

**APPLICATION FOR AN STDF PROJECT GRANT**

**Theme 2:**

**“Capacity building for public and private organizations, notably with respect to market access”**

**Date of submission: April 2006**

<b>1. Project title</b>	<b>Strengthening the food safety and food control system in Eritrea</b>
<b>2. Requesting government/agency or private body</b>	Ministry of Agriculture, <b>MoA</b> , <u>Contact:</u> Mr. Tekleab Mesghena DG, Regulatory Services Department and Codex National Contact Point Ministry of Agriculture P.O.Box 1162, Asmara, Eritrea Tel: 291-1-120395 Fax: 291-1-127508 E-mail: mtekleab@eol.com.er
<b>3. Collaborating government agencies</b>	Ministry of Fisheries, <b>MoF</b> , Regulatory Department <u>Contact :</u> Mr. Tecele Alemseghed Director. Fish Inspection and Quality Control Division Tel 551359 Fax 552177 e-mail <a href="mailto:teceleal@yahoo.com">teceleal@yahoo.com</a> Ghibi Fish Landing Port, Massawa, Eritrea  Ministry of Health, <b>MoH</b> ,  Ministry of Trade and Industry, <b>MoTI</b> , <u>Contact:</u> Mr. Beyene Mesghenna General Manager Eritrean Standards Institution (ESI)
<b>4. Project objectives</b> <u>Attach</u> description of project background and rationale	The overall objective of the project is to assist Eritrea in establishing a modern food safety and food control system in accordance with the provisions of the SPS Agreement and compatible with specific requirements of importing countries. The aims are to enhance capacity for exporting fish and fishery products and agricultural commodities and hence facilitate trade and regain traditional export markets, to provide safe food for local consumption and consequently improve conditions of public health, and to reduce poverty.  <u>See Appendix 1: Project background and rationale</u>
<b>5. Overall project management</b>	<u>See Appendix 2: Overall project management and description of the project partners</u>
<b>6. Project activities</b> Itemise main elements here and <u>attach</u> a detailed work plan,	1. Elaboration of a national food safety strategy and policy and a corresponding action plan; 2. Elaboration of an institutional and legal framework for food safety and food

<p>dissemination plan and evaluation plan</p>	<p>control;</p> <ol style="list-style-type: none"> <li>3. Establishment of quality assurance and quality control systems in the food testing laboratories - with a particular focus on accreditation of the Quality Control Laboratory of the MoF;</li> <li>4. Organisation of training workshops;</li> <li>5. Upgrading laboratory facilities and electronic communication.</li> </ol> <p><u>See Appendix 3: Detailed work plan, dissemination plan and evaluation plan</u></p>
<p><b>7. Private/public sector co-operation</b> Detail the arrangements for public/private sector co-operation, if any, in the project</p>	<p>Members of the management of food processing plants and fishery establishments will participate in the training workshop on personal hygiene in food processing plants and principles of HACCP.</p> <p>The private sector will also actively participate in the process leading to a national food safety strategy and policy and a corresponding action plan, and in the development of new legislation. Broad participation of stakeholders is generally believed to improve the quality of the strategy and the legislation, and to be a significant factor in improving their implementation through the creation of consensus in favor of the strategy and the law.</p> <p>Further involvement of the private sector in project activities is not foreseen during the first stage of strengthening the food safety and food control system in Eritrea.</p>
<p><b>8. Partner institutions involved</b> If appropriate, identify STDF partner institutions who will be involved and describe the nature of that involvement</p>	<p>FAO will be responsible for project management and implementation (see sub 5).</p>
<p><b>9. Project outputs</b> Specify outputs clearly and in detail and show the relationship to key STDF objectives including capacity enhancement, improved market access and trade opportunities, poverty reduction, linkages to country or regional program development priorities, public-private co-operation, innovativeness, demonstration effects, etc.</p>	<ol style="list-style-type: none"> <li>1. Enhanced capacity for controlling and improving food safety: <ol style="list-style-type: none"> <li>1.1 A food safety strategy and policy and a corresponding action plan;</li> <li>1.2 A harmonized legal framework for food safety and food control activities in accordance with provisions of the SPS Agreement and requirements of importing countries;</li> <li>1.3 Establishment of a national food safety authority or body to coordinate food safety related activities in the country;</li> <li>1.4 Trained staff of competent national authorities and industry on food safety assessment, food inspection and HACCP implementation.</li> <li>1.5 Trained staff of laboratories on performing food safety tests.</li> <li>1.6 Updated quality assurance and quality control system in and accreditation of the Quality Control Laboratory of the MoF.</li> <li>1.7 Introduction of appropriate quality assurance and quality control systems in other food safety testing laboratories.</li> </ol> </li> <li>2. Improved market access and reducing poverty: <ol style="list-style-type: none"> <li>2.1 Compliance of the Quality Control Laboratory of the MoF with European Union (EU) requirements, leading to an expected upgrading of the country's status to "List I", which will enable the unrestricted export of fish and fishery products to the EU and other countries.</li> <li>2.2 Increased amount of fish and fishery products exported.</li> </ol> </li> </ol>

	<p>3. Improved public health:</p> <p>The health of the local population will be improved through the consumption of safer food.</p>
<p><b>10. Project impact</b> Specify the expected impact the project will have on market access, the SPS situation and poverty reduction. Identify how the project will fit with existing bilateral or multilateral donor projects and programmes, examine the sustainability of the proposed action and, where possible, suggest where the project may be replicated.</p>	<p>The establishment of a modern food safety and food control system compatible with international trade standards is a crucial element in Eritrea's aim to recover its export markets for fish and agricultural products. In this regard, the project addresses immediate capacity building needs, which together constitute a <u>first phase</u> in reaching this overall objective. Essential building blocks such as a national food safety strategy and a corresponding action plan, the establishment of an institutional and basic legal framework, updated quality assurance and quality control systems in the food testing laboratories, as well as training for food inspectors and industry are foreseen under the project.</p> <p>Since the fishery sector is the most advanced, the project has a special focus on updating the quality assurance and quality control system and accreditation of the Quality Control Laboratory of the MoF. In addition, other food testing laboratories will be able to learn from the experiences in the fishery sector. In this regard, it is to be noted that other EU export requirements in relation to landing sites, vessels and processing establishments are already in place. The organization and powers of the Fish Inspection and Quality Control Division (FIQCD) of the MoF – being the competent authority – are satisfactory and the regulation of the safety and quality of fish and fishery products is equivalent to the most relevant EU requirements. Thus, the remaining obstacle is lack of participation in proficiency tests and accreditation of the Quality Control Laboratory of the MoF. In particular, accreditation is expected to lead to an upgrading of the country's status to "List I", which will enable the unrestricted export of fish and fishery products to the European Union (EU) and other countries.</p> <p>To further develop the food safety and food control system "from farm to fork", it is understood that a wide range of additional technical assistance activities need to be undertaken during a <u>second phase</u>. In this regard, the project seeks to establish a platform on which other donors may decide to come in and fund follow-up projects, most notably in primary production - including the veterinary and phytosanitary areas. It is envisaged that the food safety strategy and the corresponding action plan to be developed under the project will prove to be important guidance documents in this respect, and as such the project will have a catalytic role.</p> <p>Other expected impacts of the project include poverty reduction and protection and promotion of human through the production and consumption of safer food. Overall, the expected social and economic project impacts are considered to be positive and will contribute to the sustainable development of Eritrean food production.</p> <p>The sustainability of the proposed action will be ensured by the Government of Eritrea through the continued provision of appropriate budgets for the operation of extension and advisory activities, the establishment of a national body for the coordination of food safety and food control activities and the possible introduction of a Food Safety Fund in order to provide the necessary funds for maintaining the food safety and food control system. The intention of establishing a Food Safety Fund - including its governance and the type of funding it will consist of – will be further elaborated during the project.</p> <p>The project will complement and build on the results of previous projects financed</p>

	by FAO, IAEA and UNIDO, and on a bilateral basis by France, by creating the institutional and legal framework for coordinated actions to promote and control food safety, by upgrading the laboratory testing capabilities and by training responsible government personnel and the private sector.
<b>11. Project inputs</b> Specify total project cost. <u>Attach</u> detailed breakdown of proposed uses of funds.	<b>Total project cost: \$US 404,216</b> <b>STDF contribution requested : US\$ 366.116</b>  <u>See Appendix 4: Detailed budget</u>
<b>12. Non-STDF contributions</b> If appropriate specify any financial contributions expected from sources other than STDF.	The Government of Eritrea will contribute \$US 38,200 of the total project value in staff time and through the provision of physical facilities ( <u>see Appendix 4</u> ). No other financial contributions are expected.
<b>13. Timetable</b> Show proposed commencement and conclusion dates (maximum project duration two years)	The project will have a duration of 2 years.  <b>Starting date:</b> <b>Completion date:</b>  <u>See Appendix 5: Timetable</u>

## APPENDIX 1

### Project background and rationale

Eritrea is a young East African country, which gained independence in May 1991 after a 30-year war with Ethiopia. In April 1993, in a referendum supervised by the United Nations (UN) its population voted overwhelmingly (99.8%) for independency. The country then formally joined the international community and became a member of the UN and the Organization of African Unity (the present African Union).

In 1999, Eritrea had an estimated population of 3.5 million and a growing rate of about 3.0% per annum. The country has a total land area of 124,320 km<sup>2</sup> and a marine Exclusive Economic Zone (EEZ) of about 120,000 km<sup>2</sup> along its 1200 km long coastline bordering the Red Sea. Approximately 56,000 km<sup>2</sup> of the EEZ are territorial waters over which the country exercises exclusive sovereignty. The country has more than 350 small and medium-sized islands.

The development of industry in Eritrea, including the food industry, dates back to the Italian colonial period (1890-1941), when Eritrea had a relatively prosperous economy. However, during British rule (1941-1952) and the Ethiopian administration that followed, industry deteriorated mainly due to a lack of investment. At present, Eritrea's industrial base is made up of numerous small and medium scale industries and the Government is making a major effort to increase their contribution to the national economy.

The main sectors of the economy that have good potential for producing export earnings with relatively low levels of investment are fisheries and agriculture. However, ever-increasing international food safety standards and trade regulations seriously hamper the export of fish and agricultural products and hence the country's efforts to gain market access.

Currently, over 80% of Eritrea's population depends for its livelihood on traditional agriculture, including crop production and livestock industry. Agriculture contributes about 16% of Eritrea's GDP. Eritrea produces a variety of horticultural crops. Its climate allows for year-round production of a wide range of fruits and vegetables. There are several large farms as well as numerous small scale commercial farmers engaged in the production of horticultural crops. The major crops with their 5 years average yields in tons are: apple (0.92), banana (2.0), barley (0.46), date (1.3), garlic (0.41), grape (1.4), lemon (1.8), (0.36), onion (1.8), orange (1.0), pearl millet (0.22), pepper (0.68), potato (1.3), sorghum wheat (0.5), taff (0.32) and tomato (1.1).

In the sixties and seventies, Eritrea was an exporter of animals and products of animal origin to its neighbouring Arab countries, Europe and the Far East. Products included frozen meat, beef in jelly, corned beef, meat extract and by-products such as hides and skins. Due to a variety of factors (including concurrent drought and war), performance of the meat industry deteriorated and as a result the export of animal and animal by-products gradually decreased. The annual live animal export during the last 10 years amounted to less than a few thousand for cattle and goat, and for sheep it ranged between a few thousand to 30000.

Presently there are four milk- and three meat-processing plants, thirteen municipal slaughterhouses and five tanneries. The milk and meat processing and milling companies recognize the need for improving the hygiene conditions within the plants. However, the facilities, which are old and should be completely renovated in some cases, make it difficult, if not impossible, to meet the minimum requirements of personal and operational hygiene.

