COMMONWEALTH SECRETARIAT

IMPROVING FISHERY PRODUCTS IN MALAWI: TECHNICAL ASSISTANCE TO THE DEPARTMENT OF FISHERIES, GOVERNMENT OF MALAWI

PHASE 2: NEEDS ANALYSIS (PROGRESS REPORT N°1)

JUNE 2012

IN ASSOCIATION WITH ANARMAC

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Report (V.2) issued 21st May 2012
**Acronyms Used**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEHO</td>
<td>Assistant Environmental Health Officer</td>
</tr>
<tr>
<td>BCC</td>
<td>Blantyre City Council</td>
</tr>
<tr>
<td>BIP</td>
<td>Border Inspection Posts</td>
</tr>
<tr>
<td>BVC</td>
<td>Beach Village Committee</td>
</tr>
<tr>
<td>CA</td>
<td>Competent Authority</td>
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<tr>
<td>CAR</td>
<td>Corrective Action Request</td>
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<tr>
<td>COMESA</td>
<td>Common Market for Eastern and Southern Africa</td>
</tr>
<tr>
<td>COMMSEC</td>
<td>Commonwealth Secretariat</td>
</tr>
<tr>
<td>COU</td>
<td>Community Outreach Unit</td>
</tr>
<tr>
<td>DAHLD</td>
<td>Department of Animal Health and Livestock Development</td>
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<tr>
<td>DFO</td>
<td>District Fisheries Officer</td>
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<tr>
<td>DoF</td>
<td>Department of Fisheries</td>
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<tr>
<td>DTA</td>
<td>Double Taxation Agreement</td>
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<tr>
<td>EHO</td>
<td>Environmental Health Officer</td>
</tr>
<tr>
<td>EMS</td>
<td>Environmental Management System</td>
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<td>EQCS</td>
<td>Exports Quality Certification Scheme</td>
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<td>FOREX</td>
<td>Foreign Exchange</td>
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<td>FQIU</td>
<td>Fish Quality Inspection Unit</td>
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<tr>
<td>FVO</td>
<td>Food and Veterinary Office of the EU</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GHP</td>
<td>Good Hygienic Practice</td>
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<tr>
<td>GMP</td>
<td>Good Manufacturing Practice</td>
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<td>GoM</td>
<td>Government of Malawi</td>
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<tr>
<td>HACCP</td>
<td>Hazard Assessment and Critical Control Points</td>
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<tr>
<td>IPPA</td>
<td>Investment Promotion and Protection Agreement</td>
</tr>
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<td>IQMS</td>
<td>Imports Quality Monitoring Scheme</td>
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<tr>
<td>ISO</td>
<td>International Standards Organisation</td>
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<tr>
<td>IW</td>
<td>Ian Watson</td>
</tr>
<tr>
<td>LCBCCAP</td>
<td>Lake Chilwa Basin Climate Change Adaptation Project</td>
</tr>
<tr>
<td>MBS</td>
<td>Malawi Bureau of Standards</td>
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<tr>
<td>MCF</td>
<td>Malawi College of Fisheries</td>
</tr>
<tr>
<td>MIS</td>
<td>Management Information System</td>
</tr>
<tr>
<td>MoAFS</td>
<td>Ministry of Agriculture and Food Security (now MoAIWD)</td>
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<tr>
<td>MoAIWD</td>
<td>Ministry of Agriculture, Irrigation and Water Development</td>
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<tr>
<td>MoH</td>
<td>Ministry of Health</td>
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<tr>
<td>MoIIT</td>
<td>Ministry of Industry and Trade</td>
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<tr>
<td>MoLG RD</td>
<td>Ministry of Local Government and Rural Development</td>
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<tr>
<td>MS</td>
<td>Malawi Standard</td>
</tr>
<tr>
<td>MSCE</td>
<td>Malawi School Certificate of Education</td>
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<tr>
<td>MSME</td>
<td>Micro, Small and Medium Enterprise</td>
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<tr>
<td>NEPAD</td>
<td>New Partnership for African Development</td>
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<tr>
<td>NQI</td>
<td>National Quality Infrastructure</td>
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GLOSSARY OF TERMS

Accreditation: A process in which certification of competency, authority, or credibility is presented. Organizations that issue credentials or certify third parties against official standards are themselves formally accredited by accreditation bodies; hence they are sometimes known as accredited certification bodies. The accreditation process ensures that their certification practices are acceptable, typically meaning that they are competent to test and certify third parties, behave ethically and employ suitable quality assurance.

Aquaculture: The farming of aquatic organisms in inland and coastal areas, involving intervention in the rearing process to enhance production and the individual or corporate ownership of the stock being cultivated.

Audit: A systematic and independent examination to determine whether activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Best Environmental Practice (BEP): The application of the most appropriate combination of environmental control measures and strategies.

Biomass (B): The total quantity of fish in a stock and is used synonymously with stock abundance. Biomass is usually measured as a total tonnage of fish, but could be in numbers or other units to be synonymous with stock abundance.

Broodstock: Specimen or species, either as eggs, juveniles, or adults, from which a first or subsequent generation may be produced in captivity, whether for growing as aquaculture or for release to the wild for stock enhancement.

Chemotherapeutants: Compounds used in aquaculture to treat or prevent various diseases.

Codes of Conduct: Guidance for aquaculture operations in broad terms.

Codes of Practice: Voluntary codes designed to standardized and improve the management of aquaculture.

Co-management: The sharing of responsibility and authority between the government and the community of local fishers to manage a fishery.

Competent Authority: The central authority of a Member State (within the EU) or central national authority in any country, competent to carry out veterinary or health checks or any authority to which it has delegated that competence. The national authority designated and empowered by the law to perform inspections, assess facilities and production and control systems, to register and approve and provide certificates of agreement to the establishments and other facilities and to issue health certificates to permit the putting in the market of fishery products.

Corrective action request: The action requested by the Competent Authority after identification of a deviation from a critical limit in a HACCP plan occurs or whenever the results of monitoring procedures in respect of a prerequisite program plan, or a food safety program for the importing or exporting of fish or fishery products show that there is non-compliance with the regulation.

Ecosystem approach: An approach that recognizes the complexity of ecosystems and the interconnections among component parts. Can be applied to both fisheries (EAF) and aquaculture (EAA).

EN 45011: European Standard for bodies operating product certification systems.

Extensive aquaculture systems: Production system characterized by (i) a low degree of control (e.g. of environment, nutrition, predators, competitors, disease agents); (ii) low initial costs, low-level technology, and low production efficiency (yielding no more than 500
kg/ha/yr); (iii) high dependence on local climate and water quality; use of natural waterbodies (e.g. lagoons, bays, embayments) and of natural often unspecified food organisms.

**Finfish:** Fish with fins; that is teleosts, elasmobranches, holocephalids, agnathids and cephalochordates.

**Food conversion ratio:** Ratio between the dry weight of feed fed and the weight of yield gain. Measure of the efficiency of conversion of feed to fish (e.g. FCR = 2.8 means that 2.8 kg of feed is needed to produce one kilogram of fish live weight).

**Good Hygienic Practice (GHP):** All practices regarding the conditions and measures necessary to ensure the safety and suitability of food at all stages of the food chain.

**Good Manufacturing Practice:** All practices regarding the conditions and measures necessary to ensure the quality and suitability of a food at all stages of the food chain (includes the GHP).

**Hazard Analysis Critical Control Point (HACCP):** A system which identifies, evaluates, and controls hazards which are significant for food safety.

**Hygiene:** General food safety conditions, including contaminants and other food safety hazards which may be found in fish and fishery products.

**Inspection:** The official examination of establishments, of animals and food, and the processing thereof, of food businesses, and their management and production systems, including documents, finished product testing and feeding practices, and of the origin and destination of production inputs and outputs, in order to verify compliance with the legal requirements in all cases.

**ISO 14001:** International Standards Organization quality standards for environmental management systems.

**Marine Stewardship Council (MSC):** An independent body set up to establish basic principles for sustainable fishing and to provide standards for certification of individual fisheries as sustainable.

**Non-Governmental organizations (NGO):** Any non-profit, voluntary citizens' group which is organized on a local, national or international level; is generally task-oriented and driven by people with a common interest.

**On-growing:** Colloquial term for the process of raising of organisms after the initial larval/juvenile stages to a marketable size.

**Polyculture:** The rearing of two or more non-competitive species in the same culture unit.

**Pre-Requisite Programme (PRP):** Is a programme that is required prior to the application of the HACCP system to ensure that a fish and shellfish processing facility is operating according to the Codex Principles of Food Hygiene, the appropriate Code of Practice and appropriate food safety legislation.

**River basin:** Area of land from which all surface run-off flows through a sequence of streams, rivers and, possibly, freshwater lakes into the sea at a single wadi mouth, estuary or delta.

**Standard Sanitation Operation Procedures:** A detailed set of instructions, which describes how to carry out a task, related with the hygiene and sanitation.

