



Universal Salt Iodization

Sustainability Framework

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Acronyms

AJK	Azad Jamu and Kashmir
DFPs	District Focal Persons
DG	Director General
DHO	District Health Officer
DNO	District Nutrition Officer
EDO	Executive District Officer
FATA	Federally administered Tribal Areas
GB	Gilgit Baltistan
GAIN	Global Alliance for Improved Nutrition
GoP	Government of Pakistan
HH	Household
ICT	Islamabad capital territory
IDD	Iodine deficiency disorders
KIO ₃	Potassium Iodate
KP	Khaiber Pukhtunkhwa
MI	Micronutrient Initiative
MoNHSR&C	Ministry of National Health Services, Regulations and Coordination
NFA	National Fortification Alliance
NGOs	Non Governmental Organizations
P&D	Planning and Development
ppm	Parts per million
PSQCA	Pakistan Standards Quality Control Authority
QCL	Quality Control Laboratories
SPs	Salt Producers
SPUs	Salt Producing Units
UNICEF	United Nations Children's Fund
USI	Universal salt iodization
WFP	World Food Program
WHO	World Health Organization
µg	Micrograms (millionths of a gram)
<	Less than
>	More than

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Introduction

Iodine deficiency disorders (IDD) remain the leading cause of physical, neurological and mental impairment affecting over 2 billion people worldwide. Southeast Asia, Africa and the Eastern Mediterranean take a major share in shouldering the burden of IDDⁱ.

Iodine is Essential for Health and Developmentⁱⁱ Iodine is essential for human health and physical and mental development. It is a mineral needed for an adequate and complete diet. It allows individuals to have a good performance in intellectual activities to be alert, and to have adequate movement coordination. It helps the thyroid gland, located in the front area of the neck, to produce thyroid hormones. These are linked to the proper functioning of the brain, the nervous system, and the regulation of the energy metabolism.

Iodine deficiency disorders cover a spectrum of disabilities resulting from iodine deficiency including goitre, cretinism, deaf-mutism, squint, spastic diplegia, mental retardation, dwarfism, stillbirths, congenital anomalies and increased perinatal mortalityⁱⁱⁱ.

Furthermore, unattended iodine deficiency may cause permanent and irreversible damage to intellectual performance that can impair scholastic and physical working capacity^{iv v}. The consequences of iodine deficiency in terms of reduction in mental and physical capacity, along with other micronutrient deficiencies, may cause as much as a 5 per cent fall in gross domestic product (GDP), which is certainly much greater than the percentage of GDP required for the processing of iodized salt and prevention of IDD^{vi}.

Consequences in Children are Reduced learning capacity, Low academic performance and higher dropout rates, Mental retardation, Growth problems and dwarfism, Deaf – Muteness and other Neurological disorders

Consequences in Adults include Fatigue, Poor job performances, Low resistance to cold temperatures

Consequences in Pregnancy range from Miscarriages, Stillbirths to Interference in the fetal brain development and Birth of babies with severe mental retardation - known as cretinism - which affects the psychomotor development of infants.

The Importance of Iodizing Salt

The health problems derived from iodine insufficiency in the human body can be prevented by following a simple and low-cost measure: iodizing the salt for human consumption.

Iodizing salt is the most effective, simple, and low-cost health measure; effortless and low-cost way of providing the necessary iodine for people to stay healthy. The population's access to iodized salt is a worldwide objective; this is why many countries enforce this preventive measure as a mandatory national policy.

Universal salt iodization (USI) is the only viable and sustainable method of complementing dietary iodine supply and improving the iodine status of the population; it is also the most cost effective. Neighboring countries like China and Iran have achieved remarkable success in salt iodization in a relatively short period of time.

In China, salt iodization coverage has increased from 65 per cent in 1995 to 88 per cent in 2005 with a decrease in total goitre prevalence rate from 11.8 per cent in 1995 to 2.7 per cent in 2005. This was accompanied by a marked reduction in the number of schoolchildren born with mild mental retardation as a result of the implementation of a USI program in the country^{vii}.

In Iran, the household coverage of iodized salt has increased to 90 per cent after the promulgation of iodized salt legislation in 1994. This has resulted in a substantial reduction in endemic goitre prevalence from 53.8 per cent in 1996 to 13.9 per cent in 2001^{viii}.

Background

Traditionally, Pakistan has been amongst the lowest iodized salt-consuming countries, with household iodized salt consumption estimated at 17 per cent^{ix}— much lower than the average consumption of 68 per cent in south Asian countries^x. Without any geographical distinctions, IDD are a major public health problem in both mountainous areas and the plains of Pakistan with more than half of the population being at risk of IDD. It has been estimated that in Pakistan each year over 1.7 million newborn babies are at an increased risk of brain damage due to the poor iodine status of their pregnant mothers^{xi}.

Micronutrient Initiative (MI) has been supporting the Government of Pakistan to achieve Universal Salt iodization to eliminate Iodine Deficiency Disorders in Pakistan. The key areas of support include technical and operational support to salt processors, support for program monitoring and quality control, legislation and operationlization of regulatory mechanisms.

A key challenge is to make the program sustainable, without any external partner support. Therefore, MI proposes to support the development of a sustainability framework for the program.

Since the early 1990s, global efforts to introduce universal salt iodization worldwide have resulted in impressive progress. This progress has relied on effective multisectoral partnerships: Governments working with the salt industry, supported by international agencies and in functioning in coordination with the civic sector and expert groups. Each of these partners have gained experience from the past two decades, the lessons learned have been, in turn, incorporated into the policy, programming and implementation frameworks that sustain USI

Overview of Global Progress^{xii}

- ✚ Globally, 70% of households are consuming adequately iodized salt.
- ✚ 34 countries have achieved USI and another 28 are close to the goal.
- ✚ More than 120 countries are implementing USI programs.
- ✚ 84 million infants are protected annually from the risk of IDD.
- ✚ The number of countries where IDD remains a problem has dropped to 47.

History of salt iodization in Pakistan^{xiii}

Since the mid-1980s there have been multiple initiatives by the Government of Pakistan (GoP), with support from various development partners, to control IDD in the country through USI, including targeted initiatives for northern areas of the country. The National IDD Control Program was started in 1994, initially focusing mainly on the mountainous regions of Khyber Pakhtunkhwa and later covering the entire country. But all these initiatives had little effect on the availability and utilization of iodized salt due to limited capacity of the salt processors, irregular supply of potassium iodate (KIO₃), poor or absent monitoring, absence of a quality control system and weaknesses in the regulatory framework. After years of effort, iodized salt utilization at the household level had only reached 39.8 % in 2011^{xiv} compared to 17% in 2001^{xv}. Objective of this Assignment

The objective of this assignment is to develop a sustainability framework for the Universal Salt Iodization program. The framework will provide a road map for the government for institutionalizing the program and its components within their system.

Scope of work

The framework is developed in consultation with the key stakeholders like governments including Ministry of Health Services, Regulations and Coordination, Planning Commission, Departments of Health, Department of Food, Nutrition Cells,

Health Sector reforms units, Punjab Food Authority, PSQCA, National & provincial fortification alliances, Salt processors and partners.

The process for development of USI sustainability framework:

- Review of the salt iodization program documents and reports provided by MI with special reference to review of all program components including the existing revolving fund.
- Discussions and meetings with MI and WFP teams.
- Consultative meetings with the partners and key stakeholders at both national and provincial levels include.
 - Conduct interviews and meetings with concerned government officials/stakeholders which include:
 - Meetings at Federal level with Ministry of National Health Services, Regulation and Coordination, Ministry of Planning Development & Reforms, Regulatory Authorities, UNWFP, UNICEF, WHO, General pharmaceuticals.
 - Meetings with Provincial with provincial health and UN partners.
- Develop framework outline in consultation with MI and WFP.
- Development of draft framework with mechanisms to support development of enabling environment at the provincial and national levels for legislation on mandatory salt iodization with establishment of a quality control system to promote corrective actions and ensure quality of iodization, including specific roles and responsibilities of concerned government departments and salt processors.
- Sharing the draft framework with stakeholders, collect feedback at national level.
- Finalize Universal Salt Iodization Sustainability Framework Pakistan and share with MI.

