement of cooperation between education, science and business organizations for science and technology transfer; 2. Support establishment of non-government scientific research units, development of various types of unions, foundations and associations within the framework of science and technology transfer. 3. Support establishment of inter-institutional laboratories shared by universities, research organizations, and local engineering centers. |
| 3. Expanding External-International Relations of Science and Technology | 1. Establishment of legal framework and bilateral or multilateral contracts with foreign countries. 2. Conducting joint research and experiments, and establishing joint plants and research laboratories; 3. Introduction of advanced technology and know-how, professional exchange programs, and training of Mongolian researchers in developed countries. 4. Establishment of linkages with international scientific information networks. |
|  |  |

## NON-FORMAL AND DISTANCE EDUCATION

|  |  |
| --- | --- |
|  | |
| STRATEGY | PROJECTS |
| 1. Strengthening Central and Local Non-Formal Education Centers | 1. Undertake survey to identify staff training, equipment and teaching materials requirements 2. Provision of necessary equipment and training materials, staff training and re-training 3. Training and re-training of central and local non-formal and distance education staff, both in-country and in countries with highly developed non-formal education systems 4. Conducting national workshops and seminars on non-formal education; 5. Implementing non-formal and distance education projects under the assistance and loans of multilateral and bilateral agencies |
| 2. Developing Curriculum, Methodology, and Training | 1. Undertake a survey to explore the current status, needs, and future prospects of nonformal and distance education, focusing on differences by age (e.g., children vs. adults), sex, educational status (e.g., dropouts vs. school completers) as well as identification of contents, methodology and methods 2. Test and implement contents, methodology and methods |
| 3. Establishing a Distance Education Network | 1. Study and evaluate the physical environment for conducting distance education in Mongolia and its potential utilization, using this information to formulate national policy 2. Coordinate issues related to joint utilization of distance education equipment at the national, regional and local levels 3. Coordinate national infrastructure development plan with distance education policy 4. Establish a distance education network, broadly involving Mongolian telecommunication, national and local radio, TV and other types of mass media 5. Obtain loans and financial assistance from international donor organizations |

## *APPENDIX 2 - SUMMARY OF STRATEGIES AND INDICATIVE COSTS*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a | b |  | | US$ |
| EDUCATION SECTOR MANAGEMENT | | | 200,000 | |
| 1 | 1 | Establishment of an Annual MOSTEC Strategic Planning Cycle | 200,000 |  |
| PRE-SCHOOL EDUCATION | | | 2,968,500 | |
| 4 | 1 | Training of Teachers and Managers | 562,000 |  |
| 10 | 2 | Improving Physical Environments of Preschools | 2,406,500 |  |
| PRIMARY AND SECONDARY EDUCATION | | | 32,189,000 | |
| 4 | 1 | Improving Teacher Pre-service and In-service Training | 4,314,000 |  |
| 10 | 2 | Improving School Facilities and Equipment | 25,060,000 |  |
| 5 | 3 | Refining Curriculum, Methodology and Structure | 700,000 |  |
| 6 | 4 | Developing a Quality Assurance System | 500,000 |  |
| 6 | 5 | Improving Educational Research | 1,615,000 |  |
| TECHNICAL EDUCATION AND VOCATIONAL TRAINING | | | 2,148,000 | |
| 3 | 1 | Bringing TEVT in Line with Labour Market Demand | 200,000 |  |
| 6 | 2 | Establishing a Standards and Assessment System | 200,000 |  |
| 4 | 3 | Improving Teacher Training, Re-Training and Up-Grading | 200,000 |  |
| 10 | 4 | Upgrading Technical and Technological Facilities | 1,200,000 |  |
| 5 | 5 | Improving Curriculum and Methodology of Training | 338,000 |  |
| 8 | 6 | Diversification of Finance | 10,000 |  |
| HIGHER EDUCATION | | | 3,215,000 | |
| 8 | 1 | Improving Higher Education Management and Finance | 2,100,000 |  |
| 5 | 2 | Intensifying Higher Education Reforms for Improving Quality and Effectiveness | 1,075,000 |  |
| 9 | 3 | Establishing a More Effective Policy Process | 40,000 |  |
| SCIENCE AND TECHNOLOGY | | | 4,850,000 | |
| 10 | 1 | Improving Physical Facilities of Universities and Research Institutes | 4,650,000 |  |
| 7 | 2 | Increasing Cooperation among Education-Science-Business Organizations |  |  |
| 7 | 3 | Expanding External/International Relations of Science and Technology | 100,000 |  |
| NON-FORMAL AND DISTANCE EDUCATION | | | 2,445,000 | |
| 4 | 1 | Strengthening Central and Local Non-formal Education Centers | 695,000 |  |
| 5 | 2 | Developing Curriculum, Methodology, and Training | 700,000 |  |
| 2 | 3 | Establishing a Distance Education Network | 1,050,000 |  |
|  |  |  | |  |