**Sustainable development:** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
EXECUTIVE SUMMARY

Introduction

This report is the first progress report and presents the findings of Phase 2 (Needs Analysis) of this Commonwealth Secretariat funded project to improve the quality and safety of fishery products in Malawi. Working with the Malawi Government’s Department of Fisheries (DoF), together with the Malawi College of Fisheries (MCF, DoF’s training establishment) and the Malawi Bureau of Standards (MBS, who are responsible for setting and auditing against, quality standards in Malawi), this needs analysis focuses on the training courses, delivery and subsequent food safety assessment processes of these three organisations in the fisheries sector of Malawi. This Phase 2 is the precursor of Phase 3 (Capacity-building) & Phase 4 (Exit strategy) which will be implemented over September 2012.

This Executive Summary provides a brief summary of the key findings of the needs assessment at DoF, MCF and MBS. More detail can be found in the main report.

NEEDS IDENTIFICATION: MALAWI COLLEGE OF FISHERIES (ACTIVITY 2.2)

Assess MCF training capacity (Task 2.2.1): MCF conducts training programmes for both fishing communities and the DoF in fisheries management and post-harvest technology. MCF’s main role at the moment is to deliver the Pre-Service training programme for the DoF and is expected to expand in the next few years, if only to deliver a more advanced course for DoF staff. MCF is funded mainly through the DoF training programme. MCF has a nominal role in providing training and consultancy to the private sector but in practice, this role is limited. The limited facilities and funding available for food safety and post-harvest at MCF impose considerable constraints and limit the amount of practical training which can be carried out. The facilities are dated and not set up for practical food safety training. MCF faces a major challenge due to a lack of trained staff for post-harvest and food safety training which will limit the pace at which improved courses can be developed and taught.

Recommendations

- There is a need to invest in MCF to improve the facilities to widen the scope of the training it can deliver and to insure that trainees can be trained in practical food safety inspection and monitoring.

- In view of the constraints imposed by the lack of experience and knowledge of MCF staff, it is recommended that external trainers be sought to cover the PRP and HACCP training until MCF has developed suitable capacity.

Review MCF training curricula (Task 2.2.2): The curriculum for the Pre-Service training course and the draft curriculum for the Diploma course do not devote enough time to food safety and post-harvest issues and these areas are in need of considerable expansion in the future to cover the subjects in more breadth and depth. The curricula do not provide sufficient skills for current tasks for DoF inspectors and fall far short of what will be required in the near future for a proposed DoF inspectorate to carry out food safety inspections. Similarly, the curricula barely cover what is needed for the artisanal sectors of the private sector and come nowhere near to providing what is needed by the commercial sector.

Recommendations

The curricula for the Pre-Service and Diploma courses should have much greater coverage of post-harvest and food safety issues, particularly HACCP and associated food hygiene controls. The length of the courses is not suitable for upgrading skills of existing DoF staff and the development of a programme of short-course training is recommended to provide...
specific skill upgrades for DoF. It is also recommended that a series of short courses be developed for delivery to the private sector.

NEEDS IDENTIFICATION: MALAWI BUREAU OF STANDARDS (ACTIVITY 2.3)

Assess MBS audit capabilities (Task 2.3.1): The Malawi Bureau of Standards (MBS) was established in 1972 with a mandate (based on the Malawi Bureau of Standards Act) to promote standardisation of commodities and of their manufacture, production, processing or treatment. MBS has separate departments for (i) standard development & (ii) inspection. This provides some separation between these conflicting activities, but in practice there is little division e.g. standard development staff often work as auditors. MBS is a ‘commercial parastatal’ organisation and therefore does not receive government funding and is self-financing. MBS is itself not accredited to certify against any ISO standards and therefore conducts what it calls “non-accredited certification” for the time being. Standard development is a participatory process, with wide stakeholder coverage (via the Technical Committees). The fishery product specification standards are aimed at commercial organisations and are therefore inappropriate for the vast majority of (artisanally-produced) fish products in the Malawi supply chain. These are also in need of revision, at least to bring them in line with current CODEX standards. They do not cover the entire supply chain adequately and there is a need to expand their coverage to such areas as fish landings and fishing vessels. MBS is largely paper-based and, based on a limited review, could substantially improve its record-keeping.

Recommendations:

- There is a real need for over-arching coordination of food safety actions in Malawi, probably through some form of a Food Safety Act.
- MBS needs to consider separating its standard development and certification activities in order to reduce the potential for conflicts of interest.
- The existing fish product standards need to be revised to bring them in line with the latest CODEX and regional (COMESA/SADC) standards. A set of standards also need to be developed for aquaculture and dried fish.
- Once these product specification standards are gazetted, there should be a clear & practical derogation for the supply chain elements that cannot currently achieve these standards.
- MBS internal management information systems need considerable review and updating to bring them into line with appropriate international standards.

2.2.2 Review MBS training curricula (Task 2.3.2): Training for new recruits is a general introduction to quality control and audit. It does not cover key areas of food safety audit such as HACCP in enough detail to give auditors adequate knowledge to be able to conduct a HACCP review or HACCP audit. The courses offered to industry are more suitable for the intended market but uptake from industry is sometimes poor, despite an evident need for improved food safety standards and better food safety management.

Recommendations

Any officers carrying out food safety audits should be trained to HACCP audit standard. The officers should also be given more detailed training in sampling statistics and the use of sampling for measuring compliance with the Malawi Standard (MS). The range of short courses should be expanded and made available to the public sector (such as DoF) to enable them to upgrade their food safety skills.
NEEDS IDENTIFICATION: DEPARTMENT OF FISHERIES (ACTIVITY 2.4)

Institutional assessment of food safety governance in the fisheries sector (Task 2.4.1): DoF currently lacks the mandate and the capability to provide quality assurance services in the fisheries sector, and its activities are limited to providing informal advice to sector participants on achieving good hygienic practices. However a draft new Fisheries Policy gives much greater emphasis on the need for quality assurance and value-addition. Legislation is being drafted which will update and expand controls on food safety and quality for fishery products. It is unnecessary to bring in such strict controls at the moment as there is little prospect of the commercial sector being able to export to the EU in the medium term and it would be very expensive to implement. There is an intention within DoF to develop a cadre of dedicated fisheries inspectors. The Ministry of Health’s Environmental Health Services Division is already engaged in food safety inspection at District and lower local levels. The four City Councils are responsible for public health although there is little fisheries-specific activity e.g. at the fish area of public markets.

Recommendations:

- DoF focus on national and cross-border fish quality for the time being. It is recommended that DoF develop the institutional capacity to actively engage in improving the quality of fish being produced in, exported from, & imported to Malawi.
- A clear agreement on which organisations are best suited to address food safety in the different part of the fisheries supply chain is urgently required. Cross-sectoral discussions, possibly as part of the expected stakeholder process in developing a national food safety act, need to be considered as an immediate next step.
- Once a clear role for DoF in fish quality assurance is agreed at a national level, this needs to be reflected in legislation to ensure that DoF is suitably empowered to carry out its agreed mandate. DoF will need to develop a functional unit to plan, direct and implement fish quality assurance in Malawi, operating at both at central and district levels, with clearly separated inspection and extension services.
- There is an urgent need for similar benchmarks for artisanal capture fisheries and aquaculture production. Whilst formal standards may be inappropriate at this stage, some form of quantitative codes of Good Hygiene Practice may be appropriate.

Training needs analysis for DoF staff (Task 2.4.3): Training for DoF is mainly delivered by MCF and the training received reflects the shortcomings in the MCF curriculum in that DoF staff do not have sufficient training or skills in fishery post-harvest and food safety issues. Inspectors are short of practical skills for inspection and not trained in inspection methods. Training in the key food safety areas of the PRP and HACCP are lacking and most training has been at best awareness-raising rather than training designed to ensure an adequate level of knowledge and proficiency. This problem will be particularly acute for the proposed new unit within DoF which is expected to take on improved food safety controls. It will be very difficult for the new unit to function effectively with the current levels of training.

Recommendations

All DoF staff carrying out food safety inspections, other than those limited to artisanal fisheries, should have a basic knowledge of HACCP. Those carrying out inspections at commercial establishments should have advanced HACCP training. There is an urgent need to introduce short course training for DoF to upgrade the skills of existing staff and to fast-track staff in the new inspection unit in key areas such as HACCP and inspection methods.
EXAMINATION OF REGIONAL REQUIREMENTS FOR FOOD SAFETY (ACTIVITY 2.5)

The development of common COMESA standards for fishery products will present challenges for DoF, esp. in assuring that fishery products from Malawi meet the new standards. The new standards are likely to be introduced by COMESA member states and this could create a barrier for Malawian exporters. The current MS are likely to be similar to the new COMESA standards and their compulsory adoption by at least the commercial sector could accelerate the rate at which Malawi can achieve the required quality standards.

Recommendations

Recommendations will be made in the Phase 3 report once the text of the revised COMESA standards is available.

