

Eritrea Trip Report

October 24 - November 5, 1997

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OMNI Nutrition Program Advisor

Opportunities for Micronutrient Interventions (OMNI)
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I. EXECUTIVE SUMMARY

Eritrea is making quick progress towards achieving the goal of Universal Salt Iodization. The incorporation of small-scale salt producers along the Red Sea coast around Massawa is being approached through:

- (1) procurement by UNICEF of the tools and equipment specified by Locatelli-Rossi;
- (2) a collaborative mobilization workshop planned for end November 1997, and
- (3) follow-through by early 1998 with hands-on training and implementation of modern salt production methods including the iodization technology, modeled on previous experience in Southern Red Sea Zone.

Quality assuring iodized salt production is also progressing. The Eritrean Standards Institution (ESI) has started operating from a side-facility in Assab, providing salt industries in Southern Red Sea with external inspection and enforcement of the national standards. The Ethiopian authorities have notified Eritrea that a ESI-provided certificate of adequacy will be insisted upon for salt import consignments from Eritrea. ESI is pursuing a similar set-up in Massawa to also inspect and enforce the quality of the domestic iodized salt supply.

The focus of the present trip was to work with the OMNI team in planning to put in place the USI components that quality assure the access to, availability of, and household consumption of iodized salt. The curriculum for training of health workers was finalized. A detailed outline for mobilization training of small-scale producer associations was finalized. Further details of the community monitoring-promotion system were discussed and defined. A detailed outline for a verification survey in 1998 was developed.

The key recommendation is that The DG Health Services MOH (as Chair Person) calls a meeting of the National Micronutrient Task Force to sustain the momentum generated until now by those partners who had a clear self interest in the accomplishments thusfar. To move forward in quality assurance and monitoring, particularly to obtain involvement by staff of MOE, NUEYS and University of Asmara, the activities projected for assuring iodized salt access, availability and consumption in communities will need to be positioned as a priority for joint pursuit by all partners in the national program. A high-level inter-sectoral meeting should address this and other issues, and the Task Force is the appropriate forum.

II. PURPOSE OF TRIP

Eritrea has made tangible progress with implementing USI, the choice intervention against IDD, as part of the MNM control program planned immediately after Independence. By end 1995, the Industry Department had invested US\$8.6million in rehabilitating and modernizing the public salt works on the Red Sea coast in Assab and Massawa. In addition, an unknown but significant investment has been made by private entrepreneurs in developing small- and medium-scale salt works outside Assab and Massawa. Also, by end 1996 assistance of US\$1.5million had been

provided by USAID, CIDA and Kiwanis through UNICEF for iodization technology, training, management and quality assurance in Southern Red Sea Zone and Massawa Salt Works. It is estimated that in 1996, the combined production in Assab and its surroundings was close to 265,000MT, most of which was destined for export to Ethiopia.

The domestic demand for salt in Eritrea is largely satisfied from producers along the coast of Northern Red Sea Zone. Massawa Salt Works supplied approx. 85,000MT iodized salt in 1996. Small-scale salt production associations around Massawa have recently been assessed. UNICEF has issued procurement requisitions for the recommended tools and equipment.

In mid 1996, during its first year, the Eritrean Standards Institution (ESI) instituted standards for iodized salt. ESI has now started with external sampling, laboratory testing and enforcing the national standards in salt production enterprises of the Southern Red Sea Zone, while operating from a side-facility in Assab. Ethiopia also performs simple salt tests at importation and Ethiopian Health authorities have notified the Eritrean government that the Customs will start insisting on a certificate of adequacy for each imported salt consignment. ESI is in the process of establishing a side-facility in Massawa to also provide the salt enterprises in Northern Red Sea Zone with external quality control services. A study of export potential sponsored by MOTI estimated that Eritrea could capture salt markets in Mediterranean, Middle-East, Gulf and Far-East countries to the tune of 300,000MT per annum under the most conservative scenario.

Until recently, Eritrea obtained well-coordinated assistance from UNICEF, OMNI and World Vision Eritrea (WVE) in the MNM control program. Upon decision by the Macro Policy Office, WVE has been asked to leave the country, however. Micronutrient efforts by WVE were focused on population assessments and interventions in health, agriculture and food enterprises and chiefly aimed at addressing the deficiencies of vitamin A and iron. A discussion is ongoing among MOH, USAID, OMNI and UNICEF on how to address the void created by the departure of WVE.

The present trip was undertaken to provide a further impetus to the implementation of OMNI's program. Specifically, the consultant worked with OMNI's team to (1) further develop and finalize training curriculums for health workers and salt merchants, (2) review progress on the procurement of tools and technology, and design mobilization training for the small-scale salt producer Associations around Massawa, (3) advance the plans for a monitoring system, and (4) further arrange the design and implementation plan for a verification survey planned for 1998. The Scope of Work is attached as Appendix 1.

III. TRIP FINDINGS/ACTIVITIES/ACCOMPLISHMENTS

Joint meetings with Mr. Semere G/giorgis, OMNI's Resident Advisor, were held with MOH, USAID, UNICEF, MOTI, ESI, MOE, Central Health Laboratory and Eritrean Salt Works. Also, the consultant met with departing staff of WVE, the Chairperson of NUEYS and Prof. Afiworke Asghedom of University Asmara. A telephone conversation was held with the Dutch consul. The

consultant worked closely with the OMNI team in delivery of the scope of work.

Training of health workers

For this course, collaborative preparatory work had progressed before the consultant arrived. The finalized curriculum for the training of nurses, health assistants and environmental health inspectors is given in Appendix B. The 1-week training course is planned to be delivered 3 times during November 10-14 and December 15-19, 1997 and in early January, 1998. A total of 60 participants selected by MOH will have been trained at completion. Participants are drawn from the combination of community and facility-based MOH staff. They are expected to play key roles as educators and supervisors of the health staff who will be involved in the IEC and monitoring aspects of USI, and the supplement delivery components of the MNM control program. The Course Coordinator, Mr Semere Gebregiorgis will share the finalized curriculum with all the facilitators in order to prevent overlap and redundancies in implementation.

Training of salt merchants

OMNI has collected formative research data and information as part of the work by IEC Expert Advisor Rebecca Kohler. Initial results of interviews with salt traders indicate that the salt merchandizes in Eritrea take place on basis of "demand pull." This means that at each respective level in the chain between producers and retail outlets, a given merchant will arrange for the purchase of salt from a supplier to replenish the diminished stocks: A wholesaler initiates a purchase from a producer when her/his stocks have dwindled and a retailer will purchase from the wholesaler upon diminished stocks in her/his shop or market stall. This practice implies that salt merchants are the key targets in promotional efforts for iodized salt. While the USI program proceeds towards covering the supply by all salt producers, one component of OMNI's IEC strategy will be directed at influencing traders to only purchase iodized salt, in order to achieve adequate access to iodized salt in communities.

The recently completed formative research will yield the specific behavioral information needed for influencing the practices by traders, as well as household buying behaviors. The OMNI team will proceed with using these data to develop the curriculum and agenda for a salt traders and merchants training (tentatively planned for February 1998) and the materials to be used by merchants for the promotion of iodized salt to consumers. As analysis of the formative research data is still proceeding, development of a training outline was premature. Training will be most effective after the promotional materials are ready for distribution.