Notes: a. Priorities across sub-sectors (1=highest) are based on discussions among consultant team members and MOSTEC officials: 1=strategic planning; 2=distance education network; 3=market driven TEVT; 4=staff training; 5=instructional content and methodology; 6=standards, research, and evaluation; 7=cooperation; 8=finance; 9=policy implementation; and 10=facilities.

b. Priorities within sector (1=highest) are from discussion at the National Seminar, 10 June 1999.

## EDUCATION SECTOR MANAGEMENT

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  |  |
| STRATEGY | PROJECTS | Cost ITEMS | EST. cost |
| Establishment of an Annual MOSTEC Strategic Planning Cycle | 1. Establish agreement with key stakeholders for the introduction of a strategic planning cycle; 2. Clearly determine the personnel who will take responsibility for implementation of this management change and establish a steering committee; 3. Identify, select and train personnel who will perform the tasks of establishing and documenting processes, systems and performance indicators to support the planning cycle; 4. Progressively expand the planning process in subsequent annual cycles to include operational plans at lower levels in the education sector. | Capacity building project which will involve whole MOSTEC staff in learning, developing, implementing, revising a strategic plan. Also it will include a processes like defining the final product of the MOSTEC, contracting out, managing contracts, improving the financing policies and procedures. International and local training is required.    Technical assistance:   * Public sector strategic planning consultant (international-2 man-months); * Public sector finance consultant (international-2 man-months); * 2 local consultants (6 man-months each).   International and local training:   * Local training on Public Administration Reform; * International study tours on public sector reforms. | Capacity building:  $US 140,000  Training:  Local- 60 person  2 weeks each;  International-10 person 2 weeks each.  $US 60,000  Total cost:  $ US 200,000 |

## PRE-SCHOOL EDUCATION

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  |  |
| STRATEGY | PROJECTS | Cost ITEMS | EST. cost |
| 1. Improving Training of Teachers and Managers | 1. Establishment of an environment that will facilitate teacher retraining at local and central levels. 2. Improve provision of teaching aids and materials. 3. Support teachers in learning active teaching methodologies, how to involve parents and community in the teaching-learning process with their children | 1. 700 principal 2 week training in UB once in 4 years. Daily budget including accommodation-US$ 10 per night; 2 weeks-10\*14=140; return travel-fare-US$ 60; total 700\*(60+140)= US$ 140,000; 3500 teacher 2 week training at different locations; the cost per person on average US$ 6; total 3500\*(6\*14)= US$ 294,000. 2. 10 types of teaching materials 160 pages each for 3500 kindergarten teachers. Cost of 1 page writing is US$10; authors cost = 10\*160\*10=US$ 16,000; printing cost at US$ 0.02 per page =3500\*0.02\*160\*10= US$ 112,000. | 1. US$ 434,000 2. US$ 128,000   Total Cost:  US$ 562,000 |
| 2. Improving Physical Environments of Pre-Schools | 1. Provision of repair and maintenance services for preschool facilities. 2. Provision of equipment, toys and teaching aids and the creation of suitable learning environments. 3. Provision of local preschool methodologists with the required office equipment. 4. Improve supply of children books and manuals. | 1. Moderate repair of each state preschool once in 5 year time at cost US$3000 per school. Repair cost =634\*3000= US$ 1,902,000; 2. 100,000 children toys at US$ 2 and books at US$ 2 supplied; Toys cost = 100,000\*2=US$ 200,000; Book cost = US$ 200,000. 3. Each methodologist in 22 aimags provided with following set: Computer at US$ 1,600; Printer at US$ 650; Overhead projector at US$ 500; Copier at $ 2000; total US$ 4,750; Methodologist equipment cost = 22\*4,750= US$ 104,500 | 1. US$ 1,902,000 2. US$ 400,000 3. US$ 104,500   Total cost:  US$ 2,406,500 |