In particular the fisheries industry has good potential for making a significant contribution to the overall growth of the national economy. Eritrea's coastal waters are the home of many fish species and other marine resources. Reef fishes (fillets) and shrimps (frozen) for instance are in great demand in Europe, while demersal species and shark fins have a potential market in the Middle East. The industry, however, is still grossly underdeveloped. Whereas the maximum anticipated yield of total fish catch is estimated at around 80,000 metric tons, at present less than 15% of the potential catch is utilized.

According to a report of DG SANCO (2003)<sup>1</sup>, the landing sites and the fishing vessels that were visited by officials from the Food and Veterinary Office (FVO) are in compliance with Community requirements. The general conditions of the approved establishments can be considered as satisfactory - despite some deficiencies that can be corrected. Moreover, the organization and powers of the Fish Inspection and Quality Control Division (FIQCD) of the MoF – being the competent authority – appear to be satisfactory. The Quality Control Laboratory of the MoF has been officially approved by FIQCD and is correctly equipped.

The main issue according to the DG SANCO report is that the Quality Control Laboratory of the MoF is still not accredited and has not started participating in proficiency tests yet. Once the Quality Control Laboratory will be accredited, and the country will have obtained the desired "List I status", it is expected that the export of fish and fishery products to the EU will rapidly increase. Subsequently, this would provide the financial resources for improving the conditions of production of agricultural commodities and other sectors of the economy.

Strengthening the food safety and food control system covering the whole production chain to meet international trade standards and requirements is urgently needed in order to increase the export of food products. The existing food legislation is outdated and not compatible with international trade standards, while the administrative system is characterized by unclear responsibilities and overlaps in inspection and other control activities. Additionally, modern techniques of process control have to be introduced in the food production and processing industry to achieve the levels of safety and quality which are required for international food trade. One exception - as noted - regards the regulation of the safety and quality of fish and fishery products which seems to be equivalent to the most relevant EU requirements.

Other areas that need immediate attention are the introduction of quality assurance and quality control systems in the other food laboratories, implementation of risk-based food control systems and training in food safety systems. Four laboratories with varying capacities currently work on food safety issues. As noted - the Quality Control Laboratory of the MoF is the most advanced in terms of complying with the requirements of the ISO 17025 Standard. In the other laboratories, only basic equipment is available while the performance of tests is often hindered by a lack of appropriate gases, chemicals and reagents.

At present, the laboratories only perform specific tests for microbiological and physical contamination. As to chemical contaminants, only heavy metals are determined in a limited number and type of samples. The Quality Control Laboratory of the MoF sends samples for determination of chemical contaminants as required by the EU to accredited laboratories abroad. There is no laboratory equipped for determination of trace organic contaminants such as mycotoxins, pesticide residues, veterinary drug residues and persistent organic pollutants, and none of the laboratories can perform quality control of pesticides and veterinary drugs.

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<sup>1</sup> Report of DG SANCO of a mission carried out in Eritrea from 7 to 11 April 2003 for the assessment of the conditions of production of fishery products intended for export to the European Union (DG(SANCO)/9154/2003 – MR final).

## APPENDIX 2

### Overall project management and description of the project partners

#### 1. Overall project management

Strengthening the food safety and food control system in Eritrea requires inter-ministerial cooperation and coordinated actions in an area where no or limited national expertise and experience is available. A Project Steering Committee (PSC) shall therefore be formed at national level consisting of representatives of the Ministries of Agriculture, Fisheries, Health, and Trade and Industry. The Project Steering Committee shall function as the supervisory body of the project on behalf of the Government, and its members shall be responsible for providing the necessary support for the timely implementation of the work plan.

The Government of Eritrea shall also nominate a National Project Coordinator (NPC) to facilitate and coordinate project implementation and ensure effective liaison and cooperation between the project partners and the consultants. The NPC - who should be able to dedicate a sufficient amount of time to the project - shall fall under the direct supervision of the Project Steering Committee and report to its chairperson.

The complexity of the subject matter justifies the appointment of an international expert consultant as Chief Technical Adviser (CTA) as well as a number of international expert consultants. They shall undertake short mission(s) to the country and prepare the required documents before and after those missions. Where appropriate, national consultants shall assist the international expert consultants in the collection of relevant information and shall make the necessary arrangements for the missions of the international consultants. The terms of reference of the CTA, the NPC and the national and international expert consultants are given in **Appendix 6**.

As part of its contribution to the project, the Government of Eritrea shall make available a sufficient amount of qualified national personnel to assist the project staff in carrying out their tasks where appropriate.

The overall project management, including financial and administrative management, shall be performed by FAO.

**2. Project and related information exchanges** will be performed at three levels:

1. Between CTA, NPC, and experts and project participants, and between the CTA, NPC and chairperson of PSC:  
Mostly by Internet services for day-to-day information exchange regarding project activities, decisions, scientific information, reporting, financial transactions, meetings, etc., supplemented by project meetings and workshops.
2. Between CTA and FAO Technical Officer  
Mostly regarding technical matters, selection of consultants and problems encountered and progress made on implementation of the project.
3. Between STDF and FAO:  
Mostly regarding administrative and financial management matters and technical reports.

### **3. Description of the project partners**

In Eritrea the following authorities are responsible for food safety and food control in various aspects:

1. Ministry of Agriculture (MoA);
2. Ministry of Health (MoH);
3. Ministry of Fishery (MoF);
4. Ministry of Trade and Industry (MoTI) / Eritrean Standards Institution (ESI)

There is no mechanism that harmonizes the activities of these authorities.

It is to be noted that the existing legislation affecting food safety and food control is generally outdated and needs to be amended and/or replaced. Nevertheless, some initiatives have recently been launched, which will also be briefly discussed below.

#### **3.1. Ministry of Agriculture**

The Regulatory Services Department (RSD) of MoA acts on food safety issues through two divisions.

##### **(a) Animal Health Division**

The Animal Health Division undertakes quarantine activities on animals and food products of animal origin at some major points of entry (Asmara International Airport and the seaports of Massawa and Assab). Inspectors are also assigned to animal products processing plants to inspect the quality and safety of processed animal food products.

Food inspection in Eritrea (meat/milk and products and by-products of animal origin) is not starting from scratch and goes back to the 1960s, when Eritrea used to export animals, products and by-products of animal origin to the nearby Arab countries, Europe and the Far East.

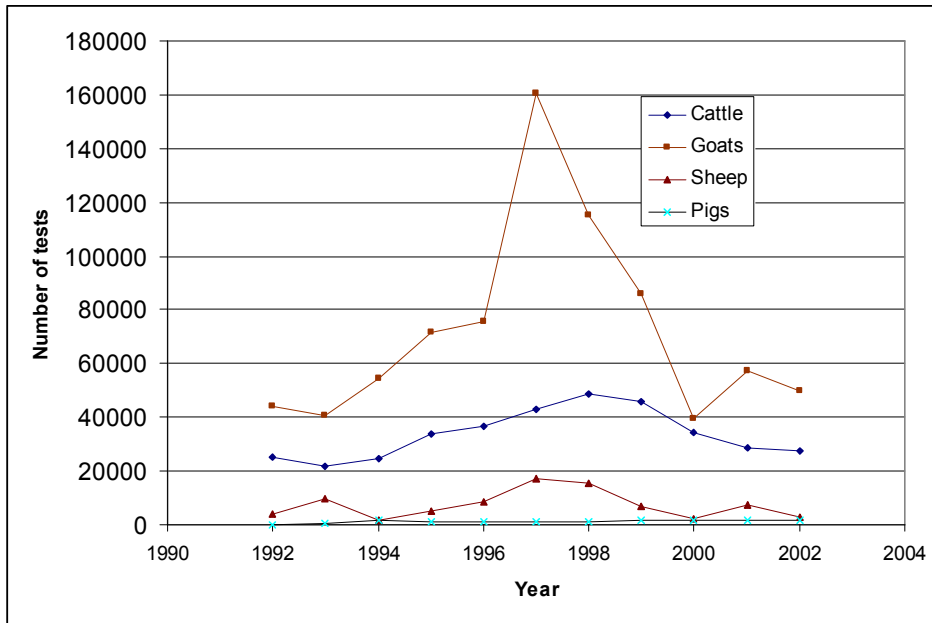
The number of pre and post mortem veterinary inspections carried out for public health control purposes are shown in Figure 1.

Presently there are four milk- and three meat-processing plants, 13 municipal slaughterhouses and five tanneries in which there are permanent inspectorates designated by the MoA. The inspectors are veterinarians, animal health assistants or animal health technicians with special meat/milk inspection training.

The organoleptic inspections are conducted daily throughout the year. The 18 inspectors have full authorization to take samples. Representative samples are taken from dairy products such as different types of cheese, butter, cream etc., and from meat products. The samples are sent to the Central Laboratory of MoA for chemical and bacteriological tests. The activities of the Central Laboratory are summarized in section 2.3 below.



Figure 1. The number of pre and post mortem veterinary inspections carried out for public health control purposes.



With respect to the regulatory framework, A Legal Notice on “*Requirements and Standards for Milk and Milk Products Processing Plants*” has been prepared by MoA and is expected to be proclaimed soon. Moreover, a draft Legal Notice on “*Animal Quarantine*” is also being prepared by MoA. The legal notices are issued in the lack of formal laws and regulations to provide instructions for actions by parties concerned.

Efforts are also being made to regulate the importation, registration, sale and use of animal drugs and vaccines. A draft regulatory framework on animal drugs and vaccines is currently being prepared and a draft National List of Drugs and Biologicals (vaccines) has been prepared and will be finalized soon by the MoA,

There are some animal feed processing plants in the country for poultry and dairy farms. Samples are taken frequently from these plants to check for safety and quality. Feed is imported into Eritrea based on the following requirements:

- Feed to be imported must be free from components of animal origin.
- Feed to be imported must be free from diseases and accompanied by an official health certificate from a competent national authority of the exporting country or country of origin.
- The importing company shall notify the Department of Regulatory Services upon arrival of the feed consignment.

It should be pointed out that at present there is no any regulatory framework to regulate animal feed. The above stated instructions are simply issued as guidelines for the public to follow. The Animal Feed Unit of the Animal Health Division under the Regulatory Services Department of the MoA is responsible for the above stated activities.

#### **(b) Plant Health Division**

The Plant Health Division has four Units: 1) Plant Health Control Unit; 2) Agrochemical Unit; 3) Seed Unit; and 4) Diagnostic and Epidemic Unit. Two of them are relevant as far as food safety is concerned.

##### Plant Health Control Unit

The Plant Health Control Unit undertakes surveillance on plant diseases and insects and creates a national database of these pests. Efforts are also being made to identify quarantine pests for major crop commodities, vis-à-vis Eritrea's trading partners. The Unit also develops regulatory frameworks for undertaking plant health activities, including quarantine activities.

Plant quarantine services are undertaken in some major entry points (Asmara International Airport and the seaports of Massawa and Assab) for imported and exported plant materials. The main objective of the plant quarantine control is to prevent the introduction and spread of exotic pests into the country and promote international trade of plants and plant products. A Plant Quarantine Proclamation has been prepared by MoA and submitted to the Ministry of Justice for its consideration.

Eritrea is a member of the International Plant Protection Convention (IPPC) and of the Inter-African Phytosanitary Council (IAPSC) since 2001.

A plant quarantine laboratory has been established, within the frame of an FAO Technical Cooperation project, which can perform insect diagnosis only. The plants and plant products are inspected visually in most cases, and the control relies on checking the accompanying plant health certificates and shipping documents. The laboratory is in its initial stage and requires additional equipment and skilled manpower for properly fulfilling its functions.

The pest forecasting system currently in use is based on surveillance applying pheromone traps for armyworm and ground survey for desert locust and *quela quela* birds.

The experts of the Plant Health Control Unit are concerned about the quality of pesticides and the efficiency of information transfer to the farmers.