What is sustainability?

There may be as many definitions of sustainability and sustainable development as there are groups trying to define it. All the definitions have to do with^{xvi}:

- Living within the limits
- Understanding the interconnections among economy, society, and environment
- Equitable distribution of resources and opportunities

However, different ways of defining sustainability are useful for different situations and different purposes. When examining whether the Universal Salt Iodization

program can be made sustainable, it is important to clarify the exact nature of sustainability. Below are some definitions of sustainability in USI context:

No reliance on donor funding in general

A common view of sustainability is total independence from donor funding. However, a precise definition of independence requires clarification. There exist multiple sources of funding which provide operational liquidity to programs which otherwise do not have enough public value to generate an unaided market for its retail. In the case of the Universal Salt Iodization program, it requires clarification whether iodization activities have enough private value to be realized through standard public dynamics. In other words, would the government be willing to Institutionalize the USI program in to their system and bear the cost associated with the implementation of the program. Indeed, it requires specification whether sustainability simply means independence from the foreign donors/private funding and institutionalize the USI program.

No reliance on specific assistance

Public health programs can receive multiple forms of assistance to achieve their goals. As such, freedom from assistance could be discussed as a potential goal in achieving sustainability. Assistance can be provided in the form of commodity provision (free iodine); subsidies on commodities (low-cost iodine); cash grants; loans on subsidized terms; equity; provision of technology at subsidized rates; subsidized training and logistics; or task sharing activities (such as government sponsored advertising, or mass education).

Some of the mechanisms of assistance above can be critical to the survival of public health campaigns such as the Universal Salt Iodization program. It is important to consider whether sustainability means independence from all or some of these forms of assistance. Thus, critical to the success of the program is the desire of individuals to accept a greater cost associated with such independence. Each mechanism has an associated cost implication for the program, and would need to be considered.

For this reason, various groups have created definitions of Sustainability and sustainable development, Sustainable community and society, Sustainable business and production and Sustainable agriculture

Programmatic Indicators to measure sustainable USI program^{xvii}

At least eight out of the following ten programmatic indicators should occur:

- An effective, functional national body (council or committee) responsible to the government for the national program for the elimination of IDD (this council

should be multidisciplinary, involving the relevant fields of nutrition, medicine, education, the salt industry, the media, and consumers, with a chairman appointed by the Minister of Health);

- Evidence of political commitment to universal salt iodization and the elimination of IDD;
- Appointment of a responsible executive officer for the IDD elimination program;
- A legislation or regulations on universal salt iodization (while ideally regulations should cover both human and animal consumption, if the latter is not covered this does not necessarily preclude a country from being certified as IDD-free);
- Commitment to assessment and reassessment of progress in the elimination of IDD, with access to laboratories able to provide accurate data on salt and urinary iodine;
- a program of public education and social mobilization on the importance of IDD and the consumption of iodized salt;
- Regular data on salt iodine at the factory, retail and household levels;
- Regular laboratory data on urinary iodine in school-aged children, with appropriate sampling for higher risk areas;
- Cooperation from the salt industry in maintenance of quality control; and
- a database for recording of results or regular monitoring procedures, particularly for salt iodine, urinary iodine and, if available, neonatal TSH, with mandatory public reporting.

Challenges and barriers towards Achieving USI in Pakistan^{xviii}

Though the salt industry in Pakistan has recorded significant improvements in recent years on salt iodization, a number of challenges still remain at the policy and operational levels to achieve universal salt iodization.

Adequacy of iodized salt

One of the major challenges is maintaining and further improving the quality of salt iodization at the production level. This includes both adequacy of iodization at ≥ 30 ppm iodine and uniform mixing of iodine in the salt. This uniform mixing is the key problem with some large and medium salt processors who use large processing equipment. Variations in the speed of these processing machines causes irregular salt feeding, together with non-continuous and irregular iodine flow, and these in turn lead to non-uniform integration of iodine in different batches of salt. Different measures are being taken, including the provision of dosing pumps to large salt processors, vigilant use of drip-feed controllers, and maintenance of constant speed in the salt-crushing *chakkis* (small grinding mills).

Monitoring and quality control

Sustained and continuous monitoring and quality control after withdrawal of donor support is another challenge, especially in the absence of designated MIs field officers and nutrition officers at the district level.

A two-pronged approach has been adopted to address the sustainability of monitoring and quality control. QCLs have been strengthened at the district level, while reference laboratories have been strengthened at the divisional level for validation and standardization of the QCLs. Technical assistance is being provided to the provinces by the development partners to formulate district-level nutrition programs, monitored and supervised by designated nutrition officers.

Current DHIS lacks indicators to gauge any progress and/or change in status.

Regulatory and enforcement mechanisms

Adequate regulatory and enforcement mechanisms in the absence of national or provincial legislation on mandatory USI are another challenge. Currently, pure food rules and district-level legislation are being used for enforcement but legislation has to be enacted to sustain enforcement. The MI field officers designated as focal nutrition points for USI receive inadequate assistance from provincial health departments compromising their ability to monitor and enforce the legal requirements for salt iodization. With the joint efforts of USI partners, work is in progress to enact provincial legislation on mandatory iodization of edible salt in Punjab, Khaiber Pukhtunkhwa, and Balochistan., and this will ultimately pave the way for national legislation on USI. Sindh is the only provinces where legislation on USI has been enacted in 2013

Availability of fortificant (potassium iodate)

Currently potassium iodate is being procured and supplied to salt processors through a self sustainable revolving fund managed by the MI and Genera is a custodian of the revolving fund. This arrangement of potassium iodate availability has been needs to be made available through this mechanism. Advocacy and consultative meetings have been initiated under the umbrella of the public sector to motivate and facilitate sustainability of the intervention.

Community awareness and demand generation

During the past few years, the supply side was targeted mainly to ensure the production and availability of iodized salt in the market. Few efforts were made to directly raise community awareness and generate demand through mass media. Communication and awareness raising were the mandate of UNICEF. However,

indirect approaches were adopted through school teachers and students, community health workers, doctors and practitioners, religious leaders and nongovernmental organizations (NGOs).

Coordination

The devolution of health to the provinces through constitutional amendment has created a gap and opportunity in the institutional arrangements.

Strong coordination and a lead in policy, planning and strategy guidance at the federal level by public sector has been one of the strengths of the USI Pakistan program.

The required technical and human resource capacity for policy, planning and coordination to ensure salt iodization at provincial level needs to be strengthened.

Pakistan USI Program Components

Following activities are being carried out under the joint MI-WFP initiative for implementation of Universal Salt Iodization program in the target districts of the country. The program was revitalized in 2006 and since then the main strategy was to extend technical & operational support, program monitoring and quality control, advocacy and legislation etc. Following are USI program components^{xix}:

A. Technical and operational support to salt processors

- Technical support to salt processors including modification/ addition of equipment for large and medium scale salt processors for uniform mixing of potassium iodate and quality assurance
- Training and capacity building of salt processors on adequate iodization and internal quality control.
- Technical assistance through field staff through their regular visits for supportive supervision and monitoring of the iodization process.

B. Support to the government for program monitoring and quality control

- Support to district and provincial health departments for monitoring to assist in enforcement and regulatory control.
- Support to government in monitoring and supervision by MI field staff i.e. provincial managers and USI field officers for the areas and districts of strengthened monitoring.
- Training and capacity building of staff from provincial and district Departments of Health

- Establishment and strengthening of the QCL at district and sub-district levels (in districts with large number of salt producers and salt production) and establishment of 6 to 10 reference laboratories at the zonal level.
- Regular monitoring of laboratories through the USI-Field Officers, for laboratory quality assurance.
- Program review and planning meetings.
- Training sessions for Sanitary Inspectors to support the quality control component.