NATIONAL WORKSHOP ON FOOD SAFETY IN FISHERIES (ACTIVITY 2.1)

This second phase culminated in a national workshop on food safety hazards in fisheries and aquaculture. This two day workshop was held in Liwonde over 2-3 May 2012 and included initial presentations by the consultants (on the aims and objectives of the workshop, the processes involved, as well as the results of the Inception Phase), followed by a series of break-out and plenary discussions on the needs analysis (see Appendix M for report).

DETAILED WORK PLAN FOR PHASE 3 ONWARDS

As a result of the findings of the Phase 2, which were discussed with DoF at the closing meeting on 4th May 2012, we have made the following changes to the originally proposed programme (and subsequently amended at the end of the inception phase).

1. Task 3.1.1 (Design updated MCF training curricula) will now include three DoF staff at MCF in Mangochi, in addition to the MCF staff. This will allow the end users of the training (e.g. DoF) to interact with the curriculum development process. It will mean that Task 3.3.1 (Design updated DoF training curricula) is effectively replaced by this activity. This is based on the fact that DoF does not have its own training curricula – this in fact belongs to MCF, so we are concentrating our activities there.

2. Activity 3.2 (Capacity Development - Malawi Bureau of Standards) has been slightly amended to focus on regional, rather than EU trade.

3. To fund the extra per diem and transports costs of including the three DoF officers in Task 3.1.1 (Design updated MCF training curricula), it is suggested that Activity 4.2 (Final Workshop to present the Project Findings) takes place in Salima which is relatively close to Lilongwe. It is also suggested that key donors and regional projects active in fish quality issues are also invited to contribute to this workshop.

4. Publicity: the DoF suggested that the Final Workshop be well publicised in advance.

5. Website: the consultants have provided a website where project deliverables, such as approved reports and workshop reports can be downloaded. The URL is http://consult-poseidon.com/asp/accessInt.asp, the project number 842 and password commsec.

6. Reporting: We suggest that the Second Progress Report (due end Phase 3 is brought forward to 10th June. This is because Phases 3 and 4 are being run concurrently, with submission dates within days of each other.
1 BACKGROUND AND PURPOSE

1.1 BACKGROUND OF THE PROJECT

1.1.1 Background

Malawi’s *Growth and Development Strategy (2006 - 2011)* is committed to wealth creation through sustainable economic growth and infrastructure development as a means of achieving poverty reduction. The fisheries sector has a key role to play in poverty reduction through the provision of employment and, more importantly, its contribution to household food security. Most fish produced in Malawi is consumed locally although there is some trade in fishery products across the country’s borders, largely on an informal basis. There are plans that Malawi will be able to export fish products well beyond the sub-region by 2020.

The Government of Malawi’s *Department of Fisheries* (DoF) wishes to improve both the quality and safety of fishery products that are placed on the market in Malawi. However, as explored later in this report, there are numerous barriers to effecting control over fish quality, including a lack of technical capacity in both the private and public sectors, overlapping and uncertain jurisdictions, mandates and laws as well as a lack of the physical infrastructure required.

In order to improve both the quality and safety of fishery products that are placed on the market, DoF is keen to pursue the elaboration of a new set of fish quality and safety standards of particular relevance to small scale processing enterprises. DoF is also keen to re-introduce the practice of fish inspections by DoF staff in the major wholesale markets.

The role of the *Malawi Bureau of Standards* (MBS) is particularly significant as it is responsible for the preparation and publication of standards, including food-related standards. MBS currently undertakes periodic inspections and testing services of food processing establishments including certification of products from the largest commercial fish processing plant in the country (Maldeco). MBS also runs a number of training courses, on a commercial basis, for the public including a course on ‘Developing food safety management systems’.

A Micro, Small and Medium Enterprise (MSME) Policy and Strategy for Malawi is about to be developed. One of the objectives of the Policy is to strengthen the business support infrastructure through investment in dedicated institutions for MSME development. The ability of these dedicated institutions to understand and respond to the challenges facing small-scale fisheries enterprise will be critical to the ability of local enterprise to take advantage of new market opportunities for fishery products where compliance with higher quality and food safety considerations is likely to be key.

The last key actor in this project is the *Malawi College of Fisheries* (MCF). This college has provided the core training for the majority of DoF staff over the past 20 years and is also host to DoF’s Community Outreach Unit (COU). Fish hygiene and safety is included in its main syllabus and there are some practical demonstration facilities for traditional fishing drying and smoking. The curriculum of MCF concentrates on fisheries management with very limited content for fish quality and food safety. MCF has developed some training materials to cover these areas but has not yet produced the accompanying extension materials.
1.1.2 Objectives of the Project

The objective of the project is to improve the quality and safety of fishery products in Malawi. This will be achieved by way of interventions in support of the following:

- **Improved handling of fish by fishermen** leading to an improvement in quality and reduction of physical losses. Improved awareness of the real constraints to adoption of any new quality and safety standards by fishermen and small-scale enterprise, including lack of market related imperatives.

- **More strategic interventions by DoF to address fish quality and food safety issues** that are consistent with its mandate and existing capacities, taking into account the comparative advantage of other relevant institutions, including District Assemblies, to support efforts in this direction.

- **Improved cooperation amongst key stakeholders in the fish supply/value chain** with respect to addressing existing and future challenges to the quality and safety of fishery products from aquaculture.

- **Supportive policies** that promote a business environment where market forces and competition drive improvements in the quality and safety of fishery products.

1.2 PURPOSE OF THIS FIRST PROGRESS REPORT

This second project phase is the main diagnostic analytical stage of the overall project. During this phase the consultants have assessed the main issues, challenges and barriers facing both industry and government in ensuring fish quality and safety to consumers. This has combined technical issues in production as well as the ability of the various statutory agencies to respond to these. This has focused on three main agencies, these being DoF (quality assurance at industry level), MCF (appropriateness of training courses in responding to small-scale fisheries needs) and MBS (standards, inspection and auditing capability). This identification phase has been conducted through a combination of institutional needs assessment and training needs analysis, as appropriate. This report forms the first of two ‘Progress Reports’ and provides the basis for the scope and content of the next implementation phase.

The purpose of this First Progress Report is as follows:

1. To present the findings of the **food safety needs identification work** conducted at DoF, MCF and MBS. This covered the organisational mandate and capacity to undertake food safety roles, as well as the human capacity that is required to fulfil this.

2. An **examination of the regional requirements for food safety**. This desk study identifies the potential barriers to increasing formal trade into Malawi’s COMESA neighbours (South Africa, Zambia and Zimbabwe) and looking at means to address these through additional capacity-building and inception processes.

3. A report on the ‘**National Workshop on Food Safety in Fisheries**’ held in Liwonde over 2-3 May 2012.
1.3 REPORT STRUCTURE

Following this introduction, this report has the following main sections:

- **Section 2: Key Findings of Phase 2 (Needs Assessment).** Summarises the ‘needs identification’ for food safety management at DoF, MCF and MBS, including a detailed institutional analysis of all the major Government institutions dealing with food safety issues (e.g. Ministry of Health and the Ministry of Local Government and Rural Development). It also includes an examination of the training curricula for food safety used by DoF, MCF and MBS.

- **Section 3: Detailed Work Plan for Phase 2 Onwards.** This section updates and provides greater detail of the project activities and timeline. In particular it focuses on how the key outputs of the project e.g. the various reviews, workshops and guidelines will be delivered.

**Appendices** contain lists of people met, references made and detailed figures and tables. A number of detailed sub-reports are also included here e.g. (i) an Examination of the Regional Requirements for Food Safety and (ii) a Malawi Food Safety Legislation Review.

1.4 ITINERARY

A two person team, Mr. Ian Watson (team leader) (IW) and Mr. Tim Huntington (TH) conducted the first mission to Malawi over 9th April – 5th May 2012 (IW) and 21st April – 5th May 2012 (TH). See table below and Appendix D for names and contact details of those persons met.