Steps towards USI

Upon a review and approval of the report from Locatelli-Rossi (OMNI Eritrea trip report #xxx - Aug/Sep 1997), MOTI requested UNICEF to provide the tools and equipment for incorporating in USI of 3 small-scale iodized salt producer Associations in Hasmet, Gurgussum and Agip. On

specifications drawn up by MOTI's engineers, UNICEF proceeded with procurement requisitions for 50 saline densitometers, 147 wheel-barrows, 221 spades, 150kg iodiate, 4 generators, 4 bag stitchers, 3 pumps and 3 continuous spray mixers. These items are expected to arrive by February 1998. MOTI and UNICEF are planning to provide hands-on training and assistance with their application, based on previous experience with similar efforts in the Southern Red Sea Zone.

OMNI was approached on September 9, 1997 by representatives of a new commercial salt production development named *Alkader Salt Works* located 33km north of Massawa, close to Emberemi. Alkader ventures to produce salt by the modern 3-step method, on an area totalling 40ha and representing a theoretical capacity almost equivalent to Massawa Salt Works. The Alkader management is keen to collaborate in the national USI effort and has asked for technical assistance from the program. MOTI and UNICEF are considering an appropriate approach to assist in their venture. A first step for OMNI is to involve them in the salt producers workshop in November, 1997.

Mobilizing small salt producer Associations

Appendix B shows the proposed outline, curriculum, agenda and timeline for preparation of the workshop for small-scale salt producer Associations and representatives of the various associated organizations, planned to be held November 24-25, 1997 in Massawa Salt Works. The reason for this workshop is to provide an appropriate bridge between the previous assessment visit which defined the producer's needs, and the expected arrival and application of tools, equipment and practical training by early 1998. The outcome of the workshop is that all the parties involved will have clearer plans of how to prepare for, and proceed with introduction of modern production, iodization, appropriate packing and suitable sales practices in the small-scale salt producer Associations.

Plans for community monitoring-promotion of USI

An initial plan for monitoring of salt in households was developed as part of previous OMNI assistance, based on recommendations of the MN Task Force. Further discussions in MOH, MOE and NUEYS has resulted in a proposed monitoring-promotion effort as outlined in Appendix D. The proposed monitoring-promotion system has been made part of the OMNI sponsored teaching of health workers during November - January. In meetings with the consultant, the Chairman of NUEYS and the Director Curriculum Development of MOE have expressed their interest in implementing the system through their respective organizations.

In short, it is envisaged that first-line workers of MOH, MOE and NUEYS participate as a team in the promotion and monitoring of iodized salt in households and communities. The underlying aim of the USI effort in Eritrea is to provide regular access to quality iodized salt in all retail outlets serving customers in Eritrea. Community health workers, primary school teachers and Youth Association staff are uniquely positioned to promote and monitor iodized salt in

communities. *Retail access* is to be regularly assessed by youth staff of NUEYS using the spot test kits. *Household availability* is to be periodically assessed from school-based class exercises, organized by teachers and based on LQAS using spot test kits. Each of these assessments will generate information immediately useful for follow up by promotional efforts directed to retailers and students/households. The youth staff and teachers of a given community coordinate their efforts with the community health worker, who has the role of providing preventive education to promote the *use of iodized salt* (Ref: Community Health Services, Draft Policies and Guidelines. BASICS, Eritrea, September 1997). The results of monitoring and follow-up should be made a regular (*e.g.*, 3-monthly) agenda item for the village government (Assembly) to ensure supervision and progress towards universal iodized salt consumption in the community.

USI verification survey

The draft outline for this survey is given in Appendix E. Discussions were held with MOH on an appropriate procedure for progressing with its further planning and implementation. OMNI should develop a detailed survey budget and submit it with a proposed outline for implementation to MOH. It was again attempted to contact the College of Health Sciences at Asmara University (Director: Professor Assefaw) to discuss involvement of Faculty in the survey and the selection of a Principal Investigator. Despite an approach and repeated attempts through MOH, again contact could not be made.

Appendix E suggests a well-qualified University Faculty who is available to be contracted part-time as P.I. Efficient implementation of the survey would require also the effort of an experienced field organizer and data analyst who could be contracted by the OMNI office in a similar fashion as the P.I.

IV. CONCLUSIONS/RECOMMENDATIONS

The national USI program (Ministry of Health)

- ◆ Due to turn-over of key personnel, the National Micronutrient Task Force has not been meeting for quite some time. The main reason that the USI program has nevertheless kept its momentum is that MOTI and ESI had clear interests in accomplishing the USI building components. This is less clear, however, for MOE, NUEYS and the University of Asmara personnel in the monitoring and quality assurance component. Approaches by OMNI for involvement of this personnel may have been perceived as a project interest, rather than a national one. It is recommended that the DG Health calls a meeting of the Task Force to address the set-up and implementation of a USI monitoring system, as described in APPENDIX D. At the same meeting, other issues can be brought up, such as
 - 1) policy issues related to the departure by WVE, including the need for a national baseline on IDA;
 - 2) progress with addressing the needs of small-scale producers in Northern Red Sea

- Zone;
- 3) identification of a P.I. for the USI Verification Survey.
- ◆ It is recommended that mothers within 8 weeks after delivery of their last born infant be given a vitamin A capsule during the 1997 second round of NIDs, and not only the infants and children between 6 months and 5 years of age.
 - ◆ Capacity needs to be built in country for laboratory assessments of micronutrient status. It is recommended that, as start, Central Health Laboratory be equipped with capacity to perform quality assured urine iodine assays in support of the USI Verification Survey. Following a policy decision on how to fill the void created by WVE's departure, capacity to also assess vitamin A and iron status may then follow, taking advantage of experience gained with the single micronutrient capacity.

OMNI

- ◆ The proclamation of the Presidential Decree on Salt Iodization has been scheduled for December 1997, and will be accompanied by MOH releasing a number of more specific regulations. OMNI should work with MOH to make this a "national event" with major media invited and including publicity (press release) and MOH sharing the recognition for USI accomplishments with its partners in the program.
- ◆ After completion of the 3 health worker' training courses in January 1998, approximately 60 participants from health services will have been trained. A clear strategy should be obtained from MOH on how these personnel will be expected to share their skills with colleagues in order to assure better micronutrient services in the health system in Eritrea.
- ◆ OMNI's work plan for QA/Training in Eritrea is ambitious and its implementation will require closer collaboration of the Resident Advisor with the senior decision-makers in Government, UNICEF, and private organizations (Salt industry, University, etc). In order to accomplish the work program at the same time additional personnel can be contracted to work on specific assignments (development of training courses, organization, logistics, field work for the verification survey, etc).

V. LIST OF CONTACTS

Ministry of Health

Dr. Mismay Gebrehiwet, Director PHC
tel 117 303

Ms Salma M. Abubeker, Head Nutrition

Mr Dawit Sium, Head IEC

Dr. Bisrat Hagus, Director Research and Human Resource Development

Ministry of Trade and Industry

Mr Sengal Woldetensae, Director Industrial Development & Promotion

tel 120 034

Mr Negassi Goitom, General Manager Massawa Salt Works

tel 552 096

Ministry of Education

Mr Tesfamichael Gebrahtu, Director Pedagogy & Curriculum Development

tel 114 242

Eritrean Standards Institution

Mr Akberom Tedla, General Manager

tel 115 624, 120 245

Central Health Laboratory

Dr. Melles Seyoum, Director

tel 114 354

Mr Fitsum Berhane, Head Food and Beverage Analysis

Ms Gidey Francesco, Laboratory Analyst

tel 115 653

University of Asmara

Professor Afiworki Measho, PhD

tel 161 926 ext 286, fax 162 236

National Union of Eritrean Youth and Students (NUEYS)