Effective plant protection is an essential component of food safety and should be carried out in accordance with GAP to assure the safety of food and feed. The lack of diagnostic capability, an efficient advisory extension service, a sufficient amount and kind of pesticides and equipment do not allow for effective plant protection resulting in an estimated loss of production of 30 to 50% due to pests and diseases, and in some rare cases reaches up to 100%.

Other potential dangers include misuse of pesticides and harmful amounts of pesticide residues in some cash crops.

#### Agrochemical Unit

The Agro-chemical Unit develops regulatory frameworks for Agro-chemicals in general, although during this time the focus is on pesticides.

In order to improve the situation and regulate the importation of pesticides a Legal Notice on *Regulations for Importation, Handling, Use, Storage and Disposal of Pesticides* has been prepared by MoA and submitted to the Ministry of Justice for its consideration. Moreover, a *draft Pesticide Law* has been prepared at some time in the past by an FAO expert but it must be updated and expanded before its submission for approval by the Government of Eritrea.

There is a National Pesticide List. The importation of non-listed pesticides is not allowed except for research purposes. The importation of pesticides is authorised based on individual requests. In the Legal Notice, there is a provision which empowers the Minister of Agriculture to make new additions or deletions to the list in consultation with concerned institutions as and when needed. There is no any time frame for updating.

The Unit has started issuing permits authorizing the importation of pesticides, pesticide manufacturers, dealers, commercial applicators and premises to store pesticide for sale.

The unregulated importation of pesticides has been of concern to the MoA. A preliminary survey made in collaboration with the FAO in 2004 has indicated the presence of more than 1000 tons of obsolete pesticides in the country. Efforts are also being made to undertake proper inventory, storage, packaging and finally

disposal of obsolete pesticides, subject to the appropriation of funds. In this respect technical and financial assistance is being sought from FAO under a TCP program.

The Agro-chemical Unit is supposed to set standards for spraying pesticides and issue license to pest control operators. This task is not carried out presently due to capacity limitations.

### 3.2. Ministry of Fisheries

The MoF, through its Regulatory Services Department, is responsible for the safety and quality of fish and fishery products. Under this department, the Fish Inspection & Quality Control Division (FIQCD) is the competent authority established by *Fishery Product Proclamation (Proc. No. 105/98) and its amendment (Legal Notice No 71/2003)*. In addition to inspections, the FIQCD conducts post harvest research, establishes standards and gives training to fish handlers, processors, transporters etc.

The government of Eritrea has given a great emphasis to the fisheries sector to promote food safety and to comply with the EU requirements as specified by the FVO mission conducted in 2003. A 3.5 million worth fish landing centre with fleck ice production machine and intermediate cold storage facilities has been established in Massawa. Jetties, fish processing establishments and landing centres have been built at a cost of about 20 million USD along the coastline between Massawa and Assab (Idei, Tio and Gelalo). Eight new industrial vessels have been purchased to enhance fishing activities to its level best.

The Quality Control Laboratory of the MoF carries out the majority of the laboratory tests to assure the safety and quality of fish and fishery products.

In order to maintain the safety and quality of fish and fishery products and to promote their export, the Government of Eritrea has taken a number of legal initiatives, which include the following:

- (i) ***Fishery Product Proclamation*** (Proc. No. 105/98) and its amendment (Legal Notice No. 71/2003), which sets out the general principles and procedures for:
  - placing fish and fishery products on the market,
  - controlling the quality of fish and fishery products, and
  - establishments dealing with fish and fishery products.

Based on this Proclamation the following regulations were published. The FIQCD is empowered to enforce these regulations.

- (ii) ***Fishery Product Regulation*** (Legal Notice No. 40/1998) covers the general conditions to be applied during the handling of fishery products on board of fishing vessels and in fish processing plants. It also describes the health control, monitoring and quality assurance programs to be implemented for the proper handling and processing of the products..
- (iii) ***Fishery Product HACCP Regulation*** (Legal Notice No. 41/1998) describes the principles for the implementation of the HACCP in seafood establishments (**both vessels and processing plants**).
- (iv) ***Potable Water Regulation*** (Legal Notice No. 42/1998) ensures that the quality of water used during the processing of fish does not affect the wholesomeness of fishery products.
- (v) ***Aquaculture Products Regulation*** (Legal Notice No. 64/2003) lays down measures to monitor substances and groups of residues like antibiotics and other drugs, which are used in aquaculture, to ensure the safety of aquaculture products for human consumption.
- (vi) ***Additives Regulation*** (Legal Notice No. 65/2003) lays down measures to monitor the conditions for the use of food additives in fishery products.
- (vii) ***Heavy Metals Regulation*** (Legal Notice No. 66/2003) lays down measures for the monitoring of heavy metals in fish and aquaculture products.

(viii) *The Factory Vessel Regulation* (Legal Notice No. 67/2003) lays down hygienic conditions applicable to fishery products caught and processed on board factory vessels.

(ix) *Potable Water Regulation in Fishery Product Activities* (Legal Notice No. 68/2003) concerns standards of potable water to be observed in fishery product activities in order to protect human health.

(x) *Fishery Product Importation and Exportation Regulation* (Legal Notice No. 69/2003) lays down measures to monitor import and export conditions for fishery and aquaculture products.

### 3.3. Ministry of Health

Under the MoH two departments are responsible for food safety related activities:

#### (a) Regulatory Services Department

The Port Health and Quarantine Unit under the Monitoring and Evaluation Division of the Regulatory Services Department of the MoH undertakes inspections of foodstuffs – including beverage items - at Asmara International Airport and the seaports of Massawa and Assab. The field inspectors of the Unit also control foodstuffs on sale for the end consumer on adulteration and proper labelling. Samples are analyzed in the National Public Health Laboratory (see section 2.3 below) of the MoH in Asmara.

The duties and responsibilities of Quarantine Officers (Q.Os) in terms of foodstuffs and other related matters are to safeguard public health by inspecting all imported foodstuffs and health related articles organoleptically to ensure that they comply with the requirements as stipulated in the National Quarantine Policy and Guidelines (see below) and relevant regulations. More specifically their duties and responsibilities include:

- checking proper labelling and certificates of mixtures and of compounded foodstuffs to ensure the permitted proportion or absence of preservatives and colouring matters according to standards of composition and purity as provided by policy or legislation;
- preventing the sale of adulterated or falsely labelled foodstuffs;
- taking samples from any foodstuffs and other related articles for chemical and bacteriological tests, and checking labelling if abnormalities are observed; the samples are sent to the National Public Health Laboratory of the MOH in Asmara.

The 20 QOs are sanitarians, environmental health technicians and public health technicians with a diploma or degree.

All foodstuffs crossing the Eritrean borders by air, sea or frontier must be inspected and - if found damaged or unfit for human consumption - confiscated or destroyed. A certificate will be issued to the owner or agent by the QO describing any actions taken.

The QO is empowered by the MoH to enter any premises or any vehicles where food for import/sale is manufactured or kept and to inspect or search and examine or open any receptacle or package found therein and to take sample for further analysis. He may seize or remove any foodstuff, which appears to be adulterated or falsely labelled.

The inspections are performed according to the National Quarantine Policy and Guidelines of the MoH, which provide guidance for the control of all food by the Port Health and Quarantine Unit of the MoH at entry points. The compliance of food is decided based on the Codex Alimentarius and Eritrean Standards Institution food standards. The quantity of foodstuffs inspected are summarised in Table 1.

Table 1. Foodstuffs inspected during 1996-2005

#### Foodstuffs imported inspected and permitted (in tons and litres)

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Food/ton	41101 3	132838 20	45660 7	13328 30	14731 30	40742 4	33121 79	21555 21	34113 1	40954 6
Food/lit	4x10 <sup>6</sup>	5x10 <sup>6</sup>	2.6x1 0 <sup>6</sup>	1.8x1 0 <sup>6</sup>	7x10 <sup>6</sup>	2.3x1 0 <sup>6</sup>	1.5x1 0 <sup>6</sup>	1.7x1 0 <sup>6</sup>	7.8x1 0 <sup>6</sup>	1.6x1 0 <sup>6</sup>

Foodstuffs found damaged or unfit for human consumption and destroyed (in tons), and foodstuffs exported (in tons)

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Damaged	2054	244	4718	10719	231	13116	938	6838	884	272
Exported	924	-	-	26502	6005	-	-	-	-	-

The basic training for the inspectors and QOs is given by the College of Nursing and Health Technology. Refreshing training on public health and environmental health topics is provided by the Port Health and Quarantine Unit of the MoH.

#### **(b) Department of Health Services**

Two units, namely the Environmental Health Unit and the Nutrition Unit under the Family Community Health Division of the Department of Health Services undertake activities related to food safety.

##### Environmental Health Unit

The Environmental Health Unit inspects whether food manufacturing, handling or retail premises are functioning in accordance with GHP, GMP and HACCP. They have prepared checklists that assist in verifying if the principles of GHP, GMP and HACCP are respected. The Unit has environmental health officers placed in all six regions (or "Zobas") of the country.

The Environmental Health Policy and Guidelines of the MoH provide the necessary guidance to the inspectors of the Environmental Health Unit to regularly control environmental health issues such as the disposal of excreta, sewage and community wastes; water supplies; milk and other food supplies; arthropod, rodent, and mollusc control to reduce the transfer of human diseases.

##### Nutrition Unit

The Nutrition Unit, among other things, inspects the nutritional quality of food and provides advice on the standards to be followed.

#### **3.4. Ministry of Trade and Industry**

The MoTI, in collaboration with concerned institutions, promotes internal and external trade in accordance with national rules and regulations. For example, the MoTI, through its Department of External Trade, is making efforts to ensure Eritrea's participation in international and regional trade. The Department of Industry closely monitors through ESI the effectiveness and operational conditions of food processing plants.

##### Eritrean Standard Institution

The ESI was established by Proclamation No. 75/1995 and Legal Notice No.34/1997. Under the MoTI, the Institution establishes standards regarding physical, chemical and microbiological requirements of food and agricultural products. It controls the implementation of these standards through its QA department and testing laboratories. As these standards set the maximum level of additives, heavy metals and poisonous chemicals, microbial load, as well as labelling requirements, they play an important role in controlling food safety. The ESI has offices in the two seaport cities and in the capital, Asmara. Its inspectors take samples from imported and exported foodstuff and test whether the samples comply with the standards. Based on the

test results, the ESI issues a certificate of conformity or a certificate of analysis and issues an import/export permit or denies such a permit.

For domestically produced food, the ESI conducts a quality assessment of the manufacturers according to Eritrean Standards, and issues standard marks to those that comply with the standards; Periodically, it also conducts surveillance tests to check whether the manufacturers are meeting the required standards.

The ESI has made considerable efforts to set national standards of some food commodities and agricultural products and disclosed them to the public through Legal Notices. The standards related to food commodities and agricultural products that have been developed to date are the following:

Table 2. Eritrean standards related to food safety

<b>Eritrean Standards</b>	<b>Legal Notice</b>	<b>Volume</b>
Salt	No. 33/1997	3
Pulses	No. 33/1997	5
Oil Seeds	No. 33/1997	6
Edible Vegetable Oil	No. 47/2000	13
Fresh Fruits and Vegetables	No. 47/2000	14
Processed Fruits and Vegetables	No. 47/2000	15
Beer	No. 47/2000	16
Ethanol	No. 47/2000	17
Cereals	No. 96/2004	32
Cereal Products	No. 96/2004	33
Milk and Milk Products	No. 96/2004	35
Tea	No. 96/2004	36

The physical, chemical and microbiological specifications are set out in these Eritrean Standards. The microbial load and the maximum permissible limits for chemical contaminants (pesticide residues, mycotoxins, heavy metals etc.) are either specified in the Standards or reference is made to other regulations introduced by competent authorities.