## PRIMARY AND SECONDARY EDUCATION

|  |  |  |  |
| --- | --- | --- | --- |
|  | |  |  |
| STRATEGY | PROJECTS | Cost ITEMS | EST. cost |
| 1. Improving Pre-Service and In-Service Training of Teachers | 1. Promote more decentralized approaches to teacher training, re-training and up-grading at the school level and at centers. 2. Create an improved materials environment for complex schools and aimag schools with advanced training to upgrade the skills of teachers and build up human resource capacity. 3. Establish regional teacher retraining centers; 4. Invest in the Pedagogical University and Teacher Training Colleges to strengthen their material environment and elevate human resource capacity. 5. Improve government support policies and methods for encouraging schools and teachers to take initiatives, develop school activities and up-grade teachers’ skills. | 1. 5 Regional teacher retraining centers with initial investments: Computers 10 peace US$ 16,000; A copying machine US$ 4,000; Printing equipment US$ 9,000; others US$ 1,000. So total investments for each Center = US$ 30,000. Regional center investment = 5\*30,000 = US$ 150,000; 2. Strengthening Pedagogical Institutions Project (including all 6-8 institutions) which will have the following activities: Strengthening institutional capacity; Curriculum reform; Faculty Development and Course material development. US$ 2,000,000. Investments in pedagogical institutions: Shared Training material production shop US$ 500,000 3. Scholarships to Pedagogy Students: 1600 students are enrolled in Pedagogy institutions each year, tuition fees at US$ 260 per year. 1600\*260\*4= US$ 1,664,000 | 1. US$ 150,000 2. US$ 2,500,000 3. US$ 1,664,000   Total Cost:  US$ 4,314,000 |

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| --- | --- | --- | --- |
| 2. Improving School Facilities and Equipment | 1. Reconstruct, expand and construct new school buildings and dormitories, particularly in rural areas. 2. Renew furniture, training equipment and facilities in schools and dormitories and improve continuity of supply. 3. Provide stable heating and electricity supply to enable schools to operate during winter. | 1. Reconstruction, expansion of old schools, dormitories, furniture supply, building required number of new schools: Indicative costs are US$ 25,000,000 (from document presented to the Donors Meeting),      1. Heating: continue with ESDP-I efforts of providing solar energy systems to small scale schools. Another 30 schools at US$ 2,000. Solar Energy for electricity: 30\*2,000= US$ 60,000. | 1. US$ 25,000,000 2. US$ 60,000   Total Cost:  US$ 25,060,000 |
| 3. Refining Curriculum, Methodology and Structure | 1. Develop more decentralized and liberalized policies in primary and secondary education. 2. Develop special training policies and programs to involve mentally, physically disabled and vulnerable group children, and provide gender equality, particularly at senior level grades of secondary schools. 3. Increase access to school textbooks through enrichment of library facilities, an increase of training materials, and introduction of new information technologies. 4. Undertake research into the possibilities of implementing a 12 year education, to determine the precise financial, educational and social implications and to indicate the relevant preparatory activities that must be undertaken. 5. Develop appropriate forms of support for the development of non-government primary and secondary educational organizations. | 1. Strengthening library facilities for all schools US$ 500,000; 2. Study of 12-year schooling system,   US$ 200,000 | 1. US$ 500,000 2. US$ 200,000   Total cost  US$ 700,000 |

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| 4. Developing a Quality Assurance System | 1. Review education content and assessment standards 2. Develop and apply indicators of performance, activities and organizational assessment in education institutions 3. Establish performance measurement for primary and secondary school students for analysis of results and comparative studies. 4. Establish a teacher performance evaluation system; 5. Establish test and diagnosis centers to inform and assist communities; 6. Establish linkages between monitoring and performance data and the education management information system | 1. Overall cost for the strategy is estimated to be US$ 500,000 | Total cost :  US$ 500,000 |
| 5. Improving Educational Research | 1. Review and reorganize the structure of institutions concerned with education research and methodology and establishment of high quality research on education policy and management studies. Development of capacities amongst personnel to strengthen research work and provide appropriate information for decision making. 2. Establish regional education study & methodology centers to facilitate data collection and research in education management, content and methodology. 3. Train highly qualified researchers in education studies in country and overseas. 4. Support initiatives of public and non-public institutions in education studies and publishing to provide access to information for the public | 1. Strengthening education research institutions, project cost US$ 600,000; 2. Train highly qualified researchers abroad: to provide assistance to 6-7 students at US$ 35,000 per year including tuition fee and allowance. Travel fair at US$ 5000 for each. 7\*(35,000\*4+5000)= US$ 1,015,000 | 1. US$ 600,000 2. US$ 1,015,000   Total cost:  US$ 1,615,000 |