C. Advocacy, legislation and regulatory mechanism

- Technical assistance to the government in formulation of provincial nutrition programs.
- Advocacy meetings with government departments and stake holders for promulgation of provincial legislation on mandatory edible salt iodization.
- Technical assistance to the GoP and DoH for formulation and development of regulatory framework and enforcement mechanism.
- Quarterly Provincial IDD Control Committee Meetings for advocacy and positioning of MI at the provincial level

D. Uninterrupted supply of fortificant - potassium iodate after withdrawal of subsidy

- Supporting the operationalization of a revolving fund established for supply of potassium iodate to salt processors on cost to cost basis, ensuring un-interrupted supply.

E. Uninterrupted supply of Iodization equipment (Drip Feeds & Drip Sets)

- Supporting the uninterrupted supply of Iodization equipments (drip feeds & drip sets) to salt processors on cost to cost basis through revolving fund established for supply of potassium iodate.

Potassium Iodate Supply Chain Mechanism^{xx}

The existing revolving fund mechanism for KIO₃ supply chain management is serving the purpose, as almost all the stakeholders/respondents interviewed were satisfied and the services provided by Genera Pharmaceuticals were in line with the contract agreement between MI and Genera. The current revolving fund mechanism is also a cost effective, as all the effects (Acceptability, availability, accessibility, quality and satisfaction) are being achieved against the cost per kilogram of KIO₃ (agreed by all the relevant stakeholders and fixed with consensus). It has been suggested by the program

partners that the current revolving fund mechanism shall continue till the USI program reaches 90% salt iodization level.

Current Role and Responsibilities of the Partners under MI-USI project

Partner	Currents Responsibilities
GoP	<ul style="list-style-type: none"> ▪ Policy guidance, support in programming and funding ▪ Coordination between provinces and different departments
Health Departments	<ul style="list-style-type: none"> ▪ Policy formulation and overall supervision and monitoring. ▪ Ensuring un-interrupted supply of potassium iodate in the market.
District Health Departments	<ul style="list-style-type: none"> ▪ Monitoring, supervision, quality control and enforcement ▪ Ensuring un-interrupted supply of potassium iodate in the market.
MI as overall monitor & technical agency	<ul style="list-style-type: none"> ▪ Providing financial and technical assistance for overall project management. ▪ Provision of technical and operational support and demand based maintenance of Salt Producing units and overall monitoring and supportive supervision ▪ Monitoring support to the GoP/ Provincial and District DoH and coordination with all partners/ stake holders. ▪ The implementation of different activities planned and executed with agency support. ▪ Active liaison with other stakeholders including Government health authorities at different levels, salt processors and partners like WFP, GAIN, WHO and UNICEF.
World Food Program (WFP)	<ul style="list-style-type: none"> ▪ Financial support for program implementation ▪ Communication and social mobilization activities ▪ Support in monitoring
UNICEF	<ul style="list-style-type: none"> ▪ Support advocacy and demand creation of iodized salt ▪ Coordination with other stake holders including CBOs/NGOs for successful implementation. ▪ Support advocacy with the government for legislation and stewardship of the program
Salt Processors	<ul style="list-style-type: none"> ▪ Responsible for program implementation with DoH. ▪ Ensure adequate iodization of all edible salt processed.

Partner	Currents Responsibilities
Opinion leaders / community	<ul style="list-style-type: none"> ▪ Role model by using and advocating use of iodized salt ▪ Dissemination of message on benefits of iodized salt and respond to misconceptions regarding use of iodized salt ▪ Identification of areas where iodized salt is not available
Pakistan Regulatory Authority, Punjab Food Authority, PSQCA	<ul style="list-style-type: none"> ▪ Standardizing the iodization level in edible salt at production and household level ▪ Formulation of Laws for mandatory edible salt iodization/ pure food rules ▪ Enforcement of the laws in their area of jurisdiction

Current USI Program Implementation through MI

Director Pakistan, The Micronutrient Initiative (25%)

- ✚ Visit and guide when and where support is required.
- ✚ Overall supervisor of this project

National Program Manager (NPM) IDD/USI (100%)

- ✚ Monitoring and supportive supervision
- ✚ Work closely with Provincial Program Managers, conduct monthly meetings of USI FOs and give feedback to all concerned.
- ✚ Generate monthly progress reports
- ✚ Coordinate with the partners of USI and other stake holders at National level.

USI Project Coordinator (100%)

- ✚ Support national manager in program supervision, monitoring, evaluation of the program.
- ✚ Provincial data review and analysis at national level along with program documentation and communication;
- ✚ Coordination with the provincial managers and Genera regarding KIO3 management and other activities.

Provincial Managers (PMs) (100%)

- ✚ Oversee the field activities in the provinces and manage & monitor USI Field Officers (USIFOs), District Salt Extender (DSE) and Quality Control Labs (QCL).
- ✚ Coordinate with USIFOs, DSE & DFPs (District Focal persons) for supportive supervision.

- ✚ Ensure that all planned activities are conducted in coordination with Executive District Officer (EDOs) Health, DFPs, PFPs and DGHSs, and desired support is available from them.

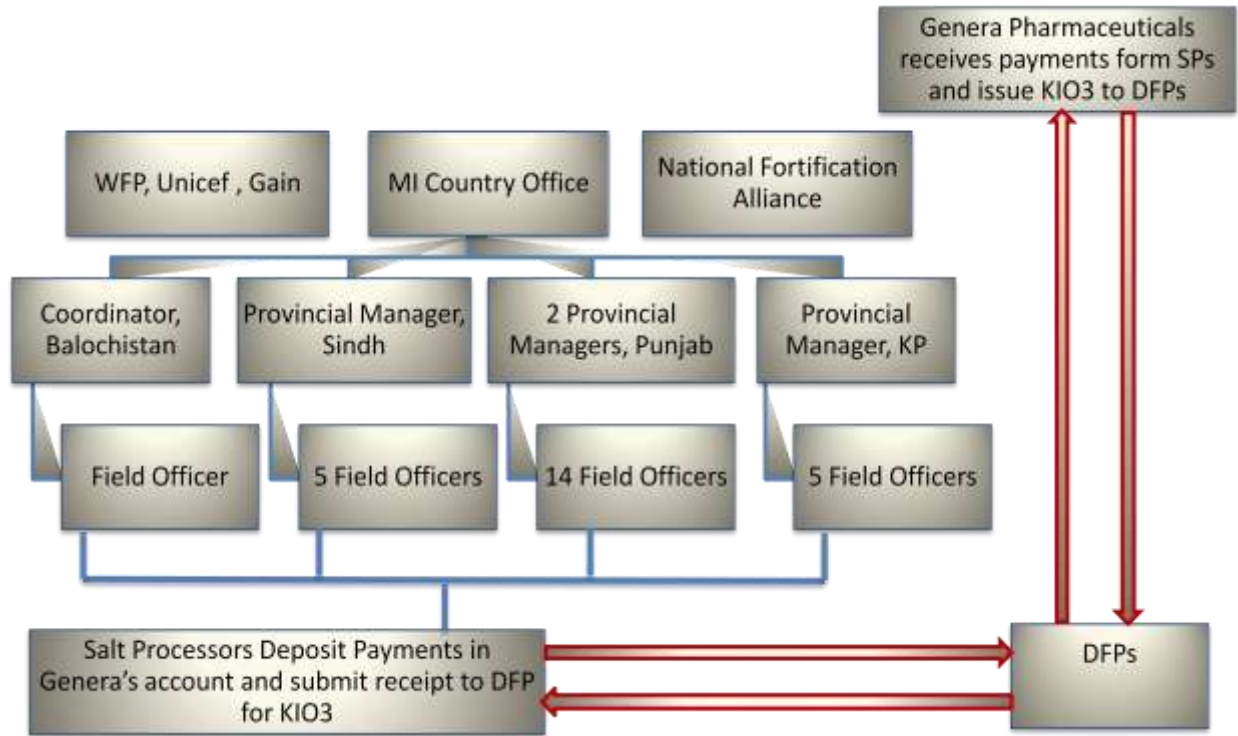
USI Field Officers (USIFOs) (100%)