**Table 1: Need Identification Mission (Phase 2) Itinerary**

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 09 April 2012</td>
<td>Lilongwe</td>
<td>IW arrives</td>
</tr>
<tr>
<td>Tue 10 April 2012</td>
<td>Lilongwe</td>
<td>Opening meeting at DoF.</td>
</tr>
<tr>
<td></td>
<td>Lilongwe</td>
<td>Travel to Mangochi</td>
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<tr>
<td>Wed 11 April 2012</td>
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</tr>
<tr>
<td>Thu 12 April 2012</td>
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</tr>
<tr>
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<td>Non-working day</td>
</tr>
<tr>
<td>Sun 15 April 2012</td>
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<td>Non-working day</td>
</tr>
<tr>
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</tr>
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</tr>
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<td>Thu 19 April 2012</td>
<td>Lilongwe/Banda</td>
<td>Bunda College</td>
</tr>
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<td>Fri 20 April 2012</td>
<td>Lilongwe</td>
<td>DoF</td>
</tr>
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<td>TH arrives. Workshop planning</td>
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<td>Sun 22 April 2012</td>
<td>Lilwonde</td>
<td>Visit workshop venue en route to Blantyre</td>
</tr>
<tr>
<td>Mon 23 April 2012</td>
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<td>National Holiday</td>
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<td>Malawi Bureau of Standards</td>
</tr>
<tr>
<td>Wed 25 April 2012</td>
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<td>Malawi Bureau of Standards. Depart for Lilongwe</td>
</tr>
<tr>
<td>Date</td>
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<td>Organisation</td>
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<tr>
<td>Thu 26 April 2012</td>
<td>Lilongwe</td>
<td>Department of Fisheries</td>
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<td>Fri 27 April 2012</td>
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<td>Ministry of Health (Environmental Health Services) and Department of Fisheries</td>
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<td>Sat 28 April 2012</td>
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<td>Report writing and workshop preparation</td>
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<td>Mon 30 April 2012</td>
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<td>Liwonde</td>
<td>Workshop</td>
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<tr>
<td>Thu 3 May 2012</td>
<td>Liwonde</td>
<td>Workshop. Depart for Lilongwe</td>
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<td>Fri 4 May</td>
<td>Lilongwe</td>
<td>DoF. Round up and closing meeting</td>
</tr>
<tr>
<td>Sat 6 May</td>
<td>Lilongwe</td>
<td>IW and TH depart for UK</td>
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</table>
2 KEY FINDINGS OF PHASE 2 (NEEDS ASSESSMENT)

2.1 NEEDS IDENTIFICATION: MALAWI COLLEGE OF FISHERIES (ACTIVITY 2.2)

The Malawi College of Fisheries is mandated to implement fisheries management training programmes for both user communities and the DoF. Based in Mpwepwe in Mangochi, MCF’s main purpose is to develop capacity, knowledge and skills by providing appropriate training programmes for the Department of Fisheries and fishing communities in Malawi and in the SADC region. This activity comprises two main tasks:

2.1.1 Assess MCF training capacity (Task 2.2.1)

This task assessed the capacity of MCF to provide in-depth training in post-harvest issues. This include a review of the physical assets available to MCF (laboratories, vehicles, equipment, etc), the number of staff available and the skills/knowledge of those staff relating to the control and regulation of food safety and quality for fisheries products.

Summary: The capacity of MCF to deliver effective training on fish quality and food safety is very limited and the facilities available for teaching are basic. Any attempt to implement a more advanced curriculum relevant to the demands of industry and a future competent authority would necessarily involve a substantial investment in upgrading training facilities, whether at MCF or at another location. In particular, the physical assets of MCF are in great need of some improvement which will involve at least some rebuilding and/or construction of new buildings. The facilities and how they compare to the requirements are detailed below. Developing a new curriculum and widening the range of courses offered by MCF is complicated as it is under the direct control of and is funded by DoF which means that changes cannot be made directly by the College but must be first proposed to DoF which must then approve them before they can be implemented. MCF is also hampered by its remit which currently prevents it from offering training directly to industry. It can however, offer training and extension to the artisanal sector.

Facilities

MCF laboratory: There is a single laboratory at MCF with a rather basic structure. There are sinks and benches and there is adequate space for a number of trainees (10-20, depending on what the training is for) but it is not designed as a wet lab which would impose some constraints on activities such as fish processing training. The laboratory is in a reasonable state of repair although not in a satisfactory condition for some food safety training purposes. There are wooden bench tops which would be suitable for basic post-harvest training but would not be suitable for food safety training. The differing requirements for post-harvest training and food safety training are outlined below.

Post-harvest training facilities: Post-harvest curriculum already contains some training on simple fish processing such as gutting, splitting and filleting. This is sometimes carried out in the open which, while it may reflect local conditions, is not satisfactory from a food safety point of view. Currently equipment for simple processing training is very limited, especially in the provision of suitable surfaces. Ideally, fish should be processed on plastic cutting boards although for local purposes, hardwood boards may be used, as long as they are made from close-grained wood with no cracks or splits. Knives are of local construction and not ideal for the purpose. To meet international standards for processing knives, they should be fitted with moulded plastic handles and not with wooden handles. The sinks are a particular problem as they are small and do not have draining boards. It would be better to replace them with large (preferably double) stainless steel sinks with draining boards to...
allow for the easy cleaning of all equipment. At least one sink should be large enough to accommodate such items as fish crates or cool boxes. For post-harvest work, the wooden bench tops would be better replaced by stainless steel tables or bench tops. Failing that, welded, continuous plastic surfaces could be fitted over the wooden benches. There are no facilities for ice production but ice can be bought in. There were no dedicated fridges or freezers for use in post-harvest training. Both would be needed to enable training on such subjects as cooling rate or shelf life, as well as for storing fish. The thermometers available are not suitable for the purpose. Glass thermometers should never be used near food products due to the risk of breakage and the digital thermometers at the lab were not suitable for food use. Two cool boxes are available but more would be useful, if there were more of varying sizes. There is no suitable protective clothing available for staff or students. A list of essential equipment for post-harvest training is given in Appendix K.

**Food safety training facilities:** There are no adequate facilities for practical food safety training at MCF and the lab is unsuitable for anything but the most basic of demonstrations. The lack of suitable food contact surfaces (stainless steel tables, hygienic cutting boards) means that any training would be compromised by the high risk of environmental contamination. In addition to the shortages of suitable thermometers and protective clothing identified for post-harvest training, there are also shortages of additional equipment needed for food safety training such as disposable gloves. However, the greatest problem with the lab is the lack of access to analytical and microbiology facilities. These are essential for advanced food safety training and for some advanced food quality training (e.g. analysis of volatile amines, salt analysis) and there is neither the equipment nor the supporting facilities (chemical resistant benches, fume cupboards, extractor hoods) to enable the safe and effective operation of the analytical equipment required. There is no part of the lab which could be converted into a microbiology lab but it may be possible to build a room within the lab to allow this. Food safety training which did not include some basic techniques such as swab sampling would be unsatisfactory and it will be essential to build this into the training in the future. This raises the question of whether this is a cost-effective option or whether it would be better to send trainees to another training institute with suitable facilities. The latter may be a much better option, especially for microbiology training which is best carried out by specialists who have access to all the necessary facilities to be able to demonstrate basic and advanced techniques and allow trainees at least some experience of a microbiology lab. There are no facilities for testing the quality of potable water, not even simple chlorine tests. A list of essential equipment for food safety training is included in Appendix K.

**Competent authority training facilities:** The training of competent authority inspectors requires access to adequate facilities and trainers with a wide knowledge of food safety issues and specialist knowledge of food safety regulation for fishery products. As outlined above, the facilities at MCF are currently lacking and would pose a major problem if the College were to undertake this sort of training at anything other than the most basic level (e.g. inspection of artisanal landing sites). The facilities available would not be suitable for training inspectors who would be going into commercial processing sites to inspect against even the MBS standards. For inspection to a higher level, as is likely under the COMESA harmonised standards, a much higher level of training would be needed, especially for senior inspectors. For that to be possible, it would be essential for the facilities to be upgraded. Examination of the training requirements for a competent authority is included in Section 2.3.3.
MCF vehicles: There is a limited pool of vehicles at MCF and access may sometimes be limited by conflicting demands for use. The vehicles are sometimes used by training courses to take trainees to landing sites and so on and it appears not to be a major constraint on work. The vehicles are all rather old and are likely to need replacement in the next few years.

Personnel

MCF training staff: There is one member of MCF staff who deals with food safety and post harvest training, Mr. Nevarsson Msusu. Mr. Msusu has had little formal training in fisheries post-harvest of food safety. In addition, a member of DoF, Mr. Josia Chamveka also participates in training courses as a tutor. Mr. Chamveka received food technology and food safety training in the UK (Grimsby College) in 1985.

Alternative training providers

The option of using other training providers should be considered, at least for the provision of training to the private sector and for short course training for DoF staff. The limited capacity of MCF to deliver food safety training is a matter of concern and it would be prudent to consider the use of specialist training facilities (such as for food microbiology) to fill in the current training gaps. In addition, MCF is not easily accessible from all parts of Malawi and it would be useful to have a number of regional training centres which could provide specialist or short course training, especially for the commercial industry. The artisanal catching and processing sectors are of less concern as, once a cadre of fully trained DoF extension officers is available, they should be well served for advice and training on food safety and post-harvest issues at the scale of artisanal fisheries. Alternative training centres could include Chancellor College which can provide training in microbiology, Mzuzu University which can provide training in fish biology and University Bunda College (see below). The provision of short courses or specialist training could also be carried out by MBS (see Section 2.2) which has a number of courses on food safety and food safety management which it offers regularly. The role of an inspector in ensuring food safety is more that of an Environmental Health Officer (EHO) than that of a Fisheries Officer, which means that new training possibilities are opened up. It would make more sense in terms of the skills needed, to recruit fully qualified inspectors from an environmental health background and give them short orientation training on fishery products than it would to recruit a fisheries specialist and then have to give them prolonged training in food safety issues and their regulation. The Polytechnic of the University of Malawi gives degree level training to EHOs on a 4-year course. The Malawi College of Health Sciences provides training to Diploma level on a 3-year course. Both courses include comprehensive training on food safety issues, including HACCP. These institutions may provide staff with a much higher level of food safety training than the fishery institutions are able to supply and it would be worth considering such graduates, at least for the senior officers in any potential fish quality inspection unit.