## APPENDIX 3

### Detailed work plan, dissemination plan and evaluation plan

#### **1. Main components of the work plan**

The work plan is organized into four main components:

1. Elaboration of an institutional and legal framework for food safety and food control and preparation of a national food safety strategy and policy including a corresponding action plan.
2. Establishment of quality assurance and quality control systems in the food testing laboratories.
3. Organisation of training workshops.
4. Upgrading laboratory facilities and electronic communication.

**The first component** includes the elaboration of an institutional and legal framework for food safety and food control by:

- Elaboration of a national food safety strategy and policy including a corresponding action plan and preparation and adoption of a basic food law including a set of implementing regulations (**Specific objective 1**)
- Establishment of a central national body (hereafter: the Food Safety Authority or FSA, although this body may actually take different forms or have a different name) for coordinating food safety issues in the country, including a Governing Board supervising the activities of that body (**Specific objective 2**).

**The second component** includes the establishment of quality assurance and quality control systems in the food testing laboratories (**Specific objective 3**) by:

- Provision of assistance to the laboratories to introduce and implement appropriate quality assurance and quality control systems that satisfy ISO 17025 requirements;
- Organization of inter-laboratory comparison tests to assess the comparability of the results obtained by the laboratories, including analysis of microbiological and heavy metal contamination of food;
- Participation in international proficiency tests;
- Assistance to the Quality Control Laboratory of the MoF in obtaining ISO 17025 accreditation;

**The third component** includes various training programmes and preparation of training materials for staff of the new national food safety body, food testing laboratories, food manufacturers and food inspectors on various aspects of food safety (**Specific objective 4 and 5**) by:

- Organisation of training workshops on:
  - QA/QC in food control laboratories;
  - Principles and practice of internal and external audits;
  - Personal hygiene in food processing plants and principles of HACCP;
  - Food safety assessment;
  - Effective information transfer by extension service personnel;
  - Principles and consequences of new food legislation and role of various institutions.

The draft outlines of the workshops are given in **Appendix 7** and will be finalized by the Chief Technical Adviser, CTA) and the National Project Coordinator (NPC) in cooperation with the selected consultants.

- Preparation of training materials for the future trainers selected from the staff of competent authorities to assist uniform dissemination of the information obtained during the training workshop on effective information transfer by extension service personnel, and other workshops.

**The fourth component** aims to upgrade the electronic communication facilities of the participating institutes, which are of vital importance for the project to be timely implemented and successful. It also

aims to upgrade the heavy metal testing equipment of the ESI and provide some small equipment and reference materials for the laboratories to assure traceability of measurements to international standards (**Specific objective 6**)

## **2. General organization and management**

The tasks and actions to be carried out by the Chief Technical Adviser (CTA), the national project coordinator (NPC) and the national and international expert consultants are listed in their tentative terms of reference (**Appendix 6**). Tentative programmes for the workshops are described in **Appendix 7**.

### **2.1 Formation of the Project Steering Committee**

The Minister of Agriculture appoints the members of the Project Steering Committee in agreement with the Ministers of Fisheries, Health, and Trade and Industry. The chairperson of the Project Steering Committee will be the main contact point for the project.

### **2.2 Selection of the International Team Leader and the National Project Director**

Based on the recommendation of the FAO/WTO Secretariat and in agreement with the Government, the CTA is identified and recruited. Based on the recommendation of the chairperson of the Project Steering Committee, FAO/WTO Secretariat selects the National Project Coordinator in agreement with the CTA.

### **2.3 Selection of international expert consultants**

In agreement with the Government and the CTA, the international consultants are identified and recruited by the FAO/WTO Secretariat.

### **2.4 Selection of National Consultants**

Based on a list of recommended persons provided by the chairperson of the Project Steering Committee and in agreement with the CTA, the national consultants are identified and recruited by the FAO/WTO Secretariat.

### **2.5 Project evaluation**

The progress of the project will be evaluated by the Project Evaluation Team (PET), consisting of the members of the Project Steering Committee, the CTA and the NPC. The PET will have meetings at least once every six months at the time when the CTA is in the country. The meetings will be chaired by the chairperson of the Project Steering Committee.

Progress reports and a terminal report will be prepared as described in section 5.

### **Milestone**

The Project Steering Committee is formed, and the CTA and the NPC are selected, in **month 1**.



### **3. Implementation of the specific objectives**

<b>Specific objective 1: Preparation and enactment of the basic food law including a set of implementing regulations</b>					
<b>Activities / Partners</b>	<b>MoA</b>	<b>MoF</b>	<b>MoH</b>	<b>MoTI</b>	<b>MoJ</b>
A1.1 Elaboration of national food safety policy and strategy including a corresponding action plan	X	X	X	X	X
A1.2: Preparation of the basic food law and implementing regulations including the organization of workshops with all relevant stakeholders to obtain their comments.	X	X	X	X	X
A1.3: Submission of the draft law to the Ministry of Justice for comments	X	X	X	X	X
A1.4: Incorporation of all comments in the draft law and the regulations, where appropriate. Submission of the draft law to the Government for approval after translation to local languages	X	X	X		
A1.5: Approval and proclamation of the basic food law by the Government.	X	X	X	X	X
1.6: Adoption and declaration of set of implementing regulations.	X	X	X	X	X
A1.7: Organization of a workshop to introduce the basic food law and the implementing regulations.	X	X	X		X
<b>Person-month per participant*</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>9</b>

\* The total working month of qualified personnel that would be involved in providing the necessary information, consultation commenting on various drafts and taking part in interim meeting and workshops.

#### **Objectives**

- To elaborate the national food safety strategy and policy and the corresponding action plan.
- To create the legal framework for food safety and food control.
- To provide a legal basis for financial resources to maintain the food safety and food control system (e.g. establishment of a Food Safety Fund).
- To involve all stakeholders in the preparation of the national strategy and policy and corresponding action plan and in the preparation of food safety legislation, and to include their comments and opinions, where appropriate.
- To introduce the new food safety legislation to all stakeholders in order to facilitate its implementation.

#### **Description of work**

**A1.1** The national food safety policy and strategy and the corresponding action plan will be prepared by the CTA during a workshop on his/her first mission in cooperation with responsible staff of the Ministers of Agriculture, Fisheries, Health, and Trade and Industry and other relevant stakeholders. The principles agreed upon will be incorporated in the food legislation to be developed subsequently.

**A1.2** The draft basic food law and a set of implementing regulations will be prepared by an international legal expert consultant in cooperation with the national legal consultant and the allocated technical and legal specialists of the Ministries concerned.

The international consultant will have three separate missions.

The national legal consultant will collect all the relevant documentation prior to the first mission, make a first review and analysis, and provide the material to the international consultant prior to the first mission.

Prior to the first mission the consultant will review the provided information and the analysis made by the national consultant. During the first mission (14 days) the consultants will perform the necessary coordinative discussions required for performing the tasks specified in the TOR and hold a 1-day workshop for seeking comments and opinions of all relevant stakeholders including, government, industry, NGOs, consumer associations etc. Subsequently, the international consultant will prepare a first draft of the basic law and the regulations.

During the second mission (12 days) the proposed law and the regulations will be discussed during a 2-day workshop with all aforementioned relevant stakeholders with the aim of obtaining their comments and reaching consensus on the content. The proposed legislation will then be discussed and finalized with the national experts of the Ministries of Justice, Agriculture, Fisheries, Health, and Trade and Industry.

The remaining activities shall be performed outside the duty station keeping contact with national counterparts by e-mail correspondence.

The information materials - prepared in electronic format with MS Office programmes on CD - shall be given to the workshop participants at least 2 days before the workshop to allow sufficient time for studying them. A copy of the materials and the full text of the draft food law and regulations shall also be sent to the CTA.

- A1.3** The Ministry of Justice will review the draft law (and the regulation(s)) and check them for consistency with the Constitution and other laws and regulations.
- A1.4** The Ministers of Agriculture, Fisheries, Health, and Trade and Industry will jointly submit the draft law to the Government for approval and adoption.
- A1.5** The Government will approve and proclaim the basic food law.
- A1.6** The regulations will be declared by the Minister(s) who will be responsible for the administration of the new food law.
- A1.7** A 1-day workshop will be organised during the third mission of the international consultant (**12 days!**) to introduce the new law and related regulations to all relevant stakeholders, and explain the actions to be taken in accordance with them.

### **Milestones**

The national and international consultants are selected and recruited **by month 3.**

The national food safety strategy and policy and corresponding action plan are prepared **by month 4**

The draft food law and a set of implementing regulations are prepared **by month 8.**

The final version of the draft food law is submitted to the Government **by month 12.**

The food law is approved and proclaimed **by month 19.**

The implementing regulations pursuant to the law are adopted **by month 21.**

### **Deliverables:**

- A national food safety strategy and policy and corresponding action plan prepared.
- A basic food law enacted and a set of implementing regulations declared.
- Workshop information materials and reports reflecting the discussions

**Specific objective 2:  
Establishment of a Food Safety Authority for coordinating food safety issues in the country - including a Governing Board supervising its activities**

Activities / Partners	MoA*	MoF*	MoH*	ESI*	
A2.1: Appointment of a Director and skeleton staff of the FSA					
A2.2: Provision of offices for initial operation of the FSA					
A3.3: Training of the staff of the FSA					

\* The involvement of various government bodies will depend on the strategy, the action plan and the provisions of the basic food law establishing the FSA.

### Objectives

- To establish the FSA for coordination of food safety activities and performing other tasks specified in the basic food law and implementing regulations.
- To provide initial training for its staff to facilitate the implementation of the tasks specified in the legislation.

### Description of work

Formal establishment of the FSA will take place in the new food law. Based on the relevant provisions of the new law and the implementing regulations, the Minister(s) authorized to administer the food law will appoint, taking into account the recommendations of the Governing Board and the chairperson of the Project Steering Committee, a Director and key staff of the FSA and allocate sufficient office space and equipment for its initial operation.

Arrangements for the final allocation of office space, equipment and provision of other staff for the FSA's full operation are planned for the second phase of the implementation of the food safety programme.

The staff of the FSA will receive basic training during a 5-day workshop and will work together with the CTA to gain experience in performing food safety related tasks.

### Milestones

A Director and the skeleton staff of the new body are appointed, and sufficient office space and equipment are provided, by **month 20**.

The training workshop is organised by **month 22**

On the job training is started by **month 23**

### Deliverables:

- Appointed staff and allocated office space for the FSA
- Training materials used for the workshop
- Initial on-the-job training completed

**Specific objective 3:  
Establishing a quality assurance and quality control system in the testing laboratories**

Activities/Partners	MoA	MoF	MoH	ESI	FSA
<b>Consultant missions</b>					
3.1 QA/QC and methods for determination of chemical contaminants	X	X	X	X	
3.2 QA/QC and methods for determination of microbiological contaminants	X	X	X	X	
3.4 Preliminary audits of the laboratories	X	X	X	X	
3.5 Accreditation of the Quality Control Laboratory of the MoF		X			
National action					
3.3 Organization of inter-laboratory comparison tests	X	X	X	X	
<b>Person-month per participant:</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>1</b>	

**Objectives**

- Update of laboratory methodologies, internal quality control procedures and documentation
- Introduction of quality control and quality assurance principles in the laboratories to pave the way for compliance with the requirements of the ISO 17025 Standard.
- Verification of the status of the implementation of quality control and quality assurance in the laboratories during a preliminary audit performed by the international expert consultant.
- Accreditation of the Quality Control Laboratory of the MoF.
- Dissemination of experiences and information obtained during the accreditation to the other laboratories to assist them in the preparation for their accreditation.