- ✚ Responsible for the field activities and will collect, compile and analyze USI & QCL reports. Ensure that:
 - DFPs in their zone are visiting all SPUs and are regularly collecting samples for QCL.
 - QCL in their zones are working up to set standards and results are communicated to all concerned for action.
- ✚ Spend at least one day per week to ensure that Lab Technician/Assistant are performing titration as per prescribed procedure and salt samples are analyzed at earliest
- ✚ A percentage of samples analyzed at district QCL are forwarded to Reference Lab for cross checking of results
- ✚ Salt Processors are trained on methods of salt iodization and internal quality control
- ✚ Visit and update list of salt processors in their areas. Provide logistic support to allocated districts. Regular supply of potassium iodate at districts levels. They will collect data on production and iodization of salt during their visits to the salt processors and compare it with potassium iodate consumption & results of QCL.
- ✚ Responsible to conduct market & household surveys for iodized salt availability and utilization.
- ✚ Provide regular feedback to concerned District Health Offices on IDD/USI activities. Monthly report will be submitted to provincial program managers MI and National program manager-USI on prescribed format in time

The USI program is being implemented in Pakistan in close coordination with the National Fortification Alliance and other key stakeholders with the help of a team comprising of National Program Manager, Program Coordinator, 4 Provincial Managers, and 25 Field Officers. National Manager and Program Coordinator are based in MI Country Office, Islamabad for liaison with the Government, WFP, UNICEF, GAIN etc; Reporting to MI Headquarter; Monitoring and Evaluation of the program etc. Whereas provincial Managers are based in provinces for liaison with the provincial governments to implement and monitor the program in an effective manner. Field Officers are based at district level and working closely with the district government particularly EDOs/DHOs and District Focal Persons (DFPs) for USI program

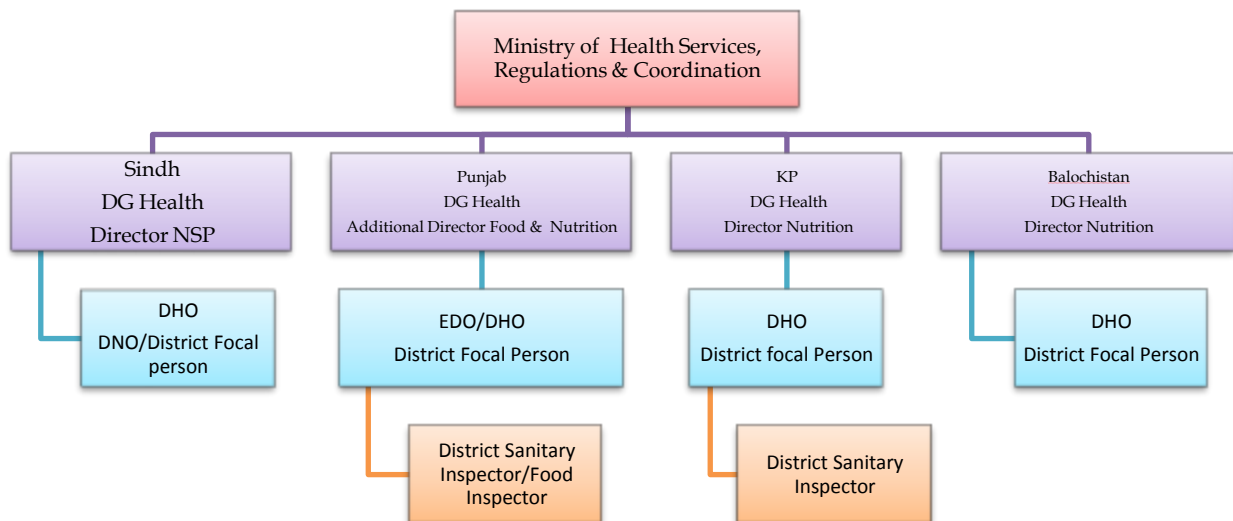
implementation Following is the team management structure who is responsible for the implementation of the USI program in Pakistan.

MI Team Structure for USI Program Implementation



Public Sector Structure for USI Program Implementation

Following public sector structure supports USI activities conducted by MI currently



Monitoring & Implementation plans/Tools

The following monitoring formats were developed and put in practice (annexed)

- a. Monthly reports at district, provincial and national level on
 - Total salt production
 - Edible salt production
 - Potassium iodate utilization
 - Iodine levels in salt (ppm)
 - Total salt produced which is adequately iodized
- b. Market and household survey reports.
- c. Quarterly program progress reviews with all Provincial Health Departments and Government of Pakistan (GoP).
- d. Mid-year and annual reports

Based on the aforementioned tools following indicators are captured which are recommended to be the part of DHIS:

Targets

- 100% of edible salt produced as iodized salt
- 90% adequately iodized salt (more than or equal to 30 ppm) produced at production level
- 100% HHs using iodized salt (more than or equal to 15 ppm)

Output level indicators

- # of monitoring visits conducted by the Government official at district level
- # of salt processors visited at district level
- # of salt samples collected
- # of samples tested at district level
- % of salt samples collected from Salt Processors, having more than or equal to 30 ppm iodine contents
- % of household (HHs) having iodized salt more than or equal to 15 ppm iodine contents

Potassium Iodate Supply Chain Mechanism

KIO₃ supply chain management includes mechanism, timely procurement and commodity/stock flow process which are as follows:

Processes for the Issuance of KIO3:

Salt processors deposit money in the HBL account of Genera. They submit the bank slips to DFPs for issuance of KIO3. DFPs maintain KIO3 registers in their offices. When stock comes to an end, DFPs inform MI's Field Officers to issue a stock. MI's Field Officers generate a request to their Provincial Manager who manages KIO3 requests receives from the entire province on weekly basis and submit it to MI's country office to issue the required quantity of KIO3, drip feeds, drips sets, buckets, RTKs. On MI's request Genera Pharmaceutical issues KIO3 and other items as per request to the DFP of the concerned district. Genera Pharmaceutical reconciles the data on monthly basis and in case of any discrepancy, request to the concerned MI's Field Officer for the bank deposit slip.

DFPs are responsible for the issuance of KIO3 to salt processors. They have to make sure that adequate supplies are available and identify gaps, if any exist. The KIO3 is available with the DFP and its issuance to salt processors is maintained by him/her.

Timely Procurement of KIO3 to the Salt Processors

According to policy, salt processors should have 15 days stock with them. If stock out occurs and supply is in transit process which usually takes 10 -15 days, the shortage is created during this time period.