Mr Muhiadin Shangel, Chair Person

tel 114 202, fax 125 981

USAID Eritrea

tel 126 546/8, fax 123 093

Mr Glen Anders, Representative

Ms Judith Robb-McCord, Health and Child Survival Advisor

Mr Yohannes Ghebrat, Health Programs Manager

Mr Rolf Anderson, Enterprise Development Advisor

UNICEF Asmara

tel 182 166, fax 181 439

Prof. Kupano Mukelabai, Representative

Mr Yemane Kidane, PO Nutrition

World Vision Eritrea (discontinued)

Mr Joe Siegle, Director
Mr Haile Gebru, MICAH Program Manager
tel 126 690

OMNI Eritrea

tel 122 469, fax 123 769

Mr Semere Gebregiorgis, Resident Coordinator
Dr Rebecca Kohler, IEC Advisor
Ms Rigbe Mesfin-Mascio, Admin/Finance Officer

Netherlands Consulate

Jacqueline Langeslag, MD, Advisor
tel 127 850

APPENDIX A

Scope of Work Frits van der Haar, Micronutrient Program Advisor Asmara, Eritrea, October 24 - November 5, 1997

The primary objective of USAID's program in Eritrea is to increase the demand for, access to, and quality of integrated PHC services, resulting in a sustainable delivery system benefitting Eritrean women and children. The Government of the State of Eritrea (GOSE) is committed to reducing mortality and morbidity related to malnutrition which encompasses the virtual elimination of vitamin A deficiency (VAD) and iodine deficiency disorders (IDD), and a significant reduction of iron deficiency anemia (IDA) in women by the year 2000.

As part as USAID's assistance to GOSE, OMNI pursues a three-pronged implementation approach: (1) to provide TA to the GOSE-led Micronutrient Task Force with the USI/IDD program, in order to strengthen QA system, improve iodized salt production, distribution and monitoring, and examine requirements for sustaining the success of IDD elimination once achieved; (2) to build capacity to use IEC for iodine deficiency and other micronutrient interventions; and (3) to assist in assessing micronutrient supplement delivery systems and assure appropriate prophylaction protocols in the health care system. With Mr. Semere Gebregiorgis taking up the position of Resident Advisor in June 1997, the complete OMNI team is now in place to manage its program.

Technical assistance by OMNI consultants Frits van der Haar and Lorenzo Locatelli-Rossi in June and August 1997 provided further impetus to the USI/IDD program. Recommendations were made to implement a critical series of training activities for small-scale salt producers, health and environmental workers, salt merchants and sectoral staff implementing various components of the USI/IDD program. In coordination with USAID and GOSE, OMNI/Eritrea requested further technical assistance to finalize curriculums for health worker and small-scale salt producer training as well as the monitoring plan, and help in the design of the national verification survey.

Specifically, Dr. Van der Haar will work with the OMNI team in the following activities:

- (1) Review and finalize the curriculum and agenda of the three health worker training courses scheduled for November and December 1997, and January 1998;
- (2) Assist in the design and detailed planning of the curriculum and agenda of a workshop for small-scale salt producers in Massawa, November 1997, which also is to involve representatives of national (UNICEF, NUEYS), zonal and local organizations;
- (3) Meet with USAID/Eritrea, UNICEF and GOSE to review progress of the USI/IDD

program and provide technical inputs toward completion of USI on basis of Locatelli-Rossi's recommendations;

- (4) Review and finalize with Ministry of Education the proposed school-based aspect of the monitoring component and make arrangements for its implementation;
- (5) Consult representatives from MOH, MOTI, University of Asmara and donors to finalize plans for a verification survey of the USI/IDD program, scheduled for 1998;
- (6) Make recommendations to OMNI/Eritrea and OMNI/Washington on next steps;
- (7) Debrief MOH and USAID/Eritrea on accomplishments and recommended next steps;
- (8) Submit a draft five-page trip report in WP.

APPENDIX B

Nov 1, 1997

MICRONUTRIENT INTERVENTIONS TRAINING WORKSHOP MINISTRY OF HEALTH & OMNI/ERITREA ASMARA, ERITREA, NOVEMBER 10-14 1997

VENUE

Health Assistants Training school

AIMS/OBJECTIVES

The *overall aim* of the workshop is to strengthen the capacity of participants to transfer knowledge and skills to their colleagues and to the health workers they supervise. In particular, the *objectives* of the workshop are to provide participants with:

1. Awareness of Eritrea's micronutrient policy, and the progress being made towards the elimination of IDD through salt iodization;
2. Understanding of the importance to improve the nutritional status of children & mothers in Eritrea;
3. Understanding of the role of micronutrients in child survival programs;
4. A forum to exchange experiences and share ideas about micronutrient activities within the context of child survival programs;
5. An opportunity to strengthen their performance in assessing micronutrient problems, and providing educational and other services to tackle these problems;
6. The opportunity to identify needs for future technical assistance in micronutrient programming.

WORKSHOP SCHEDULE

Monday, Nov 10

08:00-8:15	Registration	Organizers
08:15-8:30	Opening Remark	Mr Berhane G/tensae D.G. Health Services
08:30-9:00	Introduction Workshop Objectives Administrative Issues	Organizers
09:00-10:30	Nutritional Status of Children & Mothers in Eritrea	Dr. Mismay G/hiwet

10:30-10:45 - Coffee Break

10:45-12:00 Overview of Iron Deficiency
& Anemia Dr. Negassi Leake

12:00-14:30 - Lunch

14:30-15:30 Overview of Current Trends
in Iron Interventions Dr. Tsige A/berhan

15:30-16:00 - Tea Break

16:00-17:00 Vitamin A Deficiency &
Child Illness/Deaths Dr. Tsigereda G/hiwet

Homework for 3 groups:

- 1. Causes of IDA in women of reproductive age**
- 2. Causes of IDA in infants and young children**
- 3. Benefits of iron interventions for mothers and for children**

Tuesday, Nov 11

08:30-09:30 Overview of Current Trends
in Vit. A Interventions Ms. Salma M. Abubeker

09:30-09:45 Homework results Mr. Semere G/giorgis

09:45-10:00 - Coffee Break

10:00-12:00 Preparation of a Zonal Vit. A
Strategy Organizers & Participants

12:00-14:30 - Lunch Break

14:30-15:45 Principles of Breast Feeding Dr. Michael Mehari

15:45-16:00 - Tea Break

16:00-17:00 Breast Feeding in Eritrea Dr. Mismay G/hiwet

Homework for 3 groups:

- 1. Causes of iodine deficiency in the community**
- 2. Signs and symptoms of IDD in the community**
- 3. What can communities do to control IDD?**

Wednesday, Nov 12

08:30-09:45	Iodine Deficiency Disorders	Dr. Tsighe Youkono
09:45-10:00	Homework results	Mr. Semere G/giorgis
10:00-10:15 - Coffee Break		
10:15-11:15	Iodine Interventions & their Benefits	Mr. Semere G/giorgis
11:15-12:00	Video on Micronutrients "All We Expect"	Organizers
12:00-14:30 - Lunch Break		
14:30-15:45	Monitong & Quality Control of Salt Iodine	Mr. Yemane Kidane
15:45-16:00 - Tea Break		
16:00-17:00	Formative Research Findings on Micronutrients	Ms. Rebecca Kohler

Thursday, Nov 13

08:30-10:00	Nutrition in Pregnancy & Lactation	Dr. Bereket Sebahtu
10:00-10:15 - Coffee Break		
10:15-12:00	Protein Energy Malnutrition	Dr. Michael Mehari
12:00-14:30 - Lunch Break		
14:30-15:30	Growth Monitoring	Dr. Mismay G/hiwet
15:30-16:00	Nutrition Surveillance	Ms. Salma M. Abubeker
16:00-16:15 - Tea Break		
16:15-17:00	IEC on Micronutrients	Ms. Rebecca Kohler

Homework for 3 groups:

- 1. What can Community Health Workers do to improve child feeding?**
- 2. What micronutrient actions can Nurses do when treating sick children?**

3. How can Sanitarians improve family's access to nutrient-rich foods?

Friday, Nov 14

08:30-08:45	Homework results	Mr. Semere G/giorgis
08:45-11:00	Break-out in 2 groups: <u>Group 1:</u> Sanitarians Prepare workplan for action upon return to work station <u>Group 2:</u> Nurses/Health Assistants Field Visit	Mr. Yemane Kidane Mr. Semere G/giorgis Dr. Mismay G/hiwet Ms. Salma M. Abubeker
11:00-12:00	Report Preparation on Group Work	Organizers
12:30-14:30	- Lunch Break	
14:30-16:30	Group Work Presentations & Discussion	Organizers & Participants
16:30-16:45	Workshop Evaluation	Organizers
17:00	Closing	

Nov 1 1997

SUGGESTED GUIDELINES FOR FACILITATORS

DATE/TIME	SUBJECT TITLE	FACILITATOR
Nov 10; 09:00-10:30	Nutritional Status of Children & Mothers in Eritrea	Dr. Mismay G/hiwet
-	Why is nutrition important - Linkages with Health & Survival, Educability, Productivity	
-	How the Food, Care and Health factors impact on Nutritional Status, especially Women & Children	
-	Interactions of Nutrition and Infection (ARI, DD, Measles and Malaria) in Child Health and Survival	
-	Present Knowledge of Nutritional Status and Micronutrient Status in Eritrea	
-	Policies in Eritrea that address these problems	
Nov 10; 10:45-12:00	Overview of Iron Deficiency & Anemia	Dr. Negassi Leake
-	Definition; Iron intake, absorption and physiology; Causes of anemia	
-	Magnitude of anemia in Eritrea (surveys, if available)	
-	Dangers/outcomes of anemia on child behavior/development, maternal/child mortality; worker productivity; economic outcomes	
-	Method for anemia assessment; Criteria; Assessing individuals; Assessing Communities	
Nov 10; 14:30-15:30	Overview of Current Trends in Iron Interventions	Dr. Tsige A/berhan
-	Three principle intervention approaches: Supplementation, Fortification and Dietary modification(s)	
-	Role/Importance of complementary public health approaches: Deworming, Malaria control, Water/Sanitation	
-	Target groups for various interventions and their iron needs	
-	Delivery systems, and IEC for improving behaviors of target groups and providers	
Nov 10; 16:00-17:00	Vitamin A Deficiency & Child Illness/Deaths	Dr. Tsigereda G/hiwet
-	Definition: Sources of Vit. A, absorption, physiology; Causes of Vit. A deficiency (VAD)	
-	Magnitude of VAD in Eritrea (surveys, if available)	
-	Outcomes: Xerophthalmia, lower resistance & childhood infections	

April 7, 1999

- Effectiveness of Vit. A supplementation on childhood morbidity (esp. measles) and mortality

Nov 11; Overview of Current Trends **Ms. Salma M. Abubaker**
08:30-09:30 in Vit. A Interventions

- Methods for Vit.A assessment; Criteria; Assessing individuals; Assessing communities
- The principle intervention approaches: Dietary, Fortification, Supplementation; Importance of a comprehensive program strategy
- Target groups and their Vit. A requirements
- Delivery systems and IEC to improve behaviors of target groups and providers

Nov 11; Preparation of a zonal Vit. A **Organizers & Participants**
10:00-12:00 Strategy (Assignment in 3 groups)

Presentation of a Vitamin A Strategy to the Local Government Committee

Your group has been invited to give a presentation on the vitamin A situation and plans to control vitamin A deficiency in your Zone to a newly formed inter-sectoral committee, composed of the Provincial Medical Officer, and Zonal representatives of Agriculture, Trade & Industry, Finance, Defense, Labor & Social Affairs. This is a unique opportunity to convince key decision-makers of the importance of specific actions to improve the vitamin A status and secure the necessary resources for immediate and long-term impact on health and survival of mothers and children.

You should assume that the basic understanding of the role of vitamin A in child health and survival is rather low. You will need to address the concerns of all the sectors represented and show how vitamin programming is relevant to the different members of the committee. Outline a vitamin A strategy that addresses immediate, medium and long-term concerns.

Your group will work for 45 minutes and should prepare a 7-10 minute presentation to the committee. Be prepared also to follow-up on questions from the representatives on the committee.

Nov 11; Principles of Breast Feeding **Dr. Michael Mehari**
14:30-15:45

- Why is breast feeding important - Linkages with mothers' and children's health, growth and survival; Additional benefits for mothers (recuperation; LAM)
- Breast feeding physiology; composition; hormonal regulation; mother-child interactions
- What can health workers do to promote appropriate breast feeding practices
- Breast feeding and complementary feeding; The weaning process
- Policies/practices of appropriate breast feeding

Nov 11; Breast feeding in Eritrea **Dr. Mismay G/hiwet**
16:00-17:00

- Information about breast feeding in Eritrea; Epidemiology, (traditional) practices
- Policies in Eritrea to promote appropriate breast feeding
- Barriers, and what health workers can do to remove these barriers
- What can health workers do to promote breast feeding: Improving household behaviors and community supports (Peer counseling and breast feeding support groups); Adequate facility-based services community (Appropriate nutritional counseling)

Nov 12; Iodine Deficiency Disorders **Dr. Tsighe Youkono**
08:30-09:45

- Definition; Causes of IDD; Iodine metabolism and functions of thyroid hormones
- Magnitude of IDD in Eritrea (surveys, if available)
- Outcomes of iodine deficiency: Goiter, cretinism, reproductive failure, brain development
- Methods of IDD assessment; Criteria; Assessment of individuals (cretinism, thyroid hormones) and communities (urine excretion, TSH distributions)

Nov 12; Iodine Interventions & their **Mr. Semere G/giorgis**
10:15-12:00 Benefits

- Principle approaches of improving iodine intake: Salt iodization, Water; Supplements (Iodized oil, potassium iodide tablets)
- The need for a "universal" vs. a "target group" approach; Justification for choosing USI as the main approach
- Role of the commercial (salt) sector; Principles of salt iodization technology; Packaging, branding and marketing (merchants, wholesalers, retailers)
- USI program components: Assessment, Monitoring, IEC (all aspects short)

11:15 "All We Expect" : Benefits of Iodine Intervention

Nov 12; Monitoring & Quality Control **Mr. Yemane Kidane**
14:30-15:45 of Salt Iodine

- Methods for salt testing; Spot-tests, titration; Sampling, interpretation
- Role of legislation/regulation; Standards
- What can salt producers do to ensure salt and iodine quality (processing, packaging)
- What can the health sector do (sanitarians, community health workers, facility-based workers)
- Role of other sectors: Teachers, Youth, etc
- Truths and myths of iodine and iodized salt

Nov 12; Formative Research Findings **Ms. Rebecca Kohler**
16:00-17:00 on Micronutrients

- Short introduction on IEC: Approaches to change behavior
- Techniques of communicators; Target groups; Segmentation
- OMNI's strategy to IEC; Plans; Formative Research methods (focus groups, observations, key informant interviews)
- Selected findings: Household practices; Community knowledge and practices
- Selected findings: Health worker knowledge and practices, Policy and decision-maker knowledge and attitudes
- Selected findings: Salt producer, merchant and trader understanding and practices