Bunda College: MCF receives training support on the Pre-Service Certificate and is planned to receive support for the Diploma from Bunda College, Department of Aquaculture and Fisheries. The support is currently limited to fisheries and aquaculture subjects but there is capacity and knowledge available from Banda College which could usefully be employed to fill in some of the gaps in capacity and facilities at MCF, at least in the short term. Banda College has a number of staff with relevant experience, notably Dr. Fanuel Kapute who currently teaches at BSc level on fish processing, post-harvest handling, fish processing and
food safety. The training also extends to other subjects such as marketing and traceability which may also be of value. Dr. Kapute teaches Pre-Requisite Programme and HACCP as part of the food safety module, although it should be noted that he has had no formal training in the teaching of HACCP and only limited training in the application of HACCP. There remains a skills gap to be closed in this area for Bunda College.

The food safety and post-harvest training is currently about 80% classroom and 20% practical, a limitation the College recognises and which is due to funding constraints. The College does have the capacity for limited microbiology work, although all samples are currently sent to Chancellor College in Zomba. Although the College has some facilities for microbiology it does not have the facilities for more sophisticated tasks such as identification of specific bacteria. The chemical laboratory is hampered by funding but can carry out some of the more basic work such as proximate analysis. There are facilities for some processing and post-harvest studies to be carried out including smoking and freezing. The course usually involves some visits to commercial establishments such as the Maldeco processing plant where students can see processing at first hand and evaluate the food safety controls in operation.

The College trains about 40-50 students yearly, most of whom join from school at the age of 15-16. The BSc course lasts four years, the first year being a foundation course, equivalent to “A” level. Graduates tend to go mainly into the private sector, although some enter government service. The curriculum for post-harvest and food safety is included in Appendix J.

**Main findings and recommendations MCF training capacity**

**Main findings**

- Training capacity for fishery product post-harvest and food safety is limited by a lack of facilities for these activities. There are very limited facilities for post-harvest training and none for food safety training.
- The courses provide little opportunity for practical training due to limitations imposed by the facilities and a restricted budget.
- Teaching is constrained by staff limitations with only one full-time member of staff responsible for training on post-harvest and food safety who has limited experience in this field.

**Key recommendations**

- There is a need to invest in MCF to improve the facilities to widen the scope of the training it can deliver and to insure that trainees can be trained in practical food safety inspection and monitoring.
- In view of the constraints imposed by the lack of experience and knowledge of MCF staff, it is recommended that external trainers be sought to cover the PRP and HACCP training until MCF has developed suitable capacity.
2.1.2 Review MCF training curricula (Task 2.2.2)

The review examined the current curricula and the training materials available to MCF and assessed their relevance to various groups (small-scale fishers, small and commercial scale aquaculture farms, fish buyers/traders, fish processors, fish exporters). The training curricula were examined for their relevance to the needs of the local markets (safe, wholesome food) and to the requirements for export markets (quality standards, international food safety standards, buyer requirements).

This review is sub-divided into four different sections:

- MCF Training Curricula
- Pre-Service Certificate Curriculum
- Diploma Curriculum
- Short Course Delivery
- Private Sector Training

Review of MCF training curricula

This review was conducted against the expected skills and knowledge required for inspectors to perform post-harvest and food safety checks to varying degrees of complexity and in varying circumstances.

The skills required for competent authority inspectors were assessed to be as follows:

Officers inspecting artisanal landing sites, artisanal processing and village markets

- Basic understanding of food safety issues applicable to fresh and dried fish and to simple processing such as drying or salting.
- Basic understanding of simple processing techniques such as gutting and drying.
- Familiarity with DoF extension messages relating to artisanal operations (storage of fish on boats, cleanliness, personal hygiene, etc).
- Training in the delivery of extension messages to the artisanal sectors.
- Basic knowledge of the relevant Malawi legislation on food safety and food standards.

Officers inspecting commercial fishing vessels and landing sites

In addition to the above skills, these inspectors will require:

- Detailed knowledge of food safety and post-harvest issues on board fishing vessels and at landing sites, to include proper use of ice, correct fish handling, effective cleaning and sanitation.
- Detailed knowledge and understanding of the Malawi legislation on food safety for fisheries products on board fishing vessels and at landing sites.

Officers carrying out simple inspections at commercial fish processing plants

- Sound understanding of food safety issues which may affect the processing of a range of fishery products (e.g. smoking, gutting, filleting, and freezing).
- Sound understanding of the principles of food safety monitoring and inspection including the correct use of checklists.
- Sound knowledge and understanding of the Malawi legislation on the safety of fishery products (and in time, the standards required by export markets such as COMESA).
• Sound understanding of the requirements for reporting and record keeping.
• Full understanding of the operation and use of any equipment used during inspections.
• Basic understanding of the principles of HACCP and its role in ensuring the safe production of food.

**Officers carrying out audits at commercial fish processing plants**

In addition to the skills outlined above for inspection:

• Sound understanding of HACCP and how to inspect and audit HACCP systems for compliance.
• Sound knowledge of sampling for microbiological contamination and an understanding of the causes for bacterial food poisoning.
• Detailed knowledge of the Malawi legislation on food safety and product standards and, where needed, detailed knowledge of the food safety requirements for export markets.
• Advanced knowledge of food safety issues and food safety assurance systems at processing plants.
• Full understanding of the requirements for record keeping, reporting and dealing with non-compliance with Malawi food safety legislation.

**Officers carrying out inspections at aquaculture farms**

• Basic understanding of food safety issues at aquaculture farms (restricted to safe handling at harvest).
• Detailed understanding of the Malawi legislation on monitoring and control of the use of veterinary medicines at aquaculture farms (when such legislation is enacted).
• Understanding of sampling methods for aquaculture farms.
• Understanding of the risks from aquaculture feeds.

The skills required for the private sector would be quite different and would vary greatly according to the skills required by the worker, supervisor or manager. The skills are assessed as follows:

**Artisanal catching sector**

• Basic understanding of personal hygiene and the role of cleanliness on board in keeping food safe.
• Basic understanding of post-harvest requirements for maintaining fish quality and safety such as the correct use of ice.

**Artisanal processing and selling sectors**

• Basic understanding of the need for good personal hygiene and cleanliness.
• Basic understanding of how to keep fish clean and avoid contamination which could lead to food safety issues.
• Basic understanding of processing to maintain quality and to preserve products.

**Commercial catching sector**

• Boat captains – sound knowledge of the preservation of quality and food safety for fish on board.
- Boat captain – sound knowledge of the requirements for cleaning and sanitation on board to prevent contamination of fish.
- Boat crew – basic understanding of food safety and quality control issues for fish on board fishing vessels.

**Commercial processing sector**

- All workers – basic understanding of food safety and the importance of cleanliness.
- Production supervisors – sound understanding of the implementation of food safety systems and the production of safe food. Basic understanding of the principles of HACCP and its operation. Understanding of the Pre-Requisite Programme (sound construction of facilities, the use of Good Manufacturing Practice, and the use of Standard Sanitary Operating Procedures).
- Production managers – advanced knowledge of HACCP and food safety control systems. Advanced understanding of the role of the Pre-Requisite Programme in ensuring the production of safe food.

**Artisanal aquaculture**

- Basic understanding of the preservation of quality of fish on harvesting.
- Basic understanding of the use of veterinary medicines.

**Commercial aquaculture**

- All farm workers – basic understanding of the need for good personal hygiene and cleanliness.
- Production supervisors – basic understanding of the use of ice for preserving fish quality. Basic understanding of food safety issues relating to aquaculture products.
- Farm managers – sound understanding of Malawi legislation on the use of veterinary medicines. Sound understanding of the preservation of fish quality and food safety. Sound understanding of the risks associated with aquaculture feeds and the importance of proper storage.

The curricula were assessed against the above to see how the existing curricula met those needs and what might be lacking from the current courses on offer.

**The Pre-Service Certificate curriculum**

This training is designed to give the basic knowledge of a wide range of fishery subjects required for entry level to DoF, although it can also provide suitable training for potential private sector employees too. The section dealing with post-harvest issues does not include any direct food safety training, although there is some incidental training through such issues as spoilage and the correct use of ice for fish preservation. Given the importance of ensuring sound food safety practices in all areas, it is highly desirable that greater emphasis be given to basic food safety training on order that officers completing their Certificate course are in a position to be able to both regulate and advise on good food safety practices. There is also no provision for teaching the basic understanding of any Malawi legislation on food safety or food standards. Knowledge of both of these areas would be essential for any government officer involved in the inspection of fishery-related sites.
In order to meet the requirements for a competent authority inspector outlined above, the course would need some amendments. These are detailed in Appendix J but can be summarised as:

- Basic knowledge of food safety for fishery products.
- Basic understanding of how post-harvest handling and processing affect the quality and safety of a product.
- Basic understanding of food safety inspection methods used by the competent authority, including all relevant procedures and manuals.
- Understanding of the equipment needed for carrying out inspections and its use.