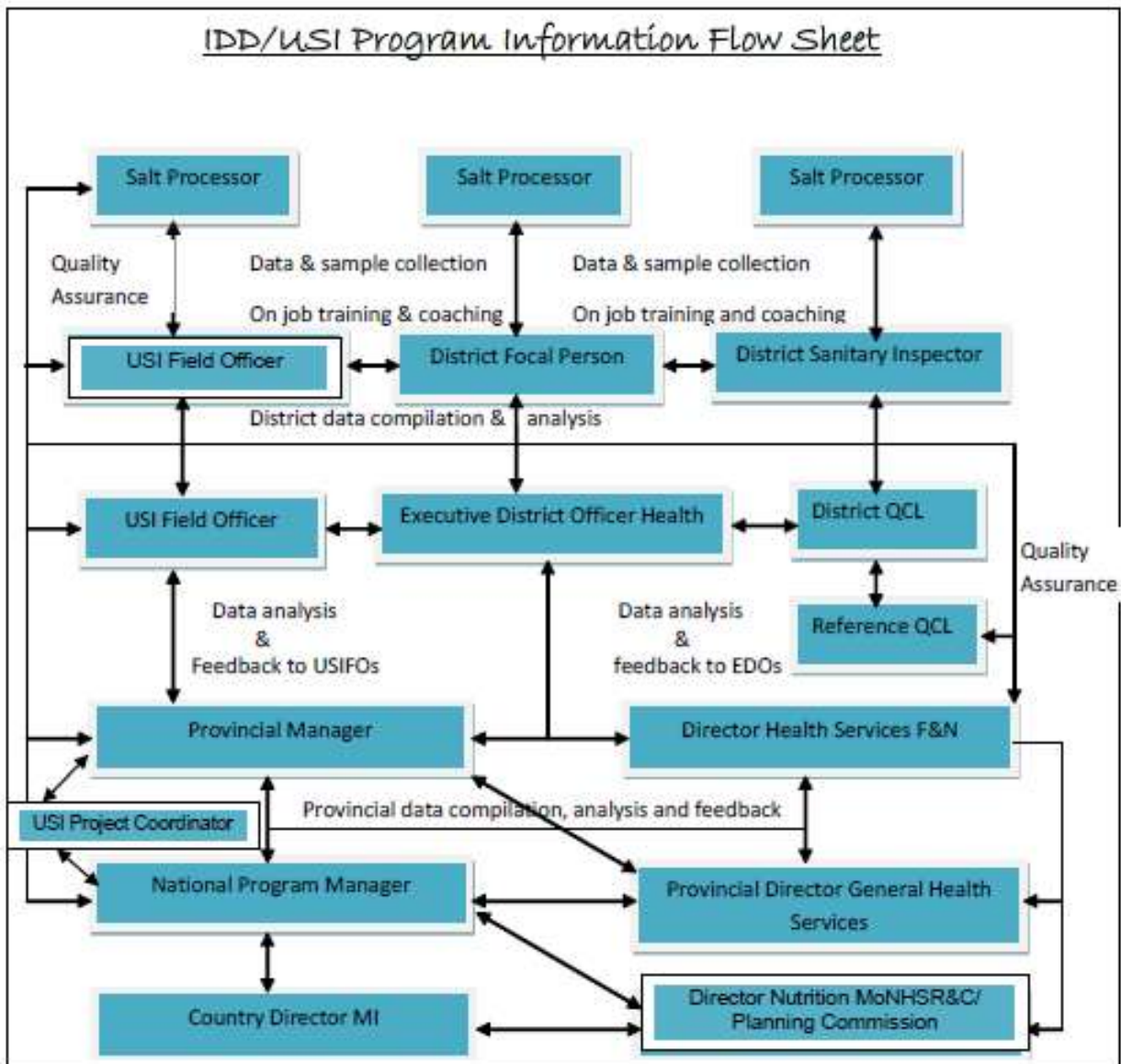
KIO3 stock approximately 10,000 kg is imported from international vendor every year. The procurement of any shipment takes around 3 to 4 month therefore the next order for the new shipment is placed in consultation with the NFA during the mid of the year. This ensures availability of KIO3 on time to the salt processors across Pakistan

Commodity/Stock Component:

KIO3 is repacked in small packing within 30 days and delivered subsequently. MI representatives visit and check the process of re-packaging by Genera. Genera dispatches KIO3 to the DFPs. Genera is responsible for warehouse, logistics, and packaging etc.

KIO3 is issued to districts when the previous stock is finished and the report is sent to the MI for onward transmission to Genera.

Universal salt Iodization Program Information Flow



Current Status

In all four provinces of Punjab, KP, Sindh and Balochistan the nutrition programs under Departments of Health are being implemented through projects.

The projects in three provinces of KP, Sindh and Balochistan have end date of December 2016 however Punjab has December 2018. The only regular position of Additional Director Food & Nutrition in Punjab was currently vacant. Currently MI managed USI program supports monitoring activities of six (6) provincial offices from provincial health departments (Punjab-2, Sindh-2, KP-1 and Balochistan-1).

The district focal persons vary in all provinces and are working on current charge basis as an additional responsibility current MI managed USI program supports costs for monitoring activities of ninety (90) district level offices from provincial health departments (Punjab-37, Sindh-20, KP-24, AJK/FATA-8 and Balochistan-1).

There are 25 USI field Officers hired and managed by MI (Punjab-15, Sindh-5, KP-5 and Balochistan-1).

There are eighty (80) quality control laboratories established under management control of district health departments (Punjab-41, Sindh-19, KP-17, AJK-2 and Balochistan-1). In addition to these quality control laboratories, there are twenty (20) reference laboratories (Punjab-9, Sindh-6, KP-5). All these laboratories have makeshift human resource from health departments trained through MI-USI project. Equipment and consumables are supplied through current MI-USI project.

There is a positive cooperation and partnership between MI and provincial health departments in execution of USI program.

There is a huge gap in legislation available at provincial as well as national level. Only Sindh has a law which also requires being implemented though development of rules of procedure.

Recommendations - USI Program Implementation Mechanism by Public Sector

Building on positive partnership between MI and provincial health departments partners start looking at the establishment of Regular directorates of nutrition at all DG Health Offices to ensure program level implementation, monitoring and support to district health offices, UN partners, bilateral donors, NGOs/CBOs and communities.

Provincial as well as national level legislation with clear standard operating procedures including roles and responsibilities of all departments and levels of implementation, monitoring and enforcement. Stringent regulatory and enforcement mechanism is in place to check the sale and use of non-iodized salt.

Regular positions at all districts with clear roles and responsibilities to manage the USI activities including technical support to SPs, regular monitoring, reporting and initiating corrective measures. Coordinating with line departments and partners at district level including SPs.

Incorporate indicators of salt producers, monitoring and laboratory findings in provincial dashboard and planning for inclusion in District Health Information Systems (DHIS)

Targets

- 100% of edible salt produced as iodized salt
- 90% adequately iodized salt (more than or equal to 30 ppm) produced at production level
- 100% HHs using iodized salt (more than or equal to 15 ppm)

Output level indicators

- # of monitoring visits conducted by the Government official at district level
- # of salt processors visited at district level
- # of salt samples collected
- # of samples tested at district level
- % of salt samples collected from Salt Processors, having more than or equal to 30 ppm iodine contents
- % of HHs having iodized salt more than or equal to 15 ppm iodine contents

Coordination mechanisms at health departments to bring on board the cottage industry, Provincial Bureau of Statistics, PQSCA, District managements for enforcement of mandatory salt iodization and follow ups.

Creating awareness among the population on benefits of using adequately iodized salt through community based extension workers including LHWs, CMWs etc to create and sustain demand of the iodized salt at household and community level.

Operational guidelines for each component of the USI program

Following activities initiated by *MI-WFP initiative for implementation of Universal Salt Iodization program* in the target districts of the country are to be carried out by public sector in future and to get equipped at this juncture provinces and regions are required to work with MoNHSR&C to prepare themselves for the sustainability of the miles achieved.

Following are USI program components to be planned and sustained:

A. Technical and operational support to salt processors

- Technical support to salt processors including modification/ addition of equipment for large and medium scale salt processors for uniform mixing of potassium iodate and quality assurance
- Training and capacity building of salt processors on adequate iodization and internal quality control.
- Technical assistance through provincial as well as district level field staff including project staff through their planned regular visits for supportive supervision and monitoring of the iodization process.

B. Monitoring and quality control

- District and provincial health departments to develop monitoring plan for enforcement and regulatory control of salt iodization in line with existing provincial laws.
- Training and capacity building of staff from provincial and district Departments of Health
- Sustaining the available strength of the QCL at district and sub-district levels and reference laboratories at the zonal level.
- Regular monitoring of laboratories through provincial Food Testing Laboratory managers for laboratory quality assurance. Liaison with District focal person Nutrition to ensure management and supervision.
- Program review and planning meetings at district and provincial level.
- Training sessions for field monitoring staff (like Sanitary Inspectors in some provinces) to support the quality control component.