**Description of work**

The international expert consultant will review the current methodology of the Quality Control Laboratory of the MoF and advise staff of the necessary improvements to be made in methodology, internal quality control measures and documentation for compliance with the provisions of the ISO 17025 Standard. Selected staff of other laboratories involved in food safety will take part in the review process to gain experience. The conclusions of the review and the general principles of QA/QC will be discussed during the workshop on QA/QC principles described under specific objective 4.

Inter-comparison tests will be organised through cooperation of the testing laboratories to check the comparability of their results of determination of microbiological contaminants in food.

The laboratory staff and the quality assurance officer(s) will prepare the necessary Standard Operation Procedures (SOPs) and complete the documentation based on the advice and recommendation of the international expert consultants.

The progress and preparedness of the laboratories will be verified by another international expert consultant on laboratory inspection in combination with a training workshop (A4.3).

The formal inspection and accreditation of the Quality Control Laboratory of the MoF will be carried out by an accredited organization which is recognised by the European Union and the International Laboratory Accreditation Council (ILAC).

### **Milestones**

#### QA/QC in food control laboratories

The national and international consultants are selected **by month 3**.

The chemicals and consumables are delivered **by month 6**.

Inter-comparison tests are carried out **by month 7**.

The documentation according to the ISO 17025 Standard is completed and corrective actions taken **by month 10**

#### Principles and practice of internal and external audits

The international expert consultant is selected **by month 9**.

The accreditation of the Quality Control Laboratory of MoF **is conducted by month 15**.

### **Deliverables**

- Updated methodologies in testing laboratories written in the form of SOPs.
- Documentation of laboratory procedures ready for accreditation
- Quality Control Laboratory of the MoF accredited

<b>Specific objectives 4 and 5: Provision of basic training</b>					
<b>Activities/Partners</b>	<b>MoA</b>	<b>MoF</b>	<b>MoH</b>	<b>ESI</b>	<b>FSA</b>
<b>Training workshops</b>					
4.1 QA/QC and testing methods in food control laboratories	X	X	X	X	
4.2 Workshop on principles and practice of internal and external audits	X	X	X	X	
4.3 Personal hygiene in food processing plants and basic principles of HACCP	X	X	X	X	X
4.4 Food safety assessment.	X	X	X	X	X
<b>Consultant missions</b>					
4.5 Personal hygiene in food processing plants and basic principles of HACCP.	X	X	X	X	X
4.6 Food safety assessment	X	X	X	X	X
<b>5. Preparation of training materials</b>					
<b>Person-month per participant:</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>1</b>

### Objectives

- Provision of basic training for allocated staff of the government departments and institutions concerned, and personnel of manufacturing plants responsible for control of food safety.
- To update the knowledge of extension service personnel on plant protection and provide them with appropriate training materials in order to facilitate the information transfer to growers on safe and efficient use of pesticides.
- Preparation of training materials for the trainers of future workshops to assist in the uniform dissemination of the information obtained during the training workshop on effective information transfer by the extension service personnel and other workshops?

### Description of work

Selected staff of the laboratories of MoA, MoF, MoH and MoTI will take part in the training workshops. The workshop on QA/QC and testing methods in food control laboratories will have two parts. During the first week the general principles of QA/QC and statistical evaluation of the results will be discussed in which all participants will take part. During the second week the participants will be divided according their specialization into two groups. They will learn about methods for the determination of microbiological contaminants in the first group, while the programme of the second group will include the test methods for chemical contaminants.

Selected inspectors and extension service personnel will receive training, including practical demonstration, on personal hygiene, principles of HACCP, and on effective information transfer. They will be the trainers of follow up training courses to be carried out.

Training materials will be prepared for assisting the uniform training to be carried out by the government officials who had been trained previously. The materials shall be suitable for upgrading the knowledge of the participants of the workshops.

Food inspectors, extension service personnel and representatives of manufacturing plants will receive on-the-job training during on site inspections, which will be complemented by a workshop.

The international consultant will provide on-the-job training for the staff of the FSA and introduce the general principles of food safety assessment during a workshop.

### **Milestones**

QA/QC and testing methods in food control laboratories

The local participants for the QA/QC workshops are nominated and selected **by month 7**.

The workshop(s) are organized and conducted **by month 8**.

The local participants for the workshop on internal audit are nominated and selected **by month 10**.

The workshop is organized and conducted **by month 11**.

Personal hygiene in food processing plants and basic principles of HACCP.

The international expert consultant is selected **by month 15**.

The local participants of the workshop are nominated and selected **by month 16**.

The workshop is organized and conducted **by month 17**.

Food safety assessment

The international expert is selected **by month 19**.

The local participants of the workshop are nominated and selected **by month 20**.

The workshop is organized and conducted **by month 21**.

### **Deliverables**

- Staff of testing laboratories trained on QA/QC
- Trained extension and inspection service personnel, and quality control staff of manufacturing plants
- Training materials for further training workshops prepared
- Staff of the FSA received preliminary training

## **Specific objective 6: Upgrading electronic communication and laboratory facilities**

### **Objectives**

Upgrading the electronic communication and data processing facilities of the participating institutes,  
Increasing the sensitivity of mercury and heavy metal testing equipment of the ESI  
Provision of certified weights and thermometers, and reference materials for assuring the traceability of measurements to international standards.

### **Description of work**

The Government will make four offices available to the NPC and the national and international consultants on the premises of the Regulatory Services Department of the MoA. The computers from each office will be connected to a hub, located at the office of the chairperson of the Project Steering Committee, which will be linked by microwave radio to the centre of an internet provider. The national experts will have access to the internet in the offices of the national and international consultants. The equipment for internet connection will be rented but the connection of the computers must be made and financed from the project budget.

A similar system should be provided for the Testing Laboratory of the ESI. No action is required for the Central Laboratory of the MoH, which has a good internet connection. The Quality Control Laboratory of the MoF is located in Massawa and can only be connected to the internet through telephone. This system cannot be improved at present because of the limited capacity of the telephone lines and lack of microwave radio transmission. To verify the transfer of information, e-mails sent will be confirmed by phone or fax by the NPC. Larger documents will be forwarded by the NPC on CD.

The testing laboratories shall collect the measurement results electronically. The files containing the results of measurements and other relevant information on the sampled commodities will be forwarded to the FSA for further evaluation. Each laboratory will be provided one computer for data processing purposes. The FSA shall be provided basic office equipment including six computers, a photocopier and a combined printer/fax machine. The hardware purchased for facilitation of data collection and electronic information exchange during the implementation of the project will be used by the staff of the FSA after termination of the project.

Some auxiliary equipment and parts for the available atomic absorption spectrophotometer (AAS) will be purchased together with the cylinders and initial stock of ultra pure gasses to increase the sensitivity of mercury and heavy metal detection.

Some certified reference materials, weights and thermometers are required for assuring traceability of results to international standards and will be provided by the project.

Chemicals and consumables shall be provided for the training workshops.

The specification for the field purchase orders will be prepared by the CTA.

### **Deliverables**

- Radio connected internet at the project office and the ESI
- Ten computers
- Four printers
- One combined printer/fax machine
- Pure acetylene for AAS?
- Two nitrogen generators
- Graphite rods
- Certified weights
- Certified thermometers
- One photocopier



- Two uninterrupted power supplies

## **Milestones**

Internet connection is made **by month 2**

Parts required are specified and procurement requests are prepared **by month 3**.

Procurement orders are placed **by month 4**.

Equipment and consumable material are delivered **by month 7**.

Parts are installed and test measurements are performed **by month 10**.

## **4. Dissemination plan**

The workshop training materials will be photocopied and distributed to the participants' co-workers too.

The actions on strengthening the food safety and food control system - including the performance of the laboratories - recommended by the international consultants and/or participants of the workshops will be recorded and evaluated by the CTA, the NPC and the national consultants and will then be distributed among all stakeholders and other interested parties.

The results of the inspections and laboratory tests will be evaluated by the participating institutes. The reports prepared will be distributed among the stakeholders and will be used by the competent authorities to initiate the necessary regulatory actions.

The extension service personnel will hold additional workshops at regional level and will provide information directly and through the trained personnel to the growers and general public.

The FSA will organise regularly seminars or open days to provide information to the interested persons.

## **5. Evaluation plan and reporting**

### **Achievement of project objectives and expected results**

The activities carried out under the work plan of the project will be evaluated every six months during the PET meeting. The CTA and the NPC will initiate corrective actions if substantial deviations from the work plan will be noticed.

Progress reports will be prepared by the NPC and CTA, and the project outputs will be compared to its objectives in every six month.

At the termination of the project the CTA will prepare a final project report in cooperation with the NPC.

### **Impact of approved changes**

Before any changes to the work plan of the project are approved by the chairperson of the Project Steering Committee, the impact (positive or negative) on the project outputs should be assessed by the CTA, NPC and provided to the chairperson for consideration.

### **Recommended actions**

Based on the results of discussions during the evaluation meetings and workshops, action plans will be prepared by the NPC and CTA, which after approval by the Project Steering Committee or the responsible government officials (for actions not directly related to the project) will be submitted to the appropriate government bodies for implementation.

### **Future priorities**

Any future priorities identified during the project will be recorded. Consideration will be given by the NPC, CTA and the Project Steering Committee as to if such future priorities can be achieved either within or after the project or if an additional funding programme would be necessary. Appropriate actions will be taken by the chairperson of the Project Steering Committee depending on the conclusions reached.

## APPENDIX 4

### Detailed budget

The estimated expenses are calculated based on the work programme. The summary of budget is presented according to the FAO TCP format. The detailed cost calculation of individual activities are given after the summary budget.

#### 5.1 Summary of budget according to the FAO TCP format

Accts	Input description	Sub Account
5013	<b>Consultants</b>	
5542	Consultants – international	89950
5543	Consultants – national	23800
5014	<b>Contracts</b>	
5650	Contracts budget <sup>1</sup>	76400
5021	<b>Travel</b>	
5661	Duty travel others	5590
5684	Consultants – international	39336
5685	Consultants – national <sup>2</sup>	2500
5023	<b>Training</b>	
5920	Training budget <sup>3</sup>	43640
5024	<b>Expendable equipment</b>	
6000	Expendable equipment budget <sup>4</sup>	13900
5025	<b>Non Expendable equipment</b>	
6100	Non Expendable equipment budget	41000
5028	<b>General operating expenses</b>	
6300	General operating expenses budget <sup>5</sup>	30000
5029	Support budget	
6118	Direct operating cost	
	Grand total	<b>366116</b>
	<b>Government contribution</b>	
	Salary of national experts <sup>6</sup>	8600
	Office and office equipment for international and national consultants <sup>7</sup>	19200
	Laboratories and lecture rooms for workshops <sup>8</sup>	8000
	Secretarial support <sup>9</sup>	2400
	Total Government contribution	<b>38200</b>

#### Comments:

1. Includes the estimated cost of accreditation, and renting and installation costs of computer connections and radio transmitter;
2. Includes honorarium of national project coordinator (NPC) and three national consultants. It is calculated based on the local rate of 100 US \$ per month.
3. Includes daily subsidy for participants and the costs of chemicals, photocopying demonstration and training materials;
4. Includes materials required for the installation of internet, as well as chemicals and consumables for laboratory demonstrations concerning new methods and QC procedures;

5. Includes telephone, telex, printing, photocopying etc. cost, the translation of legal documents to 3 official languages of the country and the preparation of reports. The translation is calculated based on an assumed 200 pages and 20 US \$ per page/language.
6. Excluding honorarium of national project coordinator (NPC) and national consultants. The salary is calculated based on senior officials monthly salary of 3000 Nakfa for 43 months. Details of predicted time for each activity is given in **Appendix 3**.
7. Four offices with furniture, telephone and fax facilities will be provide by the government for 24 months. The rate is calculated on current average market rate of 3000 Nakfa per month for furnished office rooms taking into account the office area.
8. Laboratories will be provided for the workshops and practical demonstrations. The expenses are calculated on the basis of laboratory space and the overhead charges applied by the Central Laboratory of Ministry of Agriculture of Egypt (2000 US \$/per week/lab) as local rates were not available.
9. Secretarial support will be provided for the international experts and NPC for the duration of the project.