Nov 13; Nutrition in Pregnancy & **Dr. Bereket Sebahtu**
08:30-10:00 Lactation

- Nutritional needs and requirements of pregnant and lactating women
- Perceptions by women: Balancing the productive and reproductive roles
- Current trends and concepts of "Maternal Care"; Care **by** mothers; Care **of** Mothers
- Ways to improve maternal nutrition; Benefits for maternal (reproductive) health and for child survival and development
- What health workers can do: Individual/Household behaviors, Community supports; Facility-based services

Nov 13; Protein Energy Malnutrition **Dr. Michael Mehari**
10:15-12:00

- Principles of child growth and development; Nutritional requirements; Child feeding practices (See above for sessions on Breast Feeding)
- Epidemiology of PEM in Eritrea; Linkage to child morbidity and mortality
- Diagnosis of PEM; Standards; Classification; Appropriate action
- Nutrition Rehabilitation; Facility-based and home-based; Follow-up
- Weaning foods; Quantity, Quality, Density, Frequency, Choices, Variation etc.
- Programs to prevent PEM in young children
- Other groups (School children, Adolescent females, Elderly)

Nov 13; Growth Monitoring **Dr. Mismay G/hiwet**
14:30-15:30

- Assessment of child growth; Standards; Classification; Appropriate action
- Nutritional counseling of mothers; Working with household members on child feeding recommendations

- The sick child: Effects on growth; IMCI; IEC

Nov 13; Nutrition Surveillance **Ms. Salma M. Abubaker**
15:30-16:00

- Need for nutrition surveillance; Role in predicting (Early warning) and identifying nutritional shortages in vulnerable groups; Criteria
- Use of nutritional status data for surveillance purposes (Pro's and con's)
- Eritrea policy; Integration in HMIS; Appropriate responses

Nov 13; IEC on Micronutrients **Ms. Rebecca Kohler**
16:15-17:00

- Short recapitulation on IEC (previous presentation)
- A selected example of the approach: Problem - target group(s) - message(s) - media - information provider; Implementation, M&E
- OMNI's plans for assistance in IEC on Micronutrients; Promotion of iodized salt consumption; Appropriate behaviors for vit. A and iron
- What can health workers do in IEC?

APPENDIX C
10.31.97

Achieving USI in Eritrea: The Final Step

A workshop to mobilize small-scale salt producers in Northern Red Sea Zone

In December 1995, Eritrea inaugurated the establishment of salt iodization capacity in the two large-scale salt industries located in Assab (Assab Salt Works; up to 350,000MT annual capacity) and Massawa (Massawa Salt Works; up to 250,000MT). To ensure continuity of the established salt export to Ethiopia and promote productive employment in Southern Red Sea Zone, Eritrea has given high policy priority to developing, maintaining and quality assuring the iodized salt production by large as well as medium-to-small-scale salt producers in the area along the Red Sea coast around Assab which reaches from Kigoma, 50km to the south, to Bareosole, approx. 150km north of Assab. Assisted by government with support of OMNI, UNICEF and others, salt producers in the Southern Red Sea Zone have been enabled to manufacture iodized salt through the provision of technology and training, and quality assurance during production runs immediately prior to dispatch to the traders. The Eritrean Standards Institution (ESI) has established operations from Assab town, and has started to routinely provide external quality control checks of the iodized salt production in these salt works. ESI issues a Certificate of adequacy when results from these tests are in conformance to newly established national standards. Practically all salt from the Assab area is exported to Ethiopia. At import, the Ethiopian authorities have begun to inspect salt import and demand for the Certificate issued by ESI.

Eritrea itself obtains virtually all its domestic salt from the coast in Northern Red Sea Zone around Massawa. Massawa Salt Works is a large-scale industry located on the fringe of town which produces good quality iodized salt for domestic distribution and, increasingly, export. A quick survey early in 1997 identified small-scale salt production areas in Hasmet (60km north of Massawa with 300 producers), Gurgusum (10km north, 118 producers), Agip (5km south, 73 producers) and Wekirtom (140km south of Massawa, 30 producers). Thus, 521 individual salt producers have registered as member of the Associations of these areas. The total production capacity was estimated at 7,500MT annually, which would theoretically provide 1.5 million population with their salt consumption needs. Also, a private enterprise named Alkader Salt Works is starting up production since 1997, and they have an established area of 7ha near Embereni, some 35km north of Massawa. Only Massawa Salt Works and Alkader Salt Works are using the modern, three-stage salt production method which leads to adequate basic salt.

In August-September, 1997 a team of experts from MOH, MOTI, OMNI and UNICEF made an assessment of the needs for these small-scale producer associations to improve on their salt production methods, and to include the iodization of the basic product. UNICEF has quickly proceeded to procure the needed tools and equipment, expected to arrive in-country by early 1998. In preparation of their distribution and deployment, OMNI will sponsor a workshop, tentatively by end November 1997, to further inform and sensitize the producer associations, their members and the associated authorities and salt traders.

In the following, suggested Terms of Reference are given for this workshop.

Suggested Terms of Reference

Workshop for Small-Scale Iodized Salt Producers

Massawa, November 24-25, 1997

<u>Sponsor</u>	OMNI project Asmara
<u>Collaborating agencies</u>	Eritrean Ministry of Health Eritrean Ministry of Trade and Industries Zonal Administration, Northern Red Sea Zone Municipality of Massawa Eritrean Standards Institution National Union of Eritrean Youth and Students (NUEYS) UNICEF Asmara
<u>Venue and local Host</u>	Massawa Salt Works, Mr Negassi Goitom, General Manager
<u>Officials</u>	Zonal Administrator (Governor) Massawa Municipality (Mayor)
<u>Facilitators</u>	MOH: Dr Mismay Gebrehiwet, Director PHC Ms Salma Abubeker, Head of Nutrition MOTI: Mr Sengal Woldetensae, Director of Industry Mr Tesfay Weldeselassie, G. Mgr, Assab Salt Mr Negassi Goitom, G. Mgr, Massawa Salt Eng. Abraham/Eng. Michaelis, Asmara ESI: Mr Akberom Tedla, G. Manager Mr Ammanuel Kasete, Standards Officer NUEYS: Mr Hadji, Regional Officer UNICEF: Mr Yemane Kidane, Nutrition Officer, small cooperatives expert/consultant OMNI: Mr Semere Gebregeorgis, Resident Coordinator Ms Rebecca Kohler, IEC Advisor
<u>Participants</u>	# Executive Committee of the Salt Producer Association (Chair, Vice-Chair, Auditor, 3 members; 6 total) - from Hasmet - from Gurgusum 18 - from Agip Two selected participants

- 2 - from Alkader Salt Works
- 4 Representatives Zonal Government (e.g., Health, Trade, etc)
- 3 Representatives of local salt traders/distributors/merchants

Total 27

With facilitators: Total approx. 40 persons

Organizing Committee Mr Sengal W/tensae, Director Industries, MOTI
Dr Mismay G/hiwet, Director PHC, MOH
Mr Akberom Tedla, General Manager, ESI
Mr Yemane Kidane, Project Officer, UNICEF
Mr Semere G/giorgis, Resident Representative, OMNI

Aims and Objectives

The *overall* aim is to further sensitize invited participants to the need of providing the Eritrean population with good quality iodized salt, with special reference to the small-scale producers around Massawa.

Specifically, the objectives of the Workshop are to provide the participating Association members with:

1. Awareness of Eritrea's policy, and the progress made towards IDD elimination;
2. Acceptance of the need for private-public collaboration to achieve this goal;
3. Understanding of the roles of the government (in policy, support and legislation), the Eritrean Standards Institution (in standards and inspection) and the supporting agencies (sponsorship and technical assistance);
4. Willingness to promote the production, branding and marketing of good quality iodized salt by members of the Associations;
5. Information about the plans for assisting the Associations with tools, equipment and training for modernizing the salt production and including salt iodization;
6. A forum for exchange of experiences and sharing of ideas about how to further proceed to achieve Universal Salt Iodization in Eritrea;
7. Opportunities to discuss and identify specific assistance needed by members of the Associations to become part of the salt iodization program.