C. Advocacy, legislation and regulatory mechanism

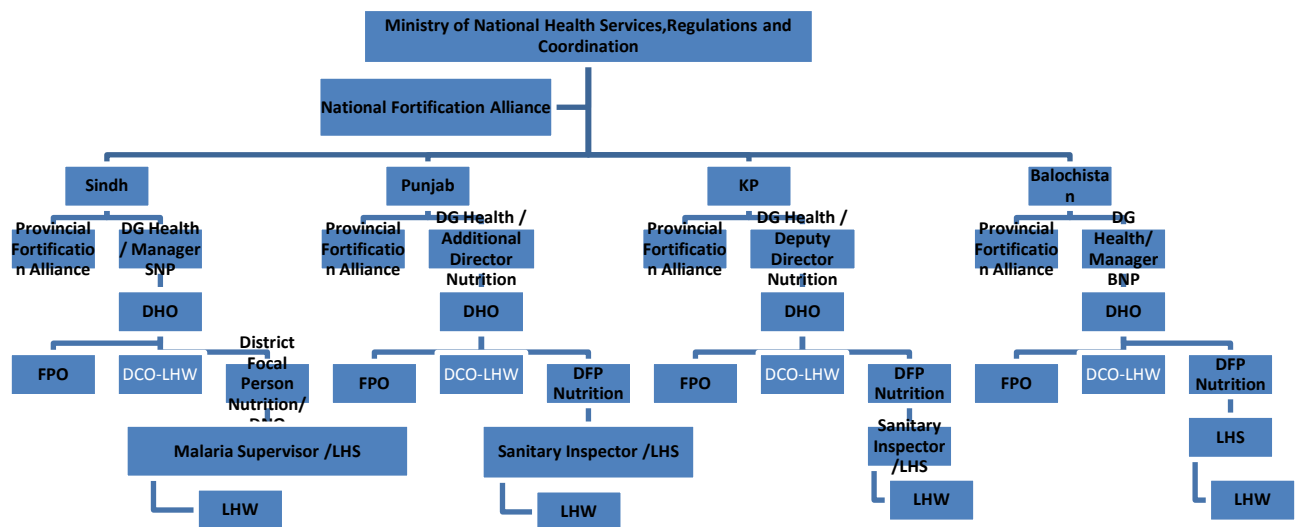
- Provincial government to put USI on agenda while formulating provincial nutrition programs.

- Advocacy meetings with government departments and stakeholders for promulgation of provincial legislation on mandatory edible salt iodization.
- Formulation and development of regulatory framework and enforcement mechanisms.
- Quarterly Provincial IDD Control Committee Meetings for advocacy as part of management structures.

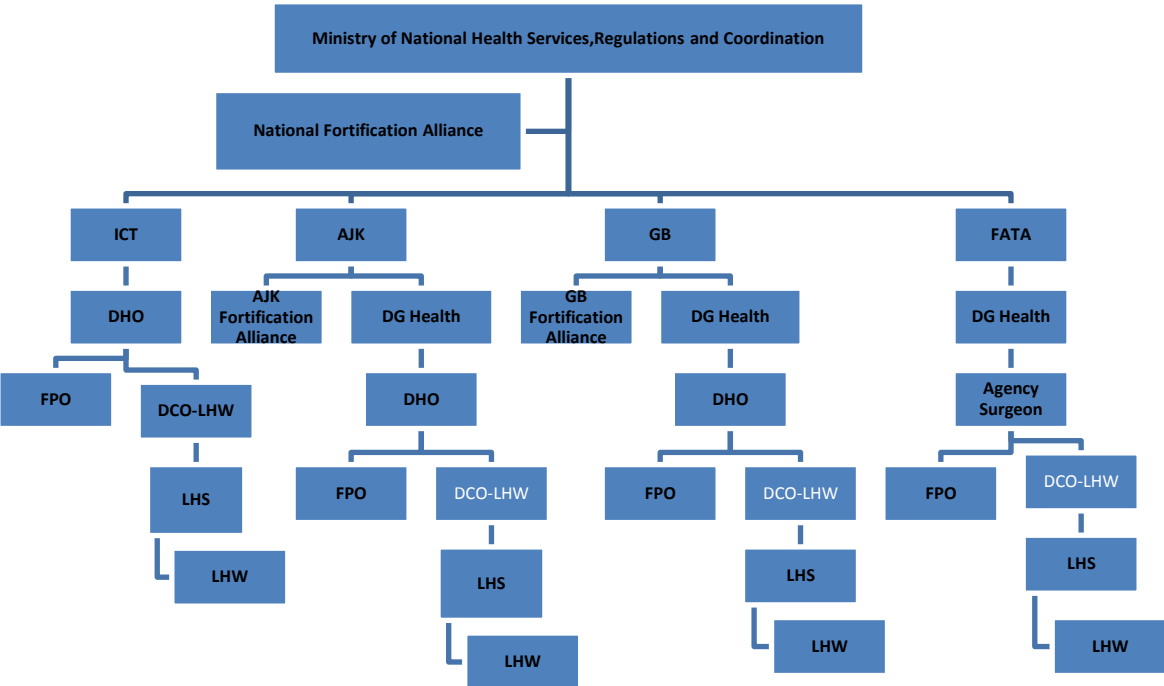
D. Uninterrupted supply of fortificant and Iodization equipment

- Supporting NFA managed revolving fund for supply of potassium iodate and Iodization equipments (drip feeds & drip sets) to salt processors on cost to cost basis, ensuring un-interrupted supply.
- Formation of oversight committee under NFA to manage Revolving fund, mechanism for supply chain to overcome stock out situation.

Proposed USI structure for Provinces



Proposed USI structure for Federally administered territories



Proposed Roles and Responsibilities of Stakeholders

Stakeholder	Responsibilities
MoHSR&C, GoP	<ul style="list-style-type: none"> ▪ Policy guidance, support in programming and funding ▪ Coordination between provinces and different departments ▪ Manage revolving fund with participation from provincial health Departments. ▪ Active liaison with other stakeholders including Government health authorities at different levels, salt processors and partners like WFP, GAIN, WHO and UNICEF.
Provincial Departments of Health	<ul style="list-style-type: none"> ▪ Coordination with MoHSR&C at federal level and Districts. ▪ Policy formulation and overall supervision & monitoring. ▪ Ensuring un-interrupted supply of KIO₃ through revolving fund mechanisms. ▪ Field Monitoring, supervision, quality control and enforcement in collaboration with partners at district level. ▪ Awareness through field workforce and community based health workers programs. ▪ Collecting, analyzing and reporting of the USI data. ▪ Use of information at provincial level for decision making ▪ Active liaison with other stakeholders including Government health authorities at different levels, salt processors and partners like WFP, GAIN,MI, WHO and UNICEF.
District Health Departments	<ul style="list-style-type: none"> ▪ Implementation of the Provincial USI policies, programs and interventions. ▪ Provision of technical and operational support and demand based maintenance of Salt Producing units and overall monitoring and supportive supervision ▪ Field Monitoring, supervision, quality control and enforcement in collaboration with partners at district level. ▪ Awareness through field workforce and community based health workers. ▪ Collecting, analyzing and reporting of the USI data. ▪ Use of information at district level ▪ Active liaison with other stakeholders including Government health authorities at different levels, salt processors and partners like WFP, GAIN, MI,WHO and UNICEF.