## TECHNICAL EDUCATION AND VOCATIONAL TRAINING

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| STRATEGY | PROJECTS | cost ITEMS | EST. cost |
| 1. Bringing TEVT in Line with Labour Market Demand | 1. Increase the scope of research on employment of the population and needs of labour market demand. 2. Identify vocational training needs of population. 3. Allow active involvement of community partnerships in vocational training activities. 4. Provide consultancy in professional orientation, acquisition of practical knowledge and selection of professions. | 1. Labor market survey US$ 200,000 | Total cost :  US$ 200,000 |
| 2. Establishing a Standards and Assessment System | 1. Develop a national system of TEVT program standards 2. Develop a system of student evaluation based on the standards 3. Establish the legal basis for participation of social and economic partners 4. Develop alternative versions of assessment systems for vocational school graduates 5. Establish a system of evaluating the vocational training schools by quality of their graduates’ professional skills and rates of employment | 1. TEVT new curriculum and standard development based on labor market survey, approval, publication. US$ 200,000 | Total cost  US$ 200,000 |

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| 3. Improving Teacher Training, Re-Training and Up-Grading | 1. Make a survey on TEVT schools’ teachers’ specialization, education and social state, define demand, and develop a policy to train and re-train TEVT schools’ teachers 2. Develop a program for engineers and master-teachers on training content, methodology and teaching methods 3. Take arrangements for provision of TEVT school teachers with necessary information successfully | 1. Retraining of Faculty members US$ 200,000 | Total cost:  US$ 200,000 |
| 4. Upgrading Technical and Technological Facilities | 1. Conduct a survey on the current situation of TEVT’s material base, making a list of workshops and equipment necessary to be renovated; 2. Define a framework of TEVT school activities (in terms of aimag, region or locality) and start a renovation process, beginning with schools which prepare high priority specialists | 1. Survey of new equipment required to provide training according to new curricula. US$ 200,000. 2. Equipment supply, procurement , delivery, installation US$ 1,000,000 | Total cost:  US$ 1,200,000 |
| **5. New textbook development and supply** | 1. Identify current needs for new textbooks required for technical education and vocational training. 2. Develop a policy for publication and distribution of textbooks for technical education and vocational training. 3. Develop a proposal on selecting and rewarding authors and editors of textbooks for Vocational Training and Production Centres, | 1. New textbook requirement survey and bidding for authors: US$ 50,000. 2. New textbook development and supply . 15,000 students each year to enroll in TEVT schools. Preparation of textbooks for 30 different new vocational training specialization. For each specialization 30\*2=60 different textbook development and printing. Authors cost $ 10 per page. Each textbook on average 240 pages. Authors cost: 10\*240\*60=US$ 144,000 Printing cost $ 0.02 per page. 0.02\*240\*60\*500= US$ 144,000. | 1. **US$ 50,000** 2. **US$ 288,000**   Total cost:  US$ 338,000 |
| 6. Diversification of Finance | 1. Approve the main normative sources of funding that will be used for technical education and vocational training. 2. Determine and mobilize different financing sources, including private sector resources, for technical education and vocational training. 3. Guarantee and establish the legal environment for specialized funds and other resources that will create financing sources for technical and vocational training. | 1. Normative cost basis survey, development , approval. | **1. US$ 10,000**  Total cost  US$ 10,000 |