It should be noted that, in the absence of any meaningful food safety legislation, some of the suggested additions may be of limited use in the immediate future, but they will be required for any effective enforcement of new legislation and should be brought into the curriculum at the earliest opportunity to ensure that properly trained officers are in post before any new legislation comes into force.

There is also a need to develop the curriculum to make it more relevant to the private sector. Accepting that the artisanal fishers and processors may best be trained through simple extension messages, a curriculum targeted at the commercial sector may be more appropriate, although this would be a problem under the current remit for training at MCF where it is required to serve as a training centre for DoF, not the private sector. This is covered within the Private Sector Training below.

The Diploma curriculum

The Diploma curriculum is similarly in need of strengthening in the areas of post-harvest and food safety. There is a specific need for some higher level skills to be taught in the management of food safety and in the inspection of commercial premises (including vessels) for compliance with food safety legislation. Although the food safety legislation for all food products is rudimentary at present, a fully trained cadre of senior inspectors should be in place before any new, more stringent legislation is implemented to ensure adequate enforcement. The additional requirements are detailed in Appendix J and can be summarised as:

- Sound knowledge of Malawi and COMESA food safety legislation and standards applying to fishery products.
- Detailed understanding of the role that good hygiene and sanitation plays in ensuring food safety.
- Detailed understanding of the Pre-Requisite Programme and how this supports the HACCP systems.
- Detailed understanding of HACCP and for some, specific knowledge of HACCP audit.
- Sound knowledge of food safety and the factors which may cause food to be unsafe.
- Detailed understanding of the operation of inspection procedures and the important of record keeping.

A number of highly qualified lead inspectors or auditors will be needed, especially where commercial and large scale activities take place.
**Short course delivery**

While MCF has the capability to deliver short course training, this capability is currently underutilised. Given the likely changes in Malawi in the medium term (e.g. growth of private sector, expansion of commercial processing, updated legislation) it is certain that some DoF inspectors will require training to give them upgraded or new skills to enable them to carry out their inspection and enforcement duties with confidence and accuracy. It would be very desirable for MCF to develop a series of short courses to be delivered to DoF officers in need of new and/or upgraded skills.

**Private sector training**

MCF has no current remit to provide training to the private sector directly, although training is provided through persons attending the Pre-Service Certificate course who then go on to work in the private sector. Training the private sector is very different from training government and is generally characterised by the need for more targeted courses of short duration so that workers are not absent from the company for too long. In addition, training may be required to be delivered at the place of work rather than at a formal training session in a college. Courses which should be required by the private sector in the near future include:

- Basic food safety training for processing staff and boat crew.
- Food safety systems training for production supervisors and managers.
- HACCP, PRP, GHP, GMP training for managers.

There is a clear need to provide such training even under the currently limited requirements of food safety legislation and there should be much higher demand in the future. It may be required that a number of centres in Malawi are capable of providing training to enterprises on a local level.

**Main findings and recommendations MCF curriculum**

**Key findings**

- The curricula for both the Pre-Service and the Diploma courses do not cover the areas of post-harvest and food safety in sufficient detail and would not provide sufficient depth to train potential competent authority inspectors to an adequate level.
- The amount of time devoted to the PRP and HACCP in not sufficient to give trainees even a basic understanding of the topics. HACCP training is usually progressive and should be designed to give Pre-Service trainees at least an understanding of the principles of HACCP and its operation and for Diploma trainees at least a sound understanding of how a HACCP programme is put together and how it is monitored to ensure its effectiveness.
- The length of the training courses does not provide for updating of the skills of existing DoF staff and does not permit specialised training to be given on particular subjects.
- The facilities and skills at MCF could be put to better use if the courses were expanded to include training targeted at the private sector.
Key recommendations

- There is a need to expand the food safety and post-harvest training modules of both the Pre-Service and Diploma courses delivered for DoF. There is a need to ensure that both courses include complete training packages on the PRP and HACCP.

- There is a need for MCF to develop short course training capability to deliver targeted training to the private sector and to DoF to provide specific skills for key personnel and general skills to anyone working where knowledge of food safety is required.

- In the short term, it is recommended that MCF bring in trainers with specialised skills (such as HACCP) to fill in the capacity gaps in the curricula.
2.2 NEEDS IDENTIFICATION: MALAWI BUREAU OF STANDARDS (ACTIVITY 2.3)

The Malawi Bureau of Standards (MBS) is a statutory organization established in 1972 with a mandate to promote standardisation of commodities and of their manufacture, production, processing or treatment.

This activity comprises two main tasks:

1. Assess MBS audit capabilities (Task 2.3.1)
2. Review MBS training curricula (Task 2.3.2)

The results of this activity are also relevant to the ‘Institutional assessment of food safety governance in the fisheries sector (Task 2.4.1)’. 

2.2.1 Assess MBS audit capabilities (Task 2.3.1)

This task assesses the capacity of MBS to act as a controlling and certifying body and its ability to develop standards for regulation of the quality and safety of fisheries products. This included a review of its physical assets (laboratories, equipment, staff, etc), the number of staff available and the skills/knowledge of those staff relating to the development and drafting of standards for different markets. The capacity of MBS to inspect premises processing fisheries products and to certify fisheries for export was also reviewed.

Background to MBS

Origin and Mandate: The Malawi Bureau of Standards (MBS) is a statutory organization established in 1972 by the ‘Malawi Bureau of Standards Act’ (Cap 51:02). Based on this Act, MBS has a mandate to “promote the standardization of commodities and of their manufacture, production, processing or treatment; and further to provide for matters incidental to, or connected, with standardization” (MBS website, accessed 23 April 2012). These roles are explored more in the box below.

Box 1: MBS Act Objectives

The MBS Act includes the following objectives for the Malawi Bureau of Standards:

- To promote standardization in industry and commerce;
- To prepare, frame, modify or amend specifications and codes of practice;
- To recommend the adoption in whole or in part, with or without amendment, of any specification or code of practice;
- To make arrangements or provide facilities for the testing and calibration of precision instruments, gauges and scientific apparatus for the determination of their degree of accuracy by comparison with standards approved by the Minister on the recommendation of the Board, and for issue of certificates in regard thereto;
- To make arrangements or provide facilities for the examination and testing of commodities, material or substance from or with which they may be manufactured, produced, processed or treated, and of the manner in which this may be done;
- To control, in accordance with provisions of the Act, the use of standardization marks and distinctive marks;
- To encourage or undertake educational work in connection with standardization;
- To provide for co-operation with any person, association or organization outside Malawi having objectives similar to those of the Malawi Bureau of Standards;
- To frame, amend or substitute draft building regulations for the benefit of local authorities;
- To provide for co-operation with the representatives of any branch of industry, ministry, government department, local authority or any statutory corporation or with any person with a view to bringing about standardization in connection with commodities;
- To provide for the testing of locally manufactured or imported commodities with a view to determining whether such commodities comply with the provisions of the Standardization Act or any other law relating to standards of quality.

**Structure**: The functions of the MBS are undertaken by five departments (see Appendix G for full MBS organisation chart) as follows:

- **Finance and Administration Department** – Responsible for the financial and administrative matters.
- **Standards Development Department** – Responsible for the development of Malawi standards and the dissemination of standards and related information. Includes a ‘Food & Agriculture Division’.
- **Quality Assurance Services Department** – Responsible for the implementation of standards through inspection and certification services. Includes three divisions for *Certification & Inspection, Import & Export Certification and Internal/External Quality Management*.
- **Technical Services Department** – Provides testing services for product certification services as well as testing of client samples from the industry and the general public.
- **Metrology Services Department** – Provides verification and inspection services as well as calibration services.

MBS’ headquarters is in Blantyre, with two other main offices in Lilongwe and Mzuzu. It also has border offices in Mwanza, Songwe, Muloza, Dedza and Mchinji. MBS is looking to strengthen its presence in Lilongwe and Mzuzu to act as regional centres.

**Staffing**: The Director-General is the Chief Executive Officer (CEO) responsible for the day-to-day administration of the MBS within guidelines formulated by the Malawi Standards Board. MBS has 173 staff members, the majority (40%) of which are involved in finance and administration. 9% of staff are in *Standard Development* and 18% in *Quality Assurance Services*. At least half of the officers in these two sections are graduates or post graduates.