Stakeholder	Responsibilities
World Food Program (WFP)	<ul style="list-style-type: none"> ▪ Support for program implementation through Annual Work plans with focus on communication and social mobilization activities ▪ Support in monitoring
UNICEF	<ul style="list-style-type: none"> ▪ Support for program implementation through Annual Work plans with focus on advocacy and demand creation of iodized salt
GAIN	<ul style="list-style-type: none"> ▪ Support large and medium salt processors for internal quality control
MI	<ul style="list-style-type: none"> ▪ Support for program implementation through Annual Work plans with focus on communication and social mobilization activities ▪ Support in monitoring
Salt Processors	<ul style="list-style-type: none"> ▪ Responsible for program implementation with district as well as provincial health departments. ▪ Ensure adequate iodization of all edible salt processed at their units. ▪ Quality assurance as per national guidelines.
<ul style="list-style-type: none"> ▪ Food Authority 	<ul style="list-style-type: none"> ▪ Formulation of Laws for mandatory edible salt iodization/ pure food rules ▪ Enforcement of the laws in their area of jurisdiction
<ul style="list-style-type: none"> ▪ Food Authority ▪ PSQCA 	<ul style="list-style-type: none"> ▪ Standardizing the iodization level in edible salt at production and household level ▪ Formulation of Laws for mandatory edible salt iodization/ pure food rules ▪ Enforcement of the laws in their area of jurisdiction

List of Proposed Indicator

Indicator	Frequency	Level
Number of field staff participating in regular monitoring and supervision from provincial level	Monthly	District
Number of field staff participating in regular monitoring and supervision at district level	Monthly	District
Number of salt producers by type in district	Monthly	District
Number of field visits conducted Cadre wise	Monthly	District
Number of salt samples collected from SPs	Monthly	District
Number of salt samples tested at QCL (name)	Monthly	District
Number of salt samples tested at Reference Lab (name).	Monthly	District
Number of salt samples with adequate iodine level /QCL	Monthly	District
Number of salt samples with adequate iodine level /Reference lab,	Monthly	District
Number of salt samples with adequate iodine level /district	Monthly	District
Number of salt samples with adequate iodine level /province	Monthly	Provincial
Number of salt samples collected from market	Monthly	District
Number of salt samples collected from Household	Monthly	District
Number of salt samples collected form market with adequate iodine level /district	Monthly	District
Number of salt samples collected form household with adequate iodine level /district	Monthly	District
Number of training sessions of salt processors on adequate iodization	Quarterly	District

Indicator	Frequency	Level
Number of monitoring checklists adapted for provincial level		Provincial
Provincial plan with Method, frequency and tools of data collection in USI program	Annual	Provincial
District plan with Method, frequency and tools of data collection in USI program	Annual	District
Number of staff received training in monitoring and supervision of USI program at field level	Annual	Provincial
Quality Control Laboratories (QCL) established at district level/province	Annual	Provincial
Adapting a relationship of USI- QCLs with Provincial Food Testing Laboratory		Provincial
Notification-Responsibility of monitoring and quality assurance of QCLs		Provincial
Number of USI program review meetings conducted at district level.	Monthly	District/ Province/ National
Number of USI program review meetings conducted at provincial level.	Quarterly	District/ Province/ National
Number of USI program review meetings conducted at national level.	Annual	District/ Province/ National
Notifying cadres form regular health department employees with responsibility for field monitoring at provincial and district level		Province
Is there any Provincial legislation on mandatory edible salt iodization?		Province
What are regulatory framework and enforcement mechanisms to ensure USI		Province

Indicator	Frequency	Level
Report on assistance from different partners to develop of regulatory framework and enforcement mechanism		Province/ National
Notification- Role and legal status of Provincial IDD Control Committee		Province
Notification-Role and legal status of District IDD Control Committee		Province
Notification--Role of a revolving fund established for supply of potassium iodate to salt processors on cost to cost basis, ensuring un-interrupted supply		National
Notification-SoPs and management of revolving fund		National

Annex-A - List of Stakeholders Interviewed

- The National Program Manager/Director Nutrition, MoHSR&C, Government of Pakistan, Islamabad
- The Director General Health Services Khaiber Pukhtunkhwa
- The Additional DG Health Planning and Development, Government of Punjab.
- The Additional Director Public Health, Directorate General Health Services Sindh
- The Project Director Sindh Nutrition Program
- The Deputy Director Nutrition, Integrated Health Project, Khaiber Pukhtunkhwa
- The Coordinator National Fortification Alliance (NFA), MoHS&R, Government of Pakistan, Islamabad
- The Micronutrient Initiative, Islamabad, Punjab, Khaiber Pukhtunkhwa and Sindh.
- The UN-World Food Program, Islamabad, Punjab, Khaiber Pukhtunkhwa, Sindh
- UNICEF Islamabad, Sindh and Khaiber Pukhtunkhwa

Annex B: List of Participants at National Consultation - December 16, 2016

1. Dr. Baseer Khan Achakzai Director Nutrition MoNHSR&C
2. Mr. Aslam Shaheen Chief Nutrition Planning Commission, GoP
3. Dr. Said Ali Khan DG Health KP
4. Dr. Haroon Khan Deputy Director KP
5. Dr. Nusrat Jabeen Additional Director Food & Nutrition Punjab.
6. Mr. Nazir Hussain Director QCC PSQCA
7. Dr. Muhammad Saleem Memon Additional Director PH Sindh
8. Dr. Fahim Khan Director Nutrition Balochistan
9. Mr. Ehsan Ali Deputy Secretary Health GB
10. Dr. Ghulam Abbass Health & Nutrition Officer GB
11. Dr. Alamgir Khan Focal Person Nutrition FATA
12. Dr. Taj Wali Khan Deputy Director MoNHSR&C
13. Dr. Muhammad Yasin KP
14. Dr. Khawaja Masood Ahmed National Coordinator NFA
15. Dr. Masood Abbassi Nutrition officer WFP
16. Dr. Masood Bukhari Additional DHS AJ&K
17. Dr. Naureen Arshad UNICEF
18. Dr. Muhammad Hayat Director Public health Balochistan
19. Dr. Naveed Bhutto Program Policy officer NSP Sindh
20. Ms Nusrat Shaheen Program Officer MoNHSR&C
21. Dr. Ahsanullah Khan NPM MI
22. Dr. Tariq Mehmood PM Punjab MI
23. Dr. Fatima Saad PM Sindh MI
24. Mr. Imtiaz Ali Shah PM KP MI
25. Dr. Abdul Rehman Pirzado Consultant

Annex-C: Questionnaire for partners

Questionnaire to get an opinion of key Stakeholders to Develop a Sustainability Framework of Universal Salt Iodization (USI) Program in Pakistan

Name of Respondent: _____

Title of Respondent: _____

Department: _____

Province: _____

Role in USI Program: _____

Date: _____

*(This is an exercise to look into the areas of current program being implemented with assistance from Micronutrient International with financial support UN-World Food Program implementation to **formulate Sustainable Universal Salt Iodization (USI) framework**) – And thank you for taking out time from your busy schedule to fill-in the form. Please rest assured all the information will be kept confidential and used only for developing a comprehensive sustainability framework of the USI program.*

<p align="center">Planned <i>USI Program 2014-17</i></p>	<p align="center">Current status <i>Please mention role of your organization/ department to achieve planned activity</i></p>	<p align="center">Future Plans <i>Please mention what will be role of your organization to sustain the activity after MI-UNWFP funding ends in March 2017</i></p>
<p>How many salt processors in your province/ district were equipped with salt iodization equipments (buckets, drip feeds and drip sets)</p>	Large Scale:	Large Scale:
	Medium Scale:	Medium Scale:
	Small Scale:	Small Scale:
<p>How many salt processors in your province/ District were provided additional equipment for quality assurance</p>	Large Scale:	Large Scale:
	Medium Scale:	Medium Scale:
	Small Scale:	Small Scale:
<p>Number of training sessions of salt processors on adequate iodization conducted by MI every year/ last 3 years</p>		
<p>Number of MI field staff participating in regular monitoring and supervision at district and provincial level</p>		
<p>In your opinion who sets the standards for Iodization</p>		
<p>What are monitoring methods in practice for monitoring USI program</p>		
<p>What are the Method, frequency and tools of data collection in USI program</p>		
<p>What Support is provided in monitoring and supervision by MI</p>		
<p>Do you or your staff member prepare Monitoring reports</p>		