## HIGHER EDUCATION

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| STRATEGY | PROJECTS | Cost ITEMS | EST. cost |
| 1. Improving Higher Education Management and Finance | 1. Create conditions for financially independent, sustainable development of higher education institutions and encourage management privatization of state-owned higher education institutions that meet established criteria 2. Create the structure necessary for developing higher education management capability 3. Develop appropriate higher education planning, fund management and accounting systems 4. Create the legal and financial environment to encourage income-generating activities | 1. Improve the higher education Government support by improving procedures for student loans and assistance. Higher Educational institutions are too vulnerable and dependent on student fees which is itself dependent on enrolled students' parents' financial capability. Strengthening of the Student loan scheme so the actual cash is received by the higher educational institution. The State Training Fund has started its activities from 1993. Students should repay loans within 6 years after graduation, i.e., about year 2001, 2002. Loan and assistance for State Training Fund for the following 5 years US$ 400,000 each year for funding loans and assistance. 2. Support privatization of higher education institutions. Developing policies, financial incentives. US$ 100,000 | 1. US$ 2,000,000 2. US$ 100,000   Total cost  US$ 2,100,000 |

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| 2. Intensifying Higher Education Reforms for Improving Quality and Effectiveness | 1. Develop standards for masters and doctoral (Ph.D.) level education and enforce their implementation 2. Start academic program accreditation in selected professional fields 3. Upgrade higher education monitoring and evaluation activities 4. Strengthen the Higher Education Academic Network and Library Network 5. Move faculty research activities to a higher level 6. Create conditions for developing an appropriate structure for integration of training, research and business activities of universities. 7. Support initiatives and ideas for cooperative resource sharing activities among institutions that improve quality and efficiency of the higher education system 8. Develop and implement an appropriate system for improving the social and economic condition of higher education faculty | 1. Develop standards and requirements for Master and Doctor Degrees: US$ 20,000; 2. Strengthen Higher education Research activities, integration of training and business. US $ 200,000. 3. Support Curriculum Development activities in for Higher education Economics and Business administration undergraduate Programs by supporting development, printing of new 30 textbooks for newly emerging subjects in Economics, Management, Accounting, Law, Marketing etc. Authors cost $ 15 per page. Each textbook on average 300 pages. Minimum number for printing each textbook is 4000. Authors cost: 15\*300\*30 = US$ 135,000 Printing cost $ 0.02 per page. 0.02\*300\*30\*4000= US$ 720,000. | 1. US$ 20,000 2. US$ 200,000 3. US$ 855,000   Total cost:  US$ 1,075,000 |
| 3. Establishing a More Effective Policy Process | 1. Create a sound legal and financial basis for higher education development, for government support of state-owned and private institutions, and for autonomous financial and business activities of higher educational institutions 2. Improve management and planning of intellectual investment, and of human resources development policy | 1. Survey, development, training and enforcement of appropriate policies and procedures US$ 40,000 | 1. US$ 40,000   Total cost:  US$ 40,000 |

**Science and Technology**

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| STRATEGY | PROJECTS | Cost ITEMS | EST. cost |
| 1. Improving Physical Facilities of Universities and Research Institutes | 1. Development of a Master Plan for the science and technology sector. 2. Upgrading of laboratory facilities of 10 institutions undertaking research activity in the fields of chemistry, physics, biology, agriculture and renewable energy. 3. Provision of research equipment to experimental centers at the Institute of Chemistry, Renewable Energy Center, Electricity Center, Wool and Cashmere Center, Skin and Fiber Research Center, Institute of Mining, and Wood Processing Center. 4. Provision of equipment to “Inter-school Laboratory” at Technical University. 5. Upgrading of equipment and software for receiving, storing, and transmission of information at the Science and Technological Information Center; including linkages with international scientific and technological databases. 6. Establishment of an inter-sector laboratory to examine natural resources and raw materials. | 1. S&T sector Mater Plan - US$ 200,000 2. Laboratory equipment for research 10 institutions: US$ 4,000,000 (from material for Donors Meeting) 3. Support export-oriented industry research US$ 300,000 4. S$T Information center hardware and software development and upgrading US$ 150,000 | 1. US$ 200,000 2. US$ 4,000,000 3. US$ 300,000 4. US$ 150,000   Total cost:  US$ 4,650,000 |