Suggested agenda
Workshop for Small-Scale Iodized Salt Producers
Massawa, November 24-25, 1997

<u>Day 1</u>	<u>Theme or Subject</u>	<u>Facilitator(s)</u>
07:00	Opening ceremony Opening remarks Word of welcome	Organizing Committee Governor, Northern Red Sea Zone followed by the Mayor, Massawa Mr Negassi Goitom, Massawa Salt Works
07:20 Tea	Officials leave by 7:30	
<u>Session 1:</u>	<i>Moderator Mr Semere G/giorgis</i>	
07:45	Introductions	
08:00 - 08:30	Iodine and Health: Information about Eritrea's IDD Elimination policy	Dr Mismay G/hiwet, MOH
08:30 - 09:00	Information about Eritrea's progress with USI	Mr Sengal W/tensae, MOTI
09:00 - 09:30	Questions & discussion	
09:30 Coffee		
<u>Session 2:</u>	<i>Moderator Dr Mismay G/hiwet</i>	
09:45 - 10:15	Management of good (3-stage) quality salt production, use of Baume densitometers, etc.	Mr Tesfay W/selassie, ASW
10:15 - 10:45	Standards and legislation	Mr Akberom Tedla, ESI
10:45 - 11:15	Procurement and deployment of tools and equipment	Mr Yemane Kidani, UNICEF
11:15 - 12:00	Questions & discussion	
<u>Session3:</u>	<i>Coordinated by Massawa Salt Works</i>	
12:00 - 13:00	Demonstration of iodization technology and equipment Followed by 3 break-out groups to observe:	Iodization Mgr, MSW

13:00 -	1. Use of Baume densitometer 2. Quick test of salt iodine 3. Laboratory test of salt iodine Tour of the Massawa salt plant	Salt Production Mgr, MSW Mr Ammanuel Kasete, ESI Lab Technician, MSW Transport: Massawa Salt Works
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Day 2

Session 4: *Moderator Mr Yemane Kidane*

7:00 - 8:00	Video presentation & discussion	Ms Salma Abubeker, MOH
8:00 - 8:30	Role of external quality control and importance of adhering to standards	Mr Ammanuel Kasete, ESI
8:30 - 9:00	Methods for internal quality assurance	Mr Tesfay W/selassie, ASW with Iodization Mgr, MSW & Lab Technician, MSW
9:00 - 9:30 9:30 <i>Coffee</i>	Questions & discussion	

Session 5: *Moderator Mr Akberom Tedla*

9:45 - 10:30	Perceptions of salt traders and consumers	Ms Rebecca Kohler, OMNI
10:30 - 11:00	Packaging, Branding and Marketing	Mr Negassi Goitom, MSW with Ms Rebecca Kohler, OMNI
11:00 - 12:00	Questions & discussion	
12:00 - 13:00	Planned support to Salt Associations	Mr Sengal W/tensae, MOTI with Mr Yemane Kidani, UNICEF

Session 6: *Moderator Mr Sengal W/tensae*

13:00 - 13:45	Discussion and agreement of "next steps"	Organizers and Participants
13:45 - 14:00	Closing remarks	Mr Semere G/georgis, OMNI

Timeline for preparation

<u>Date of completion</u>		<u>Task to be completed</u>	<u>Responsible</u>
A.s.a.p.	1.	Request video(s) from UNICEF/ICCIDD/MI	Semere
November 6	1.	Conduct meeting of Organizing Committee; distribute responsibilities	Convener: OMNI
November 7	1.	Confirm workshop dates with host and officials	Semere
	2.	Complete budget and secure financial contributions, as appropriate	Semere, with Organizing Committee
	3.	Identify/invite small-scale enterprise expert	Yemane
November 14	1.	Written guidelines and invitations sent to facilitators and moderators	Semere, on behalf of Organizing Committee
	2.	Invitation letters to participants	Semere, u.f.s. MOH
	3.	Request Host to make necessary preparations (see Nov 17)	Semere, u.f.s. MOTI
	4.	Invitation letter to officials	Semere, u.f.s. MOH
November 17	1.	Arrange for catering	Host
	2.	Arrange for venue preparation (seating, video player/monitor)	Host Host
	3.	Arrange for transport for tour (Session 3)	Host
November 20	1.	Conduct Organizing Committee meeting, verify preparations and appropriateness of budget	Convener: OMNI
November 21	1.	Verify that facilitators are preparing contributions	Moderators (each for own session as indicated in proposed program)

2. Ensure that practical demonstrations are being prepared
 3. Verify that officials and invited participants will show up
- Negassi (staff of Massawa salt works);
Semere (Ammanuel)
Semere (by telephone)

APPENDIX D

Nov 4, 1997

Community Monitoring-Promotion of USI

Principle

Eritrea is progressing towards Universal Salt Iodization (USI) to eliminate Iodine Deficiency Disorders (IDD). A national survey in 1993 by revealed that goiter was prevalent among 23% of school-aged children, while 82% of the children had an iodine deficient urinary excretion. Thus, by international standards, IDD was shown to be a public health problem. Because salt iodization is cheap, simple, safe and quickly effective, this was chosen as the prompt intervention in Eritrea.

The underlying USI aim is to provide access to iodized salt in all retail outlets. Community health workers, primary school teachers and Youth Association staff are uniquely positioned to promote and monitor iodized salt in communities. For monitoring, three aspects are important:

- (1) *Retail access* by communities will be regularly assessed by youth staff of NUEYS, using the spot test kits;
- (2) *Household availability* of iodized salt will be periodically assessed during school-based class exercises organized by teachers and based on LQAS using spot test kits;
- (3) *Use* of iodized salt will be continuously promoted by the community health worker who provides preventive education to the community¹.

The work of these community agents will be coordinated through the Zonal Health Management Teams which include health workers trained by OMNI in the health worker training of November 1997 - January 1998 (see above).

The assessments by youth staff and teachers will generate results immediately useful for follow up by promotional efforts directed to retailers and students. The youth staff and teachers of a given community coordinate their efforts with the community health worker. The results of monitoring and follow-up should be a regular (*e.g.*, 3-monthly) item for the village government (Assembly) agenda to provide supervision and ensure universal iodized salt consumption in communities.

The recommended terms of reference for USI monitoring in communities are as follows:

¹ Community Health Services, Policies and Guidelines. Draft, BASICS, Eritrea, Sept 1997

<< DRAFT >>

Recommended Terms of Reference Community Monitoring of USI

<u>Supervisory Committee</u>	National Micronutrient Task Force
<u>Collaborating Agencies</u>	Ministry of Health Ministry of Education National Union of Eritrean Youth & Students (NUEYS)
<u>Sponsor</u>	OMNI project, Asmara
<u>National Focal Point</u>	Head, Nutrition Unit Department of PHC Ministry of Health
<u>Coordination</u>	Zonal Health Management Teams
<u>Aims and Objectives</u>	The <i>overall</i> aim is to obtain information useful for making decisions to ensure the consumption of quality iodized salt throughout Eritrea.

Specifically, the objectives of the Community Monitoring system is to provide

- (A) *communities* with:
1. The capacity to assess the iodized salt access in retail outlets, and availability in households in order to verify that the community's use of iodized salt is assured;
 2. Information for decision-making by village assemblies about progress towards preventing IDD in the community, and about follow-up activities with salt traders, as appropriate, when needed;
- (B) the *National Micronutrient Task Force* with:
1. The capacity to obtain ongoing information about iodized salt in communities as a basis for analysis and decision-making;
 2. Information about access to, and availability of iodized salt in households throughout Eritrea;
 3. An opportunity to identify and, as appropriate, follow-up on constraints in the supply and distribution of iodized salt to communities where iodized salt access or availability is inadequate.