<p align="center">Planned <i>USI Program 2014-17</i></p>	<p align="center">Current status <i>Please mention role of your organization/ department to achieve planned activity</i></p>	<p align="center">Future Plans <i>Please mention what will be role of your organization to sustain the activity after MI-UNWFP funding ends in March 2017</i></p>
<p>which covers edible salt production, iodized salt production, KIO₃ utilisation etc</p>		
<p>What is the mechanism of reviewing those reports at district and provincial levels? Who takes actions based on these report?</p>		
<p>Number of staff from your organization/ department received training in monitoring and supervision of USI program at field level</p>	<p>Provincial:</p>	<p>Provincial:</p>
	<p>Divisional:</p>	<p>Divisional:</p>
	<p>District:</p>	<p>District:</p>
<p>How many Quality Control Laboratories (QCL) are established in your province</p>	<p>Provincial:</p>	<p>Provincial:</p>
	<p>Divisional:</p>	<p>Divisional:</p>
	<p>District:</p>	<p>District:</p>
<p>Who manages QCL, who conducts the tests</p>		
<p>Who takes action against SPs, producing zero ppm or low ppm iodized salt</p>		
<p>Who is responsible for supplies of equipment/ reagents for QCLs</p>		
<p>what are financial implications of QCLs</p>		
<p>How many Reference Quality Laboratories (RQCL) have</p>		

<p align="center">Planned <i>USI Program 2014-17</i></p>	<p align="center">Current status <i>Please mention role of your organization/ department to achieve planned activity</i></p>	<p align="center">Future Plans <i>Please mention what will be role of your organization to sustain the activity after MI-UNWFP funding ends in March 2017</i></p>
<p>been established in your province/ District</p>		
<p>Who manages RQCL, who conducts tests Who is responsible for supplies of equipment/reagents for RQCL</p>		
<p>What are financial implications of RQCLs</p>		
<p>What is relationship of these QCLs with Provincial Food Testing Laboratory</p>		
<p>Responsibility of monitoring and quality assurance of QCLs</p>		
<p>What is frequency of the program review meetings and who chairs these reviews (please specify role of District IDDC Committees)</p>		
<p>Which cadres from regular health department employees are responsible for field monitoring at provincial and district level</p>		
<p>what are mechanisms of their capacity building for field monitoring cadres</p>		
<p>Is there any Provincial legislation on mandatory edible salt iodization?</p>		
<p>What are regulatory</p>		

<p align="center">Planned <i>USI Program 2014-17</i></p>	<p align="center">Current status <i>Please mention role of your organization/ department to achieve planned activity</i></p>	<p align="center">Future Plans <i>Please mention what will be role of your organization to sustain the activity after MI-UNWFP funding ends in March 2017</i></p>
framework and enforcement mechanisms to ensure USI		
What assistance did you get from different partners to develop of regulatory framework and enforcement mechanism		
Role and legal status of Provincial IDD Control Committee		
Role and legal status of District IDD Control Committee		
Role of a revolving fund established for supply of potassium iodate to salt processors on cost to cost basis, ensuring un-interrupted supply		
Who is managing revolving fund?		
What is Potassium Iodate (KIO ₃) supply chain mechanism		
Are you satisfied with current KIO ₃ supply mechanism, its accuracy, timeliness, management		
Do you know about SoPs and management of revolving fund		
How do you plan to manage the revolving fund		
What different departments		

Planned <i>USI Program 2014-17</i>	Current status <i>Please mention role of your organization/ department to achieve planned activity</i>	Future Plans <i>Please mention what will be role of your organization to sustain the activity after MI-UNWFP funding ends in March 2017</i>
are participating in achieving USI at what levels and brief about their role		

How do you define sustainability in terms of USI program?

Any challenge do you foresee for the implementation of the USI program by the Government. If yes please explain in detail?

Organization Name Please mention name of organization/ Department	Type Govt/ UN/ NGO	Title of the Coordinating Person	Level District/Province/National

Your valuable experiences, comments and suggestion for sustainability of the USI targets achieved so far:

Annex-D: Monthly Salt Processors datasheet

Form-A

Date _____

Monitoring of Salt Processors for USI Activities

For the Month of _____ 200__, District _____

S.No	Name of Salt Processor with complete address and contact No.	Total Prod. in tons/month	Edible Salt Prod. In tons/month	Iodized Salt Prod. In tons/ month	% of salt iodised	DF installed (Y/N)	Condition of DF working/ out of order		KIO3 Brought Forward from previous month in kg	KIO3 Received last month in kg	KIO3 Used during Month (Kg)	KIO3 in stock/ balance in kg	KIO3 Required for next month (Kg)	Production in tons V/S KIO3 Utilized	Test Kit available		Test kits needed (Y/N)	Packaging		BY DFP, USI Ext. EDO. PC MI	Test Result of iodized salt (Avge ppm***)	Remarks & other information (add)	
							Bucket part	Drip-set							# Of RTKs	Personal		General					
1.																							
2.																							
3.																							
4.																							
5.																							
6.																							
7.																							
8.																							

Monitor's Name: _____

Designation: _____

Annex-E: Market Monitoring datasheet

Form-B

Date: _____									
<u>Monitoring at Market Level</u>									
For the Month of _____ 200__, District: _____									
S. No	Name/Owner of Shop and Address	Date of visit	Brand Names of salt sold	Supplier	Quantity sold per month	Iodization Logo1 (Y/N)	PPM ² (check)	Date of expiry	Retail Price
1									
2									
3									
4									
5									
6									
7									
11									

Monitor's Name: _____

Designation: _____

¹ State whether logo of iodized salt (Hath aur Handi) is present on the pack (Yes/No)

² Match with the nearest ppm with the help of Rapid Test Kit

Annex-F: Household Monitoring datasheet

Form-C

Date: _____							
<u>Monitoring at Household Level</u>							
For the Month of _____ 200__, District: _____							
S. No.	Name & Address of Household	Date of visit	Do you know about the sign of Hand and "Handi" (Y/N)	Do you use iodized Salt (Y/N)	If not why (write reasons)	Iodization Test ³ (PPM ⁴)	Remarks
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Monitor's Name: _____

Designation: _____

³ State whether or not iodine is present in the salt using Rapid Test Kit

⁴ Match with the help of Rapid Test Kit for the nearest ppm of iodine in salt

Annex G: MI Walk out Strategy (phase wise)

“Walk out/Exit” refers to the withdrawal of all externally provided program resources by the MI from the entire program area. In MI perspective, a walk out strategy is a plan describing how the program intends to withdraw its human and financial resources while assuring that the achievement of the program goals is not jeopardized and that progress towards these goals continues. In USI case, government is well-positioned and willing to take over activities aimed at achieving program goals.

The USI program will be handed over to the national and provincial governments by the MI.

From April 2017 onwards, all the monitoring incentives will be withdrawn from district levels, however, MI will continue support to the government in implementation and monitoring of the USI Program as mentioned in the aforementioned section.

From April 2018 a periodic assessment of the program progress toward exit will be carried out by the Provincial Managers/Field Officer of MI and a modification of the exit plan may require.

Monitoring support will continue till the end of March 2018. MI’s Field Officers will be there to identify gaps and issues regarding field activities which will be performed by the government officials. These gaps and issues will be shared with Provincial and National Government Officials to address them.

Sustainability framework will be disseminated at district level by MI’s Field Officer from April 2018.

USI data formats, data, and database will be handed over to the provincial concerned officials in a meeting at province level. This activity will be executed by National Program Manager MI/Provincial Managers.

Finally, after handing over the program to the Government of Pakistan, a national event will be organized in Islamabad to acknowledge the efforts of different key stakeholders and USI team in making USI program successful.

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