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| 2. Increasing Cooperation Among Education-Science-Business Organizations | 1. Establishment of legal framework and standard requirements to encourage enhancement of cooperation between education, science and business organizations for science and technology transfer; 2. Support establishment of non-government scientific research units, development of various types of unions, foundations and associations within the framework of science and technology transfer. 3. Support establishment of inter-institutional laboratories shared by universities, research organizations, and local engineering centers. |  | 1. US$ 10,000 |
| 3. Expanding External-International Relations of Science and Technology | 1. Establishment of legal framework and bilateral or multilateral contracts with foreign countries. 2. Conducting joint research and experiments, and establishing joint plants and research laboratories; 3. Introduction of advanced technology and know-how, professional exchange programs, and training of Mongolian researchers in developed countries. 4. Establishment of linkages with international scientific information networks. | 1. Establishing Joint research and laboratories US$ 40,000; 2. Introduction of advanced “Know How” methods, professional exchange US$ 40,000; 3. Linkages with international scientific information network US$ 20,000 | 1. US$ 40,000 2. US$ 40,000 3. US$ 20,000   Total cost  US$ 100,000 |
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## Non-Formal and Distance Education

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| STRATEGY | PROJECTS | Cost ITEMS | EST. cost |
| 1. Strengthening Central and Local Non-Formal Education Centers | 1. Undertake survey to identify staff training, equipment and teaching materials requirements 2. Provision of necessary equipment and training materials, staff training and re-training 3. Training and re-training of central and local non-formal and distance education staff, both in-country and in countries with highly developed non-formal education systems 4. Conducting national workshops and seminars on non-formal education | 1. Non-formal training needs survey US$ 150,000 2. Staff training and retraining: international 2 month training courses for 30 Non-formal training center methodologists: (5,000\*2+1,500)\*30= US$ 345,000 Local 4 week training of 1000 non-formal educators in UB. Daily budget including accommodation-US$ 10; 2 weeks 10\*14=140; return travel fare- US$ 60; total 1000\*(60+140)= US$ 200,000 | 1. US$ 150,000 2. US$ 545,000   Total cost:  US$ 695,000 |
| 2. Developing Curriculum, Methodology, and Training | 1. Undertake a survey to explore the current status, needs, and future prospects of nonformal and distance education, focusing on differences by age (e.g., children vs. adults), gender, educational status (e.g., dropouts vs. school completers) as well as identification of contents, methodology and methods 2. Test and implement contents, methodology and methods | 1. Non-formal training needs survey US$ 100,000 2. Non-formal training curriculum development US$ 100,000 3. Development, printing, delivery of training materials US$ 500,000 | 1. US$ 100,000 2. US$ 100,000 3. US$ 500,000   Total cost  US$ 700,000 |

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| 3. Establishing a Distance Education Network | 1. Study and evaluate the physical environment for conducting distance education in Mongolia and its potential utilization, using this information to formulate national policy 2. Coordinate issues related to joint utilization of distance education equipment at the national, regional and local levels 3. Coordinate national infrastructure development plan with distance education policy 4. Establish a distance education network, broadly involving Mongolian telecommunication, national and local radio, TV and other types of mass media | 1. 2 Local consultants for assessing, estimating, making proposal for Distance education Network, organizing bidding and training distance education network staff, US$ 20,000; 2. Equipment purchase, delivery, installation US$ 1,000,000; 3. Initial operating expenses US$ 20,000; 4. Training cost US$ 10,000 | 1. US$ 20,000 2. US$ 1,000,000 3. US$ 20,000 4. US$ 10,000   Total cost:  US$ 1,050,000 |