## 5.2 Calculation of the expenses of international and national consultants

	No of travels	Duration (days)	DSA/day	International travel	Internal travel	DSA+ travel	Honorarium			Sub total
							per day	No. of days	Amount	
<b>Total</b>										
Project coordinator	6	64	96	9000	1576	15144	300	60	37200	53920
A1.2: Preparation of the basic food law and implementing regulations etc.	3	36	96	4500	1014	7956	250	45	20250	29220
A3.1: QA/QC in food control laboratories consultant in chemical contamination	1	24	96	1500	676	3804	250	12	9000	13480
A3.2: QA/QC in food control laboratories consultant in microbiological contamination	1	24	96	1500	676	3804	250	12	9000	13480
A3.4: Preliminary audit of the laboratory	1	12	96	1500	338	2652	250	5	4250	7240
A4.7 Personal hygiene in food processing plants and basic principles of HACCP.	1	12	96	1500	508	2652	250	5	4250	7410
A4.8 Food safety assessment	1	19	96	1500	436	3324	250	5	6000	9760
Sum					5424	39336			89950	<b>134510</b>
<b>National project director</b>		120			2500*		100			14500
<b>National consultants</b>										
A1.1: Preparation of Food Law		70					100			4800
A3.1: QA/QC in food control laboratories consultant in chemical contamination		24					100			2400
A3.1: QA/QC in food control laboratories consultant in microbiological contamination		24					100			2400
Sum										<b>26300</b>

Note: Internal travel cost will be used by the consultants as needed for collection of information and preparation for the missions of international consultants.

### 5.3 Workshops

Workshops	Participant	Day	USD/day	Incidentals/travel <sup>a</sup>	Sub total	Total
Testing methods and related QA/QC measures in food control laboratories (15 participants for 10 working days)	16	10	30	15000 <sup>b</sup>	19800	
Principles and practice of internal and external audits (15 participants for 5 working days)	16	3	30	2000	3440	
Food safety assessment	20	5	30	2000	5000	
Effective information transfer in food inspection, personal hygiene and basic principles of HACCP	20	5	30	3500	6500	
Food law and related regulations	20	2	30	2000	3200	
Introduction of the Food law and related regulations	20	1	30	2000	2600	
Presentation the outcomes of the project – law, FSA, accreditation etc.	40	1	30	2000	3200	<b>43640</b>

- (a) The amounts include the cost of chemicals and consumable materials required for the practical demonstrations and photocopying the training materials.  
 (b) The amount is split into two parts 5000 for microbiological tests and 10000 for chemical tests

### 5.4. Equipment and expendable materials

	Non expendable	Expendable
Equipment	<b>41000</b>	<b>13900</b>
Installation of internet (2 places)		7900
Computer 10 pcs	12000	
Gases (Acetylene)		3000
Nitrogen generator 2 pcs	16000	
Graphite roads		3000
Weights	1500	
Thermometers	1500	
Copier for FSA	7000	
Uninterrupted power supplies (2)	3000	

## APPENDIX 5

### Timetable

The milestones in the implementation of the individual activities are listed in Appendix 2. The combined work plan grouping the activities according to subject matters is given below:

Project duration (month)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>CTA selected, Steering Committee formed, NPD appointed</b>	x																							
Missions of CTA	x			x			x				x			x								x		
<b>A1: Preparation of Food Law and related regulations</b>																								
A1.1 Elaboration of national policy and strategy on food safety	x																							
Legal expert selected	x	x	x																					
1 <sup>st</sup> mission, preparation of text				x	x	x																		
Ministry of Justices comments on drafts							x	x	x															
2 <sup>nd</sup> mission of legal consultant & workshop											x													
Translation of the documents to 3 local languages													x											
Food Law approved by Gov. and declared																			X					
Implementing regulations pursuant to Food Law adopted																					X			
<b>A2 FSA and supervisory Board established</b>																								
<b>A3 QA/QC in food control laboratories</b>																					x			
Consultants selected	x	x	x																					
Chemicals consumables procured				x	x	x																		
Within country inter-laboratory comparison tests organized			x				x																	
Review of laboratory methods and workshop on QA/QC								x																
Corrective actions taken									x															
Completing the laboratory documentation																								

<b>Project duration (month)</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Participation in international proficiency tests																									
<b>Principles and practice of internal and external audits</b>																									
Consultant selected							x	x																	
Pre-inspection of laboratories, workshop									x																
Corrective actions taken											x	x	x	x											
Inspection/accreditation of the laboratory															X										
<b>A4 &amp; A5 Workshops</b>																									
<b>A4.5 Food safety assessment</b>																									
Consultants selected																		x	x						
Workshop materials prepared																				x					
Consultant's mission & workshop																					x				
<b>A6: Improvement of infrastructure</b>																									
Internet connection is made		x																							
Procurement requests are prepared and orders placed				x																					
Equipment and consumable material are delivered																									
Parts installed and test measurements are performed										x															
<b>Reporting</b>																									
Progress reports						x						x													
Terminal report																									
Terminal report cleared																									X



## APPENDIX 6

### Terms of reference

#### 6.1 Terms of reference

##### Chief Technical Adviser, CTA

In close coordination with the Technical Officer of FAO, FAO TO), the NPC and the national and international expert consultants, the CTA shall:

1. Keep close contact by e-mail with the NPC and the national and international expert consultants to coordinate and facilitate their activities.
2. Advise the NPC on required actions for the timely implementation of the project and preparation of action plan.
3. Assist the Project Steering Committee (PSC) on the preparation of national policy and strategy for food safety
4. Assist the preparatory work of the international expert consultants.
5. Prepare the specifications for the FPOs?.
6. Review the proposed training programmes and training materials to assure that all food safety aspects of the project will be sufficiently covered.
7. Comment on the reports of the national and international expert consultants.
8. Monitor the progress of the project, verify the implementation of the work plan and initiate actions where appropriate.
9. Attend the meetings of the PET and discuss the progress made in the project with the Steering Committee.
10. Provide on-the-job training for the staff of FSA and assist the conduct of workshops where time permits.
11. Prepare semi-annual progress reports and a Terminal Report describing the outputs and making recommendations for follow up actions during a second phase.

##### Work programme:

The CTA will tentatively undertake the following six missions;

1. Mission to initiate of the project (8 days): assisting the NPC in the selection of qualified national consultants for final selection by FAO/WTO; preparation of detailed action plan, and assist the PSC in preparing the national policy and strategy for food safety .
2. Mission (10 days) to monitor the progress made in the implementation of the project and advise on further actions, and to assist the legal expert in defining the major components of the food safety programme that should be included in the food law and related regulations. This mission will partly overlap the first mission of the legal expert consultant.
3. Mission to monitor the progress made by the testing laboratories (12 days). This mission will overlap with the first week of the training workshop on QA/QC.
4. Mission to monitor the progress made by the testing laboratories (12 days). This mission will overlap with the pre-audit of the laboratories carried out by??
5. Mission to assist in finalization of the text of the basic food law and the implementing Regulations and to monitor the progress of the laboratories in relation to their accreditation (12 days). This mission will partly overlap with the mission of the legal expert consultant,
6. Final mission to evaluate the project achievements and discuss of future actions with the project partners (12 days), and conducting a workshop to present the outcomes of the project – law, FSA, accreditation etc..

The remaining activities shall be performed outside the duty station (60 working days) keeping contact with FAO TO, international expert consultants, NPC and national counterparts by e-mail correspondence.

**Minimum qualifications:**

- PhD (or equivalent) in a food safety related subject
- Ten years experience in managing food safety related laboratory control programmes, managing international food safety projects and organization of international training workshops related to food safety
- Practical experience in implementing QA/QC measures in food testing laboratories
- Excellent command of English language

## 6.2 Terms of reference

### **Legal consultant for preparation of Food law and related regulations**

In close coordination with the Technical Officer of FAO, the Chief Technical Adviser, CTA, the National Project Coordinator, NPC, and national consultants and expert(s) the consultant shall be responsible for:

1. Review of the current laws, regulations and guidelines related to various food safety actions and provisions including relevant policies (e.g. policy for import of foods, plants and animals, policies for the effective registration, control, tracing and identification of substances prohibited by trading partners, etc.)
2. Preparation of work plan to facilitate effective cooperation with the national legal consultant.
3. Preparation of the draft Food Law taking into account the FAO/WHO (2003 or latest edition.) Guidelines for developing a national food law and the principles of the relevant current international practices with special attention to the requirements of the European Union. The draft law should be prepared taking into account the principles of the national food safety system attached as Annex 1 to Appendix 7.
4. Preparation of the draft Regulations related to the Food Law taking into account the relevant national laws, regulations and guidelines being in effect, and relevant international standards, agreements and conventions such as Codex standards, SPS Agreement, the Rotterdam Convention on Prior Informed Consent, Stockholm Convention on POPs etc.
5. Identification of the discrepancies and gaps in the current national framework of regulations and standards, and preparing a list of Laws and Regulations with recommended amendments in order to harmonize the legal frame of food safety related actions.
6. Submission of the first drafts of Food Law and related Regulations for consideration and comments by the competent authorities responsible for food safety related actions and other relevant Government organizations.
7. Incorporation of the relevant and appropriate comments received into the 2<sup>nd</sup> draft of the Food Law, and submission of the second draft for final comments.
8. Discussion of the 2<sup>nd</sup> draft of the law and regulations with representatives of competent authorities and other assigned government officials, and preparation of the final versions of the draft Food Law and Regulations.
9. Preparation of handouts for the 'Workshop on food law and regulations'.
10. Conducting two workshops to discuss the basic principles of the planned food safety legislation and on introduction of the new Food law and related regulations.
11. Preparation of the 'End of Assignment Report' specifying the key elements of the draft Food Law which require special attention from the Government and further actions for its implementation. The recommendation shall be included in the programme of the workshop on 'Food law and related regulations'.

#### **Work programme:**

The incumbent will have three separate missions. He/she will receive the relevant laws and regulations available prior to the first mission for review.

1. Mission (14 days): the consultants will perform the necessary coordinative discussions required for performing the tasks specified in the TOR, and hold a 1-day workshop for seeking the comments and opinion of all stakeholders including, government, industry, NGOs, consumer associations etc.
2. Mission (12 days): the draft law and regulations related to food safety will be discussed and finalized with the national experts and consultants, and a 2-days workshop will be held with all stakeholders with the aim of reaching consensus in their content.
3. Mission (12 days): the text of the laws and regulations will be finalised with the cooperation of the NPC, national experts of the Ministries of Justice, Agriculture, Fisheries, Health, and Trade and Industry and national consultants.

The remaining activities shall be performed outside the duty station (45 days) keeping contact with CTA, NPC and national counterparts by e-mail correspondence.

The training materials prepared with MS Office programmes in electronic form on CD shall be sent by the consultant to the CTA for comments, and then to NPC, minimum one week before the workshop for preparing sufficient number of copies for the workshop.

**Minimum qualification:**

- University diploma (MSc or equivalent) in law,
- Excellent command of English language;
- A minimum of 10 years experience in drafting laws and regulations including food safety and related activities.
- In depth knowledge in the relevant EU requirements and legal consequences of the application of ISO 22000 Standard, and the relevant international standards, agreements and conventions.