Implementation

Youth Associations

Once every month, a designated member of the Youth Association will visit all retail outlets serving the community to assess whether the salt offered for sale is iodized. Each salt brand will be tested with a field kit and the result (iodized/not iodized) will be reported on a pre-stamped post card addressed to the National USI Monitoring focal point in MOH.

Primary School Teachers

Once every quarter, a primary school teacher will organize a school class, asking children to bring a salt sample from home, for testing whether households have adequate availability of iodized salt. The LQAS test will be organized as per guidelines given in the USI Monitoring Manual². Action will be organized in coordination with the Community Health Worker and the Youth Association to follow up on merchants in the community in case household availability is insufficient. Guidelines for the tests will be communicated from the National USI Monitoring focal point in MOH.

Community Health Workers

The results of tests obtained by Youth members and teachers will be collected and discussed with the CHW who promotes iodized salt for consumption to all members of the community. The CHW will report the findings and, as appropriate, recommendations for community action, in the village assembly.

Decisions, preparation and logistics

The D.G. Health will call a meeting of the National Micronutrient Task Force to discuss the proposed system, identify a National Focal Point, and mobilize commitments from MOE (Director Curriculum Development) and NUEYS (Chair Person) for participation in its implementation. OMNI will develop a detailed work plan and budget, incl. for the training of Youth and Teachers and a Scope of Work for the National Focal Point, and submit this to the meeting of the Task Force. Upon agreement on the plan and budget, OMNI will work with the National Focal Point on its implementation. Coordination of community-based workers is to be provided through the Zonal Health Management Teams.

Development and distribution of materials, such as test kits, Youth and teacher's guidelines, postcards, etc, will be coordinated between OMNI, MOE and NUEYS. Their distribution will be integrated with existent systems, to the extent possible. Expenditures will be tracked by OMNI.

The system will be implemented beginning in March-April, 1998.

² Sullivan KM, et al: Monitoring Universal Salt Iodization Programmes. UNICEF, PAMM, MI, ICCIDD, WHO. Atlanta, January 1995.

APPENDIX E

Nov 4, 1997

Draft Outline 1998 Verification Survey

Eritrea is implementing Universal Salt Iodization (USI) as the main intervention to eliminate Iodine Deficiency Disorders (IDD). A quick national survey in 1993 revealed that goiter was prevalent among 23% of school-aged children while 82% of the children sampled were iodine deficient as indicated by urinary excretions $<10 \mu\text{g/dL}$. Thus, by international standards, IDD in Eritrea was shown to be a public health problem requiring priority intervention. Because salt iodization is cheap, simple, safe and quickly effective, it was chosen as the main strategy for IDD elimination in Eritrea.

As part of rehabilitating the war-damaged salt industry, Eritrea moved swiftly to include salt iodization in the large salt enterprises along the Red Sea coast. Completion of USI in Assab Salt Works and Massawa Salt Works was celebrated by end 1995. Since then, the medium- and small-scale salt production industries in Southern Red Sea Zone and around Massawa have also been (and continue to be) modernized by introduction of modern salt production methods which include iodization. By end 1996, $>90\%$ of all the salt production capacity in Eritrea included salt iodization.

Other progress has been made in the areas of legislation and quality assurance of iodized salt. A Presidential Decree that all salt produced and traded in Eritrea must be iodized has been drawn up, and the Eritrean Standards Institution (ESI) has established national standards for edible salt, including iodization. Inspectors from ESI provide external quality control tests for salt producers in Southern Red Sea Zone and they have started enforcing the standards. A similar external quality control mechanism is being set up in Massawa for salt production in the Northern Red Sea Zone. Internal quality assurance has been introduced in salt industries by testing of iodine levels during production, and iodized salt is being packed in polyethylene bags to prevent iodine against gross deterioration during the the time of trade and distribution to the retail outlets in communities.

The planned promotion of iodized salt to consumers is also gaining momentum, particularly by advertising in the trade column and by merchants in communities. Beginning by late 1997, a community-based monitoring system will be introduced to ensure adequate access to iodized salt in shops and markets, and to identify insufficiencies in availability of iodized salt in households. The design of the monitoring system will provide for immediate remedial action by the community if access or availability should be found wanting.

The National Micronrient Task Force, chaired by the D.G. Health Services MOH, is planning a survey in 1998 to assess the coverage and penetration of iodized salt in the country and verify that

April 7, 1999

iodized salt has the expected impact of reducing iodine deficiency and eliminating IDD in the population. International guidelines for such surveys have been agreed upon by WHO, UNICEF and ICCIDD. The USAID-sponsored OMNI project will technically assist in its design, implementation and analysis. Terms of reference are recommended as follows:

<< DRAFT >>

Recommended Terms of Reference IDD Verification Survey in Eritrea

<u>Sponsor</u>	OMNI project, Asmara
<u>Collaborating Agencies</u>	Eritrean Ministry of Health Eritrean Ministry of Education Zonal administrations University of Asmara UNICEF, Asmara
<u>Organizing Committee</u>	Mr Berhane G/tensae, D.G. Health Services Mr Semere G/giorgis, Resident Representative, OMNI Dr. Melles Seyoum, Director, Central Health Laboratory Dr. Kopano Mukelabai, Resident Representative, UNICEF
<u>Principal Investigator</u>	Afeworki Asghedom Mascio, Ph.D. Professor of Immunology & Molecular Biology University of Asmara College of Health Sciences
<u>Aims and Objectives</u>	The <i>overall</i> aim is to obtain information about the progress accomplished in eliminating IDD in Eritrea.

Specifically, the objectives of the survey are to provide the National Micronutrient Task Force with:

1. The capacity to capture the iodine status of the population through goiter assessment and urinary iodine determinations in a representative sample of the school children population;
2. Information about goiter prevalence and urinary iodine levels in school-aged children, and adequacy of iodized salt in households;
3. Verification that the national USI program has its desired impacts;
4. The opportunity to identify and follow-up on any shortcomings, or required modifications in the implementation of the national IDD program;
5. An information base for generating ideas and taking decisions on sustaining the success of IDD elimination, once achieved.

Implementation

Under supervision from the Organizing Committee, the Principal Investigator will be responsible for the implementation of the survey. Funding decisions will be the responsibility of the OMNI Resident Representative. A Scope of Work for the P.I. is attached.

Design

Although WHO guidelines suggest that 30 clusters is the minimum number sufficient for obtaining a representative estimate³, 60 schools (clusters) will be selected from the 6 Zones in Eritrea to reflect the agro-ecological diversity and the un-even distribution of salt production sources in the country. In each cluster, data will be collected from enrolled school children on goiter grade, urinary iodine concentration and whether a salt sample brought from home contains iodine. Because the school enrolment in Eritrea, particularly in rural areas, is rather low,⁴ some additional household-based survey data will be collected to validate that the school-based information reflects the true situation in the country.

School-based survey

Number and selection of schools

The number of schools to be surveyed in each Zone is determined by the (estimated) population distribution as follows:

Zone	% of total country population (est.)	Schools to be selected	
		Number	% of total
1. Southern Red Sea	5.2	3	5
2. Northern Red Sea	10.2	6	10
3. Ansebba	11.1	7	12
4. Gash-Barka	14.8	9	15
5. Debub (South)	16.9	10	18
6. Makel (Center)	41.8	25	42
Total	100%	60	100%

³ Indicators for Assessing Iodine Deficiency Disorders and their Control through Salt Iodization. Geneva, World Health Organization, Document WHO/NUT/94.6.