APPENDIX 3 - Summary Assessment of MOSTEC’s Human Resource Development

**and Education Sector Master Plan (1994) Implementation1 June 1999**

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| **Activities** | **Projects and Programs** | **Interventions Made** | **Present Status and Outcomes** |
| I. Enhance basic and general education | 1. Encourage alternative educational structures and delivery systems 2. Make design, printing, distribution, and use of instructional materials a priority 3. Improve use of teachers | ADB assisted Education Sector Development Program (ESDP) and TA: Institutional Strengthening of the Education Sector  DANIDA project support to primary, secondary education development, 1994-1998  Primary school teachers distance retraining project, UNICEF, 1997-2000  Improvement of contents of the history and social science subjects at Pedagogical University, TEMPUS –TACIS, 1997-2000  ESDP and ADB TA 2719  Mongolian Foundation for Open Society (MFOS: Soros) “School 2001:” School-Based Reform Program, 1998-2001; as well as a variety of other programs spanning the entire education sector | Activity 1.1   1. Structure of the secondary education changed from 6+2+2 to 4+4+2, 2. Teacher training institutions start to offer multi-subject degrees 3. Teachers’ salary scheme was related to experience and skills, and additional reward system was introduced 4. Skill level degrees (consultant teacher, leading teacher, methodologist teacher) were introduced since 1995 5. Textbook publication was decentralised and private sector involvement was increased 6. Textbook production and distribution policy was developed 1998 7. DANIDA project completed successfully 8. UNICEF distance training of primary teachers   Activity 1.2   1. Under ESDP 25 new textbooks with accompanying teacher guides being published for secondary schools as priority. 2. Use of alternative textbooks was allowed, textbooks are required to be developed with instructions to teachers, and student workbooks, 3. Publication of the textbooks is organised based on open tender, thereby improving content, quality and design significantly 4. Aimag Education Centres were provided with printing/copying machines to support locally relevant teaching aid development 5. Textbook distribution through school libraries was introduced 6. 60% of obligatory textbooks were renewed and printed   Activity 1.3   1. Restructuring of the secondary education program is being implemented and new types of schools as complex, upper schools (5-10, 9-10 grades) were established. A total of 138 schools were covered by the restructuring program 2. Contents of all levels of education were reviewed and pre-school, primary and secondary education content standards were developed 3. New system of teachers’ grade level of specialisation was introduced 4. Student centred learning methodologies were developed and introduced 5. School-based reform and innovation project of secondary education initiated in 7 aimags |

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| II. Reform higher education for national development purposes | 1. Rationalise the role and mission of higher education institutions 2. Implement reforms for increased autonomy in higher education 3. Enhance efficiency of higher education 4. Strengthen management skills of entrepreneurs | ADB TA 2719: higher education academic and institutional management consultancies; higher education library management  ADB Loan 1508, 1507: TA on pre- and in-service teacher education, business and economics curriculum development; higher education accreditation; developing MBA program; higher education consulting services  Reform of economics instruction in higher education, TACIS at National University  Strengthening of teaching capacity in Management, Economics and related subjects, AusAID  TEMPUS, Pre-JEP, JEP and Compact projects | Activity 2.1   1. Based on new education laws (1995, 1998) higher education institutional mission and objectives were developed 2. New classification of institutions requirements were developed and introduced 3. Academic networking and EMIS is under development and pilot use 4. Government resolution No.31 for integration of research institutes into universities was made in 1997, research capacity was strengthened 5. Credit system was introduced 6. National Council for Higher Education Accreditation was established, and accreditation of higher education institutions started with 5 already accredited and 6 more under review   Activity 2.2   1. Consortium of universities was established in 1996 and it takes part in organizing student enrolment 2. State training fund was established and 60 percent of new students of state owned universities, and 10 percent of students of private institutions are covered by student loan schemes. Up to 60% of private institutions can get loan, if it is accredited 3. Consortium of Management Development Institutions was established   Activity 2.3   1. Consultancy services and training for higher education administrators (both academic and institutional) and faculty were provided 2. Business, economics curriculum development consultancy was provided, and new curriculum and programs were introduced 3. Information on higher education institutions is published regularly and distributed 4. MOSTEC also prepared and published a book on degrees and specialities of higher education 5. By now 11 institutions of higher learning was accredited 6. Licensing of the schools was renewed. 7. All higher education institutions prepared self-study reports 8. Library resources were increased significantly. Particularly in the areas of business, management and economics 9. Library networking is going to be operational   Activity 2.4   1. All management development institutions start to offer short term courses for business people 2. MBA program with international standards is under development 3. 51 faculty members of MDIs completed masters and higher degrees abroad |