**Table 2: MBS staff numbers and qualification levels**

<table>
<thead>
<tr>
<th>Department</th>
<th>Post-graduate</th>
<th>Graduate</th>
<th>Diploma</th>
<th>Other e.g. MSCE / JCE</th>
<th>Total</th>
</tr>
</thead>
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<td>5</td>
<td>7</td>
<td>54</td>
<td>69</td>
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<td>Standards Development</td>
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<td>8</td>
<td>-</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Quality Assurance Services</td>
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<td>12</td>
<td>13</td>
<td>5</td>
<td>32</td>
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<td>7</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>39</strong></td>
<td><strong>40</strong></td>
<td><strong>85</strong></td>
<td><strong>173</strong></td>
</tr>
</tbody>
</table>

Source: Fred Sikwese, MBS pers. comm., 01 May 2012
**Funding:** when originally set up in 1972 MBS was fully government funded. However since then the Government has instigated a cost-recovery process and now MBS is considered a ‘Commercial Parastatal’ that is fully self-funding. Funding is obtained from certification and auditing fees, quality mark licensing, a number of levies on imported materials as well as commercial training courses conducted by MBS.

**Accreditation status:** MBS is the national Codex contact Point and it is also the WTO/SPS enquiry point as well as the WTO/TBT enquiry point. MBS is working towards, but is not yet accredited to audit or certify against ISO 9000/9001 or ISO 22000 (food safety management systems) standards and does not yet apply ISO 9000/9001 for its own operations. MBS is also working towards ISO 17021 (for accrediting Certification Bodies who certify organisations against QMS and EMS management system standards) and ISO 17025 (laboratories and calibration) accreditation, with SADCAS as the accreditation body. Given the level of documentation and system development required, accreditation to any of these standards is not considered likely to be achieved in the short-term. As a result, MBS conducts what it calls “non-accredited certification” for the time being.

MBS is a Corresponding Member of ISO, and is seeking full membership.

**Standards Development and Existing Standards**

**Standard development:** MBS developed over 800 national standards (Malawi Standard or MS) providing either the basis of guidelines for measuring the quality, performance or fitness for intended use of a product or service. The formulation of standards is done through Technical Committees (TCs) which are made up of representatives from the industry, government ministries and departments, professional organizations and bodies, among others. The *Standards Development Department* provides the secretariat for these committees. A specific TC for ‘Fish and fish products’ (TC 39) has been formed under a wider ‘Food and Agriculture Divisional Committee’ of MBS. Whilst this varies between the standards, the following organisations were represented within this TC:

- Blantyre City Assembly
- Cold Storage Company Limited
- Department of Animal Health & Industry
- Department of Fisheries
- Malawi Bureau of Standards
- Malawi Export Promotion Council
- Maldeco Fisheries
- Ministry of Health & Population (Blantyre District Health Office)
- People’s Trading Centre (PTC)

**Existing standards:** in 2002 DoF approached MBS to develop some specification standards for fisheries products. To date, five such standards have been developed as follows:

**MS 115 (2002)** *Frozen fish - Specification:* outlines requirements for fresh, whole fish that is frozen and glazed.

**MS 116 (2002)** *Salted fish - Specification:* specifies requirements for all species of fish, which are wet salted, sold while fresh or dry.

MS 118 (2002)  **Canned fish, canned fish products, and canned marine molluscs -**
**Specification:** covers the requirements for the manufacture, production, processing, or treatment and methods of tests for canned fish, canned fish products, and canned molluscs and their methods of tests.

MS 770 (2007)  **Fresh fish - Specification:** establishes quality requirements for fish and permissible temperatures and times for the handling, preparation, distribution and packaging of fresh fish.

To date these standards have not been gazetted and are thus purely voluntary. However it is understood (Fred Sikwese, MBS, pers. comm., 24 April 2012) that they have recently been approved for gazetting – and thus will become mandatory.

**Scope of application:** The major question over these standards is if they become mandatory, to whom they should be applied? They have been aimed at the commercial sector, especially one that might be considering export, but are too restrictive for much of the current fish production pathways and artisanal level processing. The MBS Act (Clause 20 (3)) permits the Minister to allow derogation to this law, thus authorizing certain parties to be exempt. However at present there is no clear demarcation of what parts of the fisheries supply chain should be exempted.

Once a clear demarcation is achieved, it is important that the exempted fisheries are not disadvantaged commercially, nor food safety ignored. To this end, interim measures – such as codes of good practise and continued extension and training – are required until formal standards are practical and achievable.

In addition, there are more generic standards of relevance to fisheries products, including MS 21 (2002): ‘Food and food processing units – Code of Hygienic Conditions’, MS 300 (2004): ‘General guidelines for establishing a Hazard Analysis Critical Control Point (HACCP) system in a food establishment’. Both standards are issued in reference to the relevant Codex standards and in combination they can be considered to be broadly equivalent to the relevant sections of EU Regulation (EC) 852/2004 on general hygiene requirements to all food business operators. As the MS are based mainly on CODEX standards, they do not fully match the EU legislation.

MBS have also put a number of ISO standards under their own covers. These include:

- **MS-ISO 9001:**2008 Quality Management Systems – Requirements
- **MS-ISO 15161:**2001 Guidelines on the Application Of MS-ISO 9001:2000 for the Food and Drink Industry
- **MS-ISO 22000:**2005 Food Safety Management Systems – General Guidelines on Principles System and Support Techniques
- **MS-ISO/TS 22003:**2005 Food Safety Management Systems- Requirements for Bodies Providing Audit and Certification of Food Safety Management Systems
- These standards for fishery products make reference to various established international and national standards, such as **Codex Standard CX/FFP 00/4: Processing of fresh, frozen and minced fish** (a provisional draft standard) subsequently incorporated into CODEX Code of Practice for fish and fishery products (CAC-RCP 52_2003).
Review of the existing standards related to fish and fish products: based on a brief review of these standards, we have the following observations:

- Between them, and with the addition of the more generic hygiene and HACCP standards, they cover most of the fish products produced and consumed in Malawi. However, there is an apparent gap for dried fish (unsalted). This product is now sold in small but growing quantities in supermarkets, especially from the improved solar driers being trialled by WorldFish.

- These five standards are largely based on a number of provisional Codex Alimentarius standards which have been either superseded or are redundant. This is recognized by MBS, but there are no plans to update the current fish product specification standards at present.

- The standard on fresh fishery products (MS 770:2007) cannot be considered equivalent to specific hygiene requirements for similar products specified by EU Regulation (EC) 853/2004, Annex III section VIII. The MS contains some of the requirements but there are some important omissions, notably relating to conditions on board vessels and the use of ice. There are also some specifications relating to contaminants and microbiological standards which do not meet the EU requirements. The requirements stipulated in standards for frozen, smoked and salted products (MS 115:2002, 116:2002, 117:2002) cannot be considered equivalent to other product specific requirements in Regulation (EC) 853/2004, Annex III section VIII and other relevant EU legislation. For example, the monitoring of visible parasites is included only as a reference to the quality of the raw material, requirements for the monitoring of freezing temperature and cold storage are not adequately stipulated and the stipulated health criteria do not comply with EU health criteria. In addition, some of the environmental contaminants for which a level is specified (PCBs) cannot currently be tested for in Malawi.

- While MS 21 does apply to premises where fishery products are handled or processed, the MS does not include provision for key fishery-related facilities such as landing sites, cold stores or fishing vessels. Given the nature of fishery products and their susceptibility to spoilage and contamination, the use of HACCP as specified in MS 300 should also be considered to be mandatory for any commercial premises where fishery products are handled or processed.

- Full equivalence with EU legislative requirements could only be achieved by a substantial investment in analytical capacity for both the private and public sectors. Even for the relatively limited number of analyses required by the MS, there is little possibility of any laboratory in Malawi being able to carry out the services necessary.

- There are currently no MS for aquaculture which is a problem, even for regional trade as there is already a requirement for testing for antibiotic residues which is likely to be consolidated into the COMESA/SADC standards for fishery products. MBS does not currently have the capacity to analyse for residues of veterinary medicines, although they could do so in the near future, subject to funding. It would also be useful to have a set of MS to cover feed production and use which should include aquaculture feeds.
Laboratory and equipment: The laboratory at MBS has separate areas for wet chemistry and microbiology, and segregated instrumentation rooms (GC-MS, HPLC, calorimetry, etc). The laboratory is constructed to a standard which would have been acceptable when first constructed but which now falls short of what is required by international standards and by ISO 17025. This is due in part to wear and tear and in part due to construction methods which are no longer considered acceptable (e.g. louver windows, wooden benches with plastic tops). It is assumed that the construction of a new laboratory as part of the works carried out for the relocation of MBS will fix these problems.

The laboratory has the capacity to perform a wider range of analyses than are presently carried out, but is hampered by a lack of funds. Even some current analyses are restricted due to the shortage of key materials such as standards. It is also evident that the laboratory lacks sufficient funds to carry out preventative maintenance and repairs to broken laboratory equipment. Given that it is almost certain that the laboratory services will come under more pressure as more sampling takes place, this will place a further burden on staff which will require the allocation of a significant budget increase to allow for higher use of reagents and consumables and for more trained staff to cope with the increased workload.

The laboratory of an accreditation body such as MBS would be expected to be accredited to ISO 17025. While the state of the infrastructure makes it unlikely that the MBS laboratory would comply with the requirements of ISO 17025, the laboratory can still prepare for this by developing a complete quality management system to cover the quality control for the management and operation of the laboratory and all the activities carried out in it. This is a work in progress with most of the progress having been made in the writing of laboratory procedures. To push this task to the state where it could meet the requirements for ISO 17025 would require some effort and further training for the MBS team responsible for managing the process.