### 6.3 Terms of reference

#### **International consultant on personal hygiene and basic principles of HACCP in food processing plants and catering establishments**

In close coordination with the Chief Technical Adviser, CTA, the National Project Coordinator, NPC, and national consultants and expert(s) the consultant shall:

1. Review the national guidelines provided for food inspectors for performing official control of food processing plants and catering establishments, and prepare the appropriate revisions to bring the inspection and sampling procedures in line with the requirements of EU and Codex Alimentarius Commission.
2. Prepare written training materials with colour slides for trainers on:
  - a. Personal hygiene as the basis for food safety;
  - b. Effect of household and kitchen operations on contaminants in/on food;
  - c. Principles of HACCP in catering and food processing including products of plant and animal origin;
  - d. Conducting inspections, including sampling of various products;
  - e. Techniques for transferring the information to rural population on personal and environmental hygiene.
3. Carry out inspections together with the inspectors of the Regulatory Departments of Ministries of Agriculture, Fisheries, and Health, and Eritrean Standard Institute, and advise them on the spot on possible improvements.
4. Discuss the findings with the responsible officials of the competent government organizations.
5. Prepare the final programme and training materials for a 5-days workshop taking into account the draft outline of the workshop.
6. Conduct the training workshop.
7. Prepare the 'End of Assignment Report' including the detailed recommendations for improvement of the methodology and extension of the scope of tests, where necessary.

#### **Work programme:**

The incumbent will have one mission (12 days). Prior to the mission the incumbent will receive, for review, from the NPC the information on the current guidelines and scope of tests, and on food safety related public health problems, food deterioration and poisoning cases recorded in Eritrea. Based on the information received and general knowledge on typical cases, the training materials will be prepared (5 working days) making also use of international guidelines.

During the first part of the mission (5 days) the consultants will conduct joint inspections with the inspectors of competent authorities and discuss the findings. The findings and the recommended corrective actions will also be discussed at the workshop.

The training materials prepared with MS Office programmes in electronic form on CD will be sent by the consultant to the CTA for comments, and then to NPC, a minimum of one week before the workshop for preparing sufficient number of copies for the workshop.

#### **Minimum qualification:**

- University diploma (MSc or equivalent) in either of the following area: medicine, food hygiene, microbiology or food technology;
- Excellent command of English language;
- A minimum of 5 years experience in public health service;
- Experience in conducting training workshops for transferring information to the public.

## 6.4 Terms of reference

### **International consultant on methodology for determination of chemical contaminants in food**

In close coordination with the Chief Technical Adviser, CTA, the National Project Coordinator, NPC, and national consultant and expert(s) the consultant shall:

1. Review the methodology applied by the Eritrean laboratories for determining chemical contaminants in fish, fishery products, raw agricultural commodities of animal and plant origin and processed food.
2. Compile a set of simple, robust and reliable methods which can be applied for the determination of various chemical contaminants being on the priority list of EU including heavy metals, but excluding mycotoxins, biotoxins, pesticide residues and veterinary drug residues.
3. Check the reliability of measurements of chemical contaminants carried out by the laboratories, and advise them on necessary improvements.
4. Recommend and demonstrate appropriate quality control procedures which shall be included in the daily routine of the laboratories to demonstrate the accuracy and reproducibility of the procedures.
5. Advise the laboratories on necessary improvements and actions required for obtaining accreditation for the selected test methods.
6. Prepare the list of chemicals required for the introduction of new methods during and or after the workshop, and send it to CTA a minimum of 4 months before the workshop for preparing FPO(s).
7. In cooperation with the international consultant on microbiological contamination, prepare the detailed curriculum and training materials and handouts for a 10-days workshop on 'Testing methods and related QA/QC measures in food control laboratories', taking into account the general subjects indicated in the tentative programme..
8. Participate in conducting the training workshop.
9. Prepare the 'End of Assignment Report' including the detailed recommendations for improvement of methodology, extension of the scope of tests and QA/QC measures to be applied by the laboratories in their daily routine.

#### **Work programme:**

The incumbent will have one mission (24 days). Prior the first mission the incumbent will receive from the NPD for review the information on the current scope of tests, the equipment available and methods applied. Based on the information provided the incumbent will compile the set of recommended methods and QC procedures, and prepare the curriculum and training materials and handouts for the workshop.

During the first part of the mission (5 working days) the consultant will observe the performance of various tests and check the records of the laboratories. After the general QA/QC part of the workshop (5 working days) the incumbent will demonstrate (10 working days) the use of recommended methods and quality control checks in one laboratory considered most suitable for introduction of the new methods. One analyst from each food testing laboratory will take part in the demonstration.

The training materials prepared with MS Office programmes in electronic form on CD will be sent by the consultant to the CTA for comments, and then to NPC, a minimum of one week before the workshop for preparing sufficient number of copies for the workshop.

The other activities (e.g. compilation of methods, preparation for the training workshop and writing the report) shall be performed outside the duty station (12 working days) keeping contact with CTA, NPC and national counterparts by e-mail correspondence.

#### **Minimum qualification:**

- University diploma (MSc or equivalent) in chemistry;
- Excellent command of English language;
- Minimum of 3 years experience in determination of chemical contaminants in food in a laboratory accredited according to ISO 17025;
- Experience in conducting training workshops.

## 6.5 Terms of reference

### **International consultant on methodology for determination of microbiological contaminants in food**

In close coordination with the Chief Technical Adviser, CTA, the National Project Coordinator, NPC, and national consultants and expert(s) the consultant shall:

1. Review the methodology applied by the Eritrean laboratories for determining microbiological contaminants in fish, fishery products, raw agricultural commodities of animal and plant origin and processed food.
2. Compile a set of simple, robust and reliable methods which can be applied for the determination of various contaminants being on the priority list of EU.
3. Check the reliability of measurements carried out by the laboratories, and advise them on necessary improvements.
4. Recommend and demonstrate appropriate quality control procedures which shall be included in the daily routine of the laboratories to demonstrate the accuracy and reproducibility of the procedures.
5. Advise the laboratories on necessary improvements and actions required for obtaining accreditation for the selected test methods.
6. Prepare the list of chemicals required for the introduction of new methods during and or after the workshop, and send it to CTA a minimum of 3.5 months before the workshop for preparing FPO.
7. In cooperation with the international consultant on chemical contaminants, prepare the detailed curriculum and training materials and handouts for a 10-days workshop on 'Testing methods and related QA/QC measures in food control laboratories', taking into account the general subjects indicated in the tentative programme.
8. Participate in conducting the training workshop.
9. Prepare the 'End of Assignment Report' including the detailed recommendations for improvement of methodology, extension of the scope of tests and QA/QC measures to be applied by the laboratories in their daily routine.

#### **Work programme:**

The incumbent will have one mission (24 days). Prior the first mission the incumbent will receive from the NPD for review the information on the current scope of tests, the equipment available and methods applied. Based on the information provided the incumbent will compile the set of recommended methods and QC procedures, and prepare the curriculum and training materials and handouts for the workshop.

During the first part of the mission (5 working days) the consultant will observe the performance of various tests and check the records of the laboratories. After the general QA/QC part of the workshop (5 working days) the incumbent will demonstrate (10 working days) the use of recommended methods and quality control checks in one laboratory considered most suitable for introduction of the new methods. One staff member involved in testing microbiological contaminants from each food testing laboratory will take part in the demonstration.

The training materials prepared with MS Office programmes in electronic form on CD will be sent by the consultant to the CTA for comments, and then to NPC, a minimum of one week before the workshop for preparing sufficient number of copies for the workshop.

The other activities (e.g. compilation of methods, preparation for the training workshop and writing the report) shall be performed outside the duty station (12 working days) keeping contact with CTA, NPC and national counterparts by e-mail correspondence.

#### **Required minimum qualification:**

- University diploma (MSc or equivalent) in microbiology, biology or food hygiene
- Excellent command of English language,
- A minimum of 3 years experience in determination of microbiological contaminants in food in a laboratory accredited according to ISO 17025,
- Experience in conducting training workshops.

## 6.6 Terms of reference

### International consultant for food safety assessment

In close coordination with the Chief Technical Adviser, CTA, the National Project Coordinator and the allocated staff of the Food Safety Authority of Eritrea, FSA, the consultant shall:

1. Review of the provisions laid down in the Food Law and related Regulations;
2. Assist in the preparation of a long term action plan and the first annual work plan for FSA, taking also into account the provisions for the national food safety system attached as Annex 1 to the TOR;
3. Prepare a list of URLs of sites providing information on hazard characterization of food contaminants, and the results of food monitoring programmes indicating the frequency of occurrence and concentration level of food contaminants;
4. Perform model food safety assessment, as examples, based on the information that can be downloaded from the Internet and obtained from annual reports of various countries;
5. Assist in the preparation of coordinated inspection and sampling plans taking into account
  - (a) the available laboratory capacity;
  - (b) the information on the results of laboratory tests of locally produced food, and
  - (c) the potential contamination of food based on international data.
6. Prepare the final programme, training materials and handouts for the 4-day workshop on 'Food safety assessment' taking into account the draft outline of the workshop.
7. Conduct the workshop on 'Food safety assessment' taking into account the draft outline of the workshop.
8. Preparation of the 'End of Assignment Report' specifying the key elements of food safety assessment which require special attention and further actions by the FSA and the Government for implementation of food safety programme.

#### Work programme:

The incumbent will have one mission (19 days). The incumbent will receive from the NPC for review the relevant Laws and Regulations and results of inspections and laboratory tests available prior to the mission. During the mission the consultants will perform the necessary coordinative discussions with the staff of FSA and the representatives of competent authorities, and provide on-the-job training for the staff of FSA. In addition, conduct a 4-day workshop.

The training materials prepared with MS Office programmes in electronic form on CD shall be sent to the National Project Director, with copy to CTA, minimum 3 weeks before the workshop for preparing sufficient number of copies for the workshop.

The training materials prepared with MS Office programmes in electronic form on CD will be sent by the consultant to the CTA for comments, and then to NPC, a minimum of one week before the workshop for preparing sufficient number of copies for the workshop.

The other activities (e.g. compilation of information, preparation for the training workshop and writing the report) shall be performed outside the duty station (5 working days) keeping contact with CTA, NPC and national counterparts by e-mail correspondence.

#### Required minimum qualification:

- University diploma (MSc or equivalent) in either of the following subjects: microbiology, chemistry, agronomy;
- Excellent command of English language;
- A minimum of 3 years experience in hazard characterization and participating in food safety programmes.
- Experience in conducting training workshops.



## 6.7 Terms of reference

### **International consultant on internal and external audit of testing laboratories**

In close coordination with the Technical Officer of FAO, the Chief Technical Adviser, the National Project Coordinator, NPC and national consultant and expert the consultant shall:

1. Perform pre-audits of the Quality Control Laboratory of MoF, and Central Laboratory of MoA and advise them on the corrective actions necessary for full compliance with ISO 17025 Standard and obtaining accreditation.
2. Review the status of preparation for ISO 17025 of the laboratories of MoH and ESI and prepare an action plan for getting ready for accreditation.
3. Verify that the internal quality control checks are suitable for demonstrating the accuracy and reproducibility of the procedures.
4. Prepare the detailed programme and curriculum for a 3-days workshop on 'Principles and practice of internal and external audits' in analytical laboratories', taking into account the draft outline of the workshop.
5. Conduct the training workshop.
6. Prepare the 'End of Assignment Report' including the detailed recommendations for improvement of laboratory documentation and methodology to comply with ISO17025 requirements.

#### **Work programme:**

The incumbent will have one mission (12 days). Prior the first mission the incumbent will receive from the NPC for review the quality assurance quality control related documentation of the laboratories (e.g. Quality manual, SOPs, Templates and record formats)

During the first part of the mission (6 days) the consultants will audit the laboratories of MoF, MoA (2-2 days), MoH and ESI (1-1 day).

During the workshop (3 working days) the general principles of audit will be discussed together with the findings of laboratory audits and recommended actions for improvement. On the last day, the findings and recommended actions will be summarized with the management of the laboratories.