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| **III. Rationalise systems for vocational training** | 1. Introduce basic skills training into general secondary education 2. Develop post-secondary technical education 3. Integrate, privatise vocational training outside general secondary education | ADB TA 2719: TEVT policy consultancy | Activity 3.1   1. School of young designers was established in UB with the branches in 14 aimags, and 3 schools in UB and Darkhan are combining vocational and general education   Activity 3.2   1. Technical colleges and research institutes were joined to Technical university   Activity 3.3   1. National Council for TEVT was established and program of TEVT development was approved (Government Resolution No. 41, March, 1998) |
| **IV. Provide learning opportunities for out-of-school youth and adults** | 1. Deliver improved literacy, numeracy, life skills to youths, adults 2. Provide information on social issues through non-formal, distance education | “Learning for Living” project, UNESCO/DANIDA, 1997-2000  Education for dropouts project, UNICEF, 1994-2001  Save the Children Foundation nonformal education project for Ulaanbaatar street children  Strengthening of national non-formal education centre, KOICA, 1998-2000 | Activity 4.1   1. National program of non-formal education was approved and Non-formal Education Centre was established in MOSTEC 2. Needs analysis was made and aimag Education and Cultural Centres were provided a position of methodologist, in more than 100 soms centres of enlightenment were established 3. Literacy training for over 15 years old people was provided to more than 10000 persons 4. Small scale schools for dropouts were established   Activity 4.2   1. UNESCO completed “GOBI Women” distance learning project, within which radio stations were established in 8 aimags, equipment was provided, and radio and TV sessions were offered; successor is “Learning for Living” project 2. Significant number of teaching and learning materials were produced and distributed 3. Weak part of non-formal education program is creative activities, in-service training and self study programs |
| **V. Improve educational management** | 1. Strengthen management skills within HER Sector 2. Develop accounting and Norm-based budgeting systems 3. Reform HER finance to promote equity and cost-effectiveness | ADB TA 2719: management and supervision consultancy, and  ADB Loans 1507 and 1508. | Activity 5.1   1. Several training institutions were involved in training of education managers (IAMD, NUM, PU) 2. Training needs analysis of education administrators was conducted and based on this survey training programs were developed. Training program for education managers is started 3. Plan for training of local administrators, business people, higher education managers, MOSTEC and Government officials is developed and its implementation is commenced in 1998 4. a study tour and short training were provided for MOSTEC and Government officials   Activity 5.2   1. Education accounting system has not developed yet, however per pupil variable cost funding regulation is developed and a methodology for budgeting and tuition fee determination was approved by MOSTEC 2. MOSTEC organised a training for education accountants 3. Computer and relevant software for accounting were provided to post-secondary education institutions 4. Auditing of educational institutions is started 5. Appropriate amendments to education laws were made in terms of non-profit and profit educational institutions and governance of higher education institutions   Activity 5.3   1. Based on decentralisation policy, aimags and soms are responsible for allocation of education budgets 2. Higher education student loan system was reformed and student centred loan scheme was introduced |
| VI. Increase efficiency of MOSE structures and operations | 1. Redirect activities to encourage evaluate effectiveness of HER institutions 2. Improve information and planning linkages between HER institutions and employers 3. Restructure the MOSE | ADB TA 2659, ADB TA 2719, and ADB Loans 1507 and 1508 | Activity 6.1   1. Reform of education inspectorate board is taking place and it is becoming an regulatory agency of the Government under supervision of MOSTEC 2. Duties and functions of the education inspectorate board are redefined inn new amendments to education laws 3. National testing of primary and secondary school graduates is introduced and periodic independent testing for new students of higher education is started 4. Further strengthening of education inspectorate board is needed   Activity 6.2   1. Alumni associations were established at Universities colleges 2. Management human resource requirements and training needs analysis was conducted 3. Tracer studies were conducted by several institutions   Activity 6.3   1. Reform of MOSE was implemented. New structure of the MOSTEC consists of 4 departments (Department of strategic management and planning, Department of policy implementation coordination, Department of public administration and management, Department of information, monitoring and evaluation) and External relations division 2. Department of information, monitoring and evaluation was created within MOSTEC |

**APPENDIX 4 - THE EDUCATIONAL SYSTEM OF MONGOLIA**

Years

In

Level Age

Ph.D. (60

Credits,

3-4 Years)

MA/MS (30

Credits,

1-2 Years)

BA/BS (120

Credits,

4-5 Years)

# UNIVERSITY\*

20

19

18

17

16

15

14

13

12

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2-

1-

\*The first medical degree (M.D.) requires 6 years of study.

Source: Adapted from *Mongolian Universities and Colleges (Handbook).* Ulaanbaatar: Mongolian Universities Consortium, 1998.

(1-2.5 Years)

# TECHNICAL AND

VOCATIONAL SCHOOL

*(2 Years)*

UPPER SECONDARY SCHOOL



## KINDERGARTEN

MA (30 Credits,

1-2 Years)

BA (120 Credits,

4-5 Years)

Diploma (90 Credits,

3 Years)

# COLLEGE

## *(4 Years)*

## PRIMARY SCHOOL

*(4 Years)*

LOWER SECONDARY SCHOOL

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