⁴ Almost half (48.4%) of the 6-15 year-old children in Eritrea attend school, but total urban enrolment (85.3%, with 91.8% in Asmara) is almost 50 percentage point higher than rural enrolment (35.1%). Source: Eritrea Demographic and Health Survey, 1995.

Advice will be sought from the National Statistics Office (Mr. Woldeyesus Elias) to verify that the proposed numbers of schools accurately reflects a proportional-to-population-size (PPS) selection. Within each Zone, schools are to be selected randomly from the list of primary schools in the Zone. The Ministry of Education has agreed to assist in this selection step.

Number and selection of pupils/salt samples

Within each school, the following data will be obtained:

- (i) Goiter: The goiter grade will be assessed from 55 pupils selected randomly⁵. If the school enrolment is sufficiently large, all the pupils in Standard (Grade) 3 and 4 (i.e., preferably those aged 9 and 10) are eligible⁶; Otherwise include also all pupils in Standard 3 (age 8) and Standard 5 (age 11) and, if needed, those in Standard 1 (age 7) or 6 (age 12). Because of the effects of pre-adolescent growth spurt, inclusion of older children should be avoided if possible.
- (ii) Urine: A 1mL urine sample will be obtained from 35 pupils selected randomly. Proceed with obtaining eligible children as explained above. NB: Note that pupils may be selected for both goiter assessment *and* urine collection.
- (iii) Salt: Salt samples brought by pupils from their households will be tested for the *presence* of iodine using the rapid test kits. All the salt samples brought by pupils selected for goiter assessment or urine collection are eligible. Testing will proceed in two steps as follows:

Step 1. LQAS test for adequacy of household iodized salt availability:

From the total eligible number of salt samples, select n samples at random and line them up in a row. Test all samples with the rapid test kit. For a community to have adequate availability of iodized salt in households, at least d* samples should test positive.

Step 2. Proceed with also testing the remaining salt samples until the total number of eligible samples has been completed.

⁵ Assuming a goiter prevalence of 5%, assessing 55 children would allow a relative precision ϵ of 10% (design effect 3). For the country as a whole, goiter assessment of 3,300 children allows a relative precision of 1.3%. In other words, if a country-wide prevalence of 5.0% is obtained, the true prevalence will be between 4.93% and 5.07% with 95% confidence.

⁶ Since rural school enrolment occurs at about 1 year later than in urban areas (DHS 1995), this restriction should be modified accordingly for the rural schools in the sample.

The results of *all* the salt tests will be recorded.

Notes

- (i) The goiter assessments will be done by a Medical Officer recruited from the Zonal (or sub-Zonal) health administration, especially trained for this purpose. The result of all the assessments for a given Zone will be compared with the 1993 survey to determine if indeed the goiter prevalence has decreased over time.
- (ii) Values for n and d^* will be determined by agreement with members of the IDD Task Force. They depend on a decision of two values, H_a and H_0 , defined as follows:
 H_0 : The proportion of salt expected to be adequately iodized in households (e.g., 90%);
 and,
 H_a : The proportion of adequately iodized salt at which the availability of salt in households is considered to be *insufficient* (e.g., 60%).

 H_a and H_0 values should be selected so as to identify a reasonable number of schools (communities) for follow-up activities. Values for n and d^* are obtained from standard statistical tables. Statistical advise will also be sought for this decision.
- (iii) The result of the LQAS test will be discussed with the head master. If the test indicates that households have adequate iodized salt available, there is cause for commendation. If, in stead, the test indicates inadequate availability of iodized salt, the cause(s) should be investigated and addressed. The most likely cause is that iodized salt is not being sold from the shops where the community does its shopping. Thus, the survey team leader should assist the community (preferably with a village authority) by testing whether the salt in village shops is iodized. If the salt in a given shop or market stall is inadequate (no iodized salt for sale), the owner should be encouraged to obtain iodized salt from his supply source. If, however, iodized salt is for sale in (a) shop(s), the teachers should instruct pupils to tell their households to obtain iodized salt from the shop(s) that have it for sale.

Validation of school-based data in rural communities

Although it is unlikely that households with school children will obtain their salt from other sources than households where children do not attend school, there is reason to validate that the data obtained from schools is representative of the country.

A tentative approach could be that for a sub-sample of rural clusters in the selection, an adjacent village is identified for conducting house-to-house visits to obtain the same data as described above for the school-based survey. For example, from the total number of rural clusters selected, 4 or 5 clusters (approx. 10%) could be randomly identified for a complementary household-based survey in the village which is located at a given minimum distance from the initial school selected. The design and selection issues for the household survey will be further developed and discussed with the Committee.

In villages selected for household data collection, obtaining data will be rather straightforward. Surveyors

will select households randomly in the village until a total number of 55 school-eligible children have been found for goiter assessment, 35 urines obtained from eligible children, etc. The appropriate approach will be further developed with involvement of the statistical officer.

Preparation and logistics

- (i) OMNI will develop the budget for submission to MOH. The budget will include detailed estimates for the costs of personnel (consultants, time), training, equipment and materials, transport, stationnary, statistical analysis, report preparation, and dissemination. Also, the expenditures will be tracked by OMNI.
- (ii) Upon agreement on the budget, a detailed work plan will be developed by the P.I., including personnel hiring procedures, transport arrangements, training and standardization of Health Officers involved in the goiter assessments, laboratory capacity building (in the Central Health Laboratory) and laboratory quality assurance procedures, a time-frame for Zone-to-Zone survey implementation which takes the timing of the end of school year into account, survey quality assurance procedures, and arrangements for data analysis, report preparation and dissemination of the information.
- (iii) All supplies will be obtained through procurement by the OMNI office.

Implementation

All the school-surveys and household-based data collection will be completed before end of May, 1998. Data nalysis, reporting and activities to widely disseminate the information obtained will be completed before end of August, 1998.

Suggested Scope of Work for Principal Investigator

Under general guidance of MOH, a national IDD Verification Survey is planned to be conducted in Eritrea, January-August, 1998 under supervision from a Committee of representatives from MOH, Central Health Laboratory, UNICEF and OMNI. Resources for this survey will be available through the USAID-sponsored OMNI project. The Resident Representative of OMNI will be responsible for budgeting decisions and accounting of expenditures.

The survey will be implemented by a Principal Investigator, who will have following Scope of Work:

- (i) Prepare a detailed implementation plan, following the guidelines provided in the Terms of Reference defined by the Committee and agreed upon by MOH;
- (ii) Coordinate the manpower, material and organizational needs for implementing the survey with the survey budget developed by OMNI;
- (iii) Be responsible to provide leadership, guidance and supervision to the survey personnel in timely completion of:
 - the detailed design of the survey,
 - the training of survey personnel,
 - making transport arrangements,
 - capacity building for urine sample analyses, including external quality assurance,
 - execution of field work, including verification of data collection and quality,
 - completion of data analysis and interpretation,
 - production of the survey report and its dissemination;
- (iv) In collaboration with MOH and OMNI, take responsibility for writing the technical survey report and for coordinating the interpretation of findings;
- (v) On basis of the technical report, provide the National Micronutrient Task Force with feasible recommendations to:
 - address any shortcomings, or required modifications in the USI program, and
 - strengthen the IDD program to secure its future sustainability at lower resource input;
- (vi) Submit at the end of each calendar month a 2-page progress report in WP to the Committee;
- (vii) Submit a 5-page end report, evaluating the overall experience in completing the survey. The technical survey report should be annexed to this report.