The training material, prepared with MS Office programmes in electronic form on CD, will be sent by the consultant to the CTA for comments, and then to NPC, a minimum of one week before the workshop for preparing sufficient number of copies for the workshop.

#### **Minimum qualification:**

- University diploma (MSc or equivalent) in chemistry or microbiology,
- Excellent command of English language,
- A minimum of 2 years experience in external audits of laboratories according to ISO 17025 standard within the frame of internationally recognised Accreditation Organization.

## 6.8 Terms of reference

### National Project Coordinator, NPC

In close coordination with the Technical Officer of FAO, the Chief technical Adviser, Chairperson of Steering Committee and national consultants and expert(s) the NPC shall:

1. Prepare the detailed action plan for the implementation of the project work-plan.
2. Coordinate the activities of national experts and assigned government officials.
3. Collect the specified information and forward it to international consultants prior their mission.
4. Collect the information required for the mission of the international consultant on laboratory audit and forward it to international consultant prior to the mission.
5. Arrange visits of the laboratories by the international expert on laboratory audit, and the evaluation meeting with the management of the laboratories.
6. Make the necessary preparatory work for the accreditation of the laboratory of Ministry of Fishery.
7. Make the necessary preparatory work for the missions of the consultants on personal hygiene and basic principles of HACCP, effective information transfer and food safety assessment and for the organization of the corresponding workshops.
8. Cooperate with the international consultants and assist their work before and during the mission specified under points 4-7.
9. Follow up the actions made by the national consultants concerning the necessary arrangements for the successful missions of international consultants on QA/QC and methods for determination chemical and microbiological contamination in food.
10. Monitor the progress in the implementation of the project, including the organization of inter-comparison tests and participation in international proficiency tests, and initiate appropriate actions as required.
11. Keep close contact by e-mail with the CTA and provide timely information on progress made and or difficulties experienced.
12. Comment on the reports of the consultants and national experts.
13. Discuss the progress made in the project with the chairperson of the Project Steering Committee and, in agreement with the CTA, recommend corrective actions, where required, for facilitation of the timely implementation of the project.
14. Provide the necessary information for the semi-annual progress reports and the 'Terminal Report' to be prepared by the CTA.

#### Work programme:

The successful implementation of the project requires substantial preparatory work, continuous monitoring of progress and making actions as required according to the project action plan.

The estimated time for performing the tasks is 120 working days.

#### Minimum qualification:

- University degree in a food safety related subject,
- Fluency in spoken and written English,
- A minimum of 10 years experience in a managing position in a government organization, knowledge in national laws and regulations.

## **6.9 Terms of reference**

### **National Legal Consultant**

In close coordination with the National Project Coordinator, Chairperson of Steering Committee and national consultants and expert(s) the consultant shall:

1. Collect the relevant laws, regulations, guidance documents etc. covering all areas related to food safety according to the broad concept of control from farm to fork. (The documents should include the fishery sector, soil management, selection of propagation materials, use of agrochemicals, veterinary drugs, personal hygiene, HACCP, food quality and safety standards etc.)
2. Make the first review and analysis of the documents and identify the discrepancies and overlapping, multiple actions. Provide the documents and the result of their evaluation to the NPC for forwarding them to the international legal consultant.
3. Check all actions taken as a response to the recommendations of FVO Mission in 2003. Identify the areas where the corrective legal actions were not taken.
4. Make the necessary preparatory arrangements, including appointments with representatives of competent authorities and organization of workshops, for the missions of the consultant.
5. Cooperate with the legal expert and assist her/his work during and between the missions.
6. Comment on the drafts of Food law and related regulations and assist in their finalization taking into account the requirements of the national legislation.
7. Check the correctness of the translation of the document to local languages

#### **Work programme:**

The relevant laws, regulations, etc. shall be collected and evaluated well before the 1<sup>st</sup> mission of the legal consultant to provide sufficient time for the preparation for the mission.

The other activities shall be carried out according to the work plan prepared jointly with the international legal consultant.

The estimated time for performing the tasks is 70 working days.

#### **Minimum qualification:**

- University degree in law,
- Fluency in spoken and written English and in a minimum of two local languages,
- A minimum of 10 years experience in drafting national legal documents

## **6.10 Terms of reference**

### **National consultant on testing chemical contaminants in food**

In close coordination with the National Project Coordinator, NPC, and national expert(s) the consultant shall:

1. Collect the information on the current scope of tests, the equipment and chemicals available and methods applied in the laboratories of Ministries of Agriculture, Fishery, Health and Eritrean Standards Institution.
2. Provide the documents to the NPC for forwarding them to the international consultant.
3. Make the necessary preparatory arrangements, including appointments with representatives of competent authorities and organization of the workshop, for the mission of the consultant.
4. Cooperate with the international consultant and assist her/his work before and during the mission.
5. Comment on the draft End of assignment report.

#### **Work programme:**

The relevant documents, information etc. shall be collected and evaluated well before the mission of the consultant to provide sufficient time for ordering the chemicals and the preparation for the mission. The other activities shall be carried out according to the work plan prepared jointly with the international consultant.

The estimated time for performing the tasks is 24 working days.

#### **Minimum qualification:**

- University degree in chemistry;
- Fluency in spoken and written English;
- A minimum of 5 years laboratory experience in testing chemical contamination in food.

## **6.11 Terms of reference**

### **National consultant on testing microbiological contaminants in food**

In close coordination with the National Project Coordinator, NPC, and national expert(s) the consultant shall:

6. Collect the information on the current scope of tests, the equipment and chemicals available and methods applied in the laboratories of Ministries of Agriculture, Fishery, Health and Eritrean Standards Institution.
7. Provide the documents to the NPC for forwarding them to the international consultant.
8. Make the necessary preparatory arrangements, including appointments with representatives of competent authorities and organization of the workshop, for the mission of the consultant.
9. Cooperate with the international consultant and assist her/his work before and during the mission.
10. Comment on the draft End of assignment report.

#### **Work programme:**

The relevant laws, regulations, etc. shall be collected and evaluated well before the mission of the consultant to provide sufficient time for ordering the chemicals and the preparation for the mission.

The other activities shall be carried out according to the work plan prepared jointly with the international consultant.

The estimated time for performing the tasks is 24 working days.

#### **Minimum qualification:**

- University degree in microbiology, biology or food hygiene;
- Fluency in spoken and written English;
- A minimum of 5 years laboratory experience in testing microbiological contamination in food.

## Appendix 7

### Tentative programme of the workshops

#### 7.1 Methodology and QA/QC in food control laboratories

**Duration:** 10 days

**Participants:** 16 with various university degrees

**Location:** Asmara and Massawa

**Tools:** projector will be provided by the local organizer, computers purchased from project funds will be available for practical exercises

**Laboratory facility:** For the 2<sup>nd</sup> part of the programme the microbiological test methods will be performed in the Quality control laboratory of MoF in Masswa. The chemical tests will be performed either in the Central Laboratory of MoA or in the Laboratory of ESI depending on the choice of the consultant.

#### Part I: General subjects

##### Day 1:

Opening of the workshop introduction of participants

##### *1. Introduction to and basic requirements of ISO/IEC 17025*

The Roles and Responsibilities of Top Management, Quality Manager, Technical Managers, and Laboratory Personnel;

Management Commitment and Management Reviews

Functional requirement and position in the organization

Hierarchy and lines of reporting to management by quality objectives

##### *2. Documentation of Laboratory Activity According to ISO/IEC 17025*

Purpose, Structure, Format, and Content of Quality Manual (QM)

Standard Operating Procedures (SOPs)

Handling reference materials, analytical standards, reagents

Templates and logbooks

Personal files: job description, CV and training records,

Archiving: security of documentation and records

##### *3. Milestones in Preparing Laboratory for Accreditation*

*Practice:* detect errors in pre-prepared SOPs

##### Day 2

##### *4. Basic statistics for evaluation of measurement results*

Errors in quantitative testing: gross, random and systematic

Accuracy, precision, repeatability and reproducibility

Characteristics of data population: mean, median and standard deviation

The normal or Gaussian distribution, other types of distributions

Confidence intervals, tolerance intervals

Significance tests: t-test, F-test,  $\chi^2$  test, outliers tests

Handling systematic errors in testing laboratories  
Propagation of errors

*Practice:* apply statistical methods for worked examples

### **Day 3**

5. *Uncertainty:* definition, sources and components

Estimation of uncertainty: „Top-down“ and „Bottom-up“ approaches:  
Practical Consequences of Variability of the Results - Compliance with Regulatory Limits

6. *Definition and Explanation of Traceability*

Traceability of the Results and QA system  
International System of Quantities and Units (SI)  
Traceability of Measuring Standards  
Certified Reference Materials (CRM) and Reference Materials (RM):  
Terminology, Types, Production and Uses

7. *Proficiency testing schemes:*

inter-comparison and collaborative studies data processing in proficiency testing

*Practice:* work out options for preparing standard solutions economically and with acceptable uncertainty

### **Day 4**

Application of control charts for mean values, individual values, and ranges  
Sampling: inevitable variability due to sampling, sampling strategies for various types of analysis

*Consultation*

*Practice:* construct control chart from different data sets

### **Day 5**

Internationally recognized method validation practices  
Performance characteristics of the method: applicability, specificity, selectivity, linearity, accuracy, trueness, bias, precision, calibration range, LOD, LOQ, sensitivity, ruggedness  
Establishment of within laboratory performance  
Verification of the performance of the method during its regular use  
Adaptation of a validated method

*Consultation*

*Practice:* establish within laboratory performance based in IQ data

## **Part II: Methodology**

The participants will be divided into two groups to perform the programme on testing chemical and microbiological contamination, respectively. The detailed programme will be worked out by the consultants, taking into account the current methodology applied in the laboratories.

## 7.2 Food safety assessment

**Duration:** 5 days

**Participants:** 20 with various university degrees

**Location:** Asmara

**Tools:** projector will be provided by the local organizer

**Subjects:**

1. Definition and explanation of terminology
2. Components of food safety
3. Hazard characterization
4. Risk assessment
5. Toxicological evaluation of food contaminants: toxicological end points
6. Estimation of short and long term dietary intake of chemical contaminants
7. Principles of planning food inspection programmes
8. Principles of planning monitoring programmes and specific field surveys
  - (a) Preparation of study plans,
  - (b) Specific requirements for sampling depending on the purpose of the study,
  - (c) Specific requirements for performance characteristics of analytical methods applied in food control programmes (LOQ, specificity, permissible rate of false positive and false negative detection,
  - (d) Evaluation of the results of monitoring programmes and specific field surveys
9. Risk communication

## 7.3 Internal and external audit in food control laboratories

**Duration:** 3 days

**Participants:** 16 with various university degrees

**Location:** Asmara

**Tools:** projector will be provided by the local organizer

### 1. Accreditation Bodies

International Accreditation Networks  
Legal and Regulatory Aspects  
Accreditation Body Requirements  
Accreditation Standards and Guidance Documents; Subsequent Drafts and Valid Revisions  
Accreditation and Certification Ensuring Impartiality  
Training for Quality Managers and Assessors

### 2. Audit

Planning and Preparation  
Roles and responsibilities of assessor, auditee and customer  
Documentation and checklists internal audit and external audit  
Combined system audits, joint audits  
Control of quality records  
Audit programme  
Reporting, follow up and corrective action  
Psychological aspects of audit: requirements for laboratory assessors  
Communication during audit process: act – observe – analyse – learn

### 3. Quality system in a laboratory

The Roles and Responsibilities of Top management, Quality Manager, Technical Managers,



and Laboratory Personnel;  
Functional requirement and position in the organization  
Hierarchy and lines of reporting to management by quality objectives  
Management Commitment and Management Reviews

*4. Milestones in Preparing Laboratory for Accreditation*

*5. Findings and recommendations based on the pre-audit of the laboratories*