It is understood that the Government has allocated MBS a new site (still in Blantyre) for its laboratory and other services. The new laboratory facility will be built with EU and UNIDO assistance. However there are some delays in the allocation of the new site, and the move is not expected in the next couple of years.

Vehicles: Given that all MBS’ inspection services are run from Blantyre in the extreme south of the country, the organisation faces considerable logistical difficulties in covering the whole of Malawi. MBS has a fleet of around 15 vehicles, mostly double-cab pickups. 10 of these are assigned for inspection duties, but it is understood that a number of these are probably unserviceable. It is important that MBS staff have access to reliable vehicles, as they are often carrying perishable samples for testing. Obtaining fuel has been an increasing problem over the last 1½ years, although the situation has seen some improvement of late.

IT Strategy and Support: although a detailed evaluation has not been possible, a brief assessment of MBS’ IT strategy and use was made. It indicates that there has been very little use of computer-based management information systems (MIS) at MBS, with most audit management and coordination still conducted through paper systems. As remarked above, this system looks less than robust. Some information on import clients and products are kept on Excel spreadsheets, but there are no plans to computerise all the other MBS services. A computerised MIS for MBS’ laboratory was considered but deemed too expensive.
Implementing Malawi Standards

Inspection and certification services are undertaken by MBS’ Quality Assurance Services Department, which operates product and service certification schemes to ensure that both local and imported goods and/or services comply with quality requirements. These services are offered through the following schemes:

1. Permit Scheme (the key scheme currently relevant to fish and fish products).
2. Designation Scheme.
3. Imports Quality Monitoring Scheme.
4. Exports Quality Certification Scheme.

Permit Scheme: This scheme certifies products which comply with specifications established under Malawi Standards (e.g. the five fish specific standards listed on the previous page). Under the scheme, products covered by specific Malawi standards are inspected periodically until the products consistently comply with the relevant standards. At this point a Permit Certificate is issued to allow the use of the MBS Quality Mark.

The only organisation in the fisheries sector who are currently certified are Maldeco. They were originally certified for MS 21 (2002) (despite not meeting the requirements for HACCP) and then for the subsequent fish product specifications for frozen (MS 115, 2002), smoked (MS 117, 2002) and then fresh fish (MS 770, 2007).

Maldeco renews its certificate every two years as required by MBS. It is also subject to regular quarterly inspections. The evidence indicates some inconsistencies in the way in which certification is approved and it appears that interpretation of standards can vary.

Inspections are usually undertaken by a pair of auditors. All auditors are, as required by the MBS Act, staff members of MBS and formally appointed as an inspector by the Minister. The audit team is assigned a series of audits on a particular route over the duration of a week. These audits are not organised for any particular sector, so the auditor may be expected to cover highly different audits e.g. a biscuit factory and then a cement factory. This is logistically efficient, but means that it is difficult for auditor to specialise in any particular area. However the main focus (around 60% of MBS’ audit activities) is with the food sector in general.

This is reflected in the organisation of the Quality Assurance Services Department, which is not organised along sectoral lines (unlike the Standards Development Department). The pool of active auditors is quite small – between 10 and 20 – and is drawn from throughout MBS, not just the QA Services Department. There is no team approach for auditing – for instance no one is designated as a Lead Auditor.

1 It is a criminal offence under the Malawi Bureau of Standards Act (Cap. 51.02) of the Laws of Malawi to display the MBS Quality Mark without a current and valid permit issued by the MBS.
The team was shown the paper files for Maldeco (but not made privy to the actual content, which is confidential between Maldeco and MBS). We have a number of important observations:

1. Record keeping appears to be very haphazard. The files contained a mixture of MBS inspection result letters, laboratory analyses and Corrective Action Requests (CARs). However there was no systematic, chronological recording of events, and many of the files had a mixture of different audits (despite each file being designated against a single standard).

2. Much of the paperwork appeared to be missing. Given that there are meant to be four inspections per year for each standard, the files appeared very empty.

3. There are no formal management information systems being used to coordinate and respond to the auditing of certificate holders. The entire system is paper-based with no continuity of case files.

4. Any external auditor would find it very difficult to track sequential events or to determine if any instance of non-compliance had been correctly notified and dealt with.

**Designation Scheme:** This scheme certifies services offered to clients that comply with service standards such as Malawi Standard MS 21: Code of Hygienic Conditions for Food and Food Processing Units. Under this scheme, units offering food services covered by specific Malawi Standards are inspected periodically and when their services consistently comply with relevant standards, they are certified. A Designation Certificate is then issued for display in the complying premises.

**Imports Quality Monitoring Scheme:** The Imports Quality Monitoring Scheme (IQMS) was established in 1993 with the objective of protecting the public/consumer in ensuring that imported products are monitored for fitness of use (quality) and that they do not cause safety or health hazards to humans, animals or damage the environment and in turn provide a level playing field for similar products made in Malawi. Import batch certificates are issued to complying consignments and non-complying consignments are denied entry based on critical nature of the non-conformity.

**Exports Quality Certification Scheme:** The Exports Quality Certification Scheme (EQCS) was established in 1990 with the following objectives:

1. To establish base facilities and infrastructure of a National Agricultural Export Quality system.
2. To ensure that agricultural exports meet minimum quality requirements for Malawi and importing countries.
3. To improve and raise the quality level of agricultural exports.
4. To assure exporters that their agricultural exports comply with Malawi Standards and foreign standards requirements.

Through the EQCS, products meant for export are inspected and tested for compliance with the buyers’ specifications. An export certificate is issued for a complying consignment. Agricultural products certified include tobacco, tea, cowpeas, chillies, macadamia nuts, chickpeas, soya beans, sunflower seed and kernels, guar meal, toordhall, hides and skins, peri-peri sauce, cashew nuts and rice.

As there are no formal fish or fish product exports at present, they have not been included in any EQCS activities to date. However they are eligible for inclusion if the demand exists.
**Overlaps with other sectors**

One key issue is the lack of coordination of food safety legislation and jurisdiction in Malawi. Whilst it is accepted that MBS has the legal mandate to establish food safety standards on a national basis, this is not an exclusive arrangement. For instance, local government law allows city councils to develop their own byelaws for licenses premises e.g. restaurants and markets. Based on this, they have the right to inspect and audit against the byelaws, including assuring food safety. Attempts by MBS to encourage the use of MS 21 and other Malawi Standards by other government departments have met with resistance. Even the Ministry of Agriculture has a Meat and Meat Products Act (1968) which includes standards for pasteurised milk which are at variance with the MBS standards.

There are policy instruments which could be used to improve coordination and compliance with the MS. For example, any statutory body issuing certificates of quality (e.g. certifying product fit for export) could require export producers to be accredited to the relevant MS. However, this would be no substitute for a thorough review of food safety legislation and governance in Malawi which could identify and remove such duplications and contradictions (see Section 2.3.2). A clear definition of the roles of the various players in food safety and product quality is essential as is a clarification of the way in which they would interact to ensure the production of safe fishery products.
Main findings and recommendations (MBS Audit Capabilities)

Key findings

- MBS is the legally mandated organisation in Malawi to establish standards for products and processes in Malawi, and to audit against these. However other organisations can, if suitable accredited, audit against MBS standards.

- In the absence of overarching legislation on food safety in Malawi, a number of other government departments have also established standards relevant to food safety (e.g. local government byelaws for market & restaurants) which may overlap key MBS standards e.g. MS 21.

- MBS has separate departments for (i) standard development & (ii) inspection. This provides some separation between these conflicting activities, but in practice there is little division e.g. standard development staff often work as auditors.

- MBS assets (offices, vehicles and staff) are mainly based in Blantyre – this results in logical challenges in reaching the central and northern areas of the country.

- MBS is a ‘commercial parastatal’ organisation and therefore does not receive government funding and is self-financing.

- MBS is itself not accredited to certify against any ISO standards and therefore conducts what it calls “non-accredited certification” for the time being.

- Standard development is a participatory process, with wide stakeholder coverage (via the Technical Committees).

- The fishery product specification standards are aimed at commercial organisations and are therefore inappropriate for the vast majority of (artisanally-produced) fish products in the Malawi supply chain.

- The fishery product MS are in need of revision, at least to bring them in line with current CODEX standards. They do not cover the entire supply chain adequately and there is a need to expand their coverage to such areas as fish landings and fishing vessels. The MS do not make adequate reference to the need for drinking water compliant with MS 214 to be used for all handling and processing of fishery products, including the production of ice. The MS do not provide sufficient direction on standards for cleaning and sanitation. There will be a need in the near future to develop a series of MS for aquaculture to cover the quality of products from aquaculture, the production, storage and use of aquaculture feeds and possible setting environmental standards.

- There is currently no Malawi Standard for dried fish, as this was presumed to be an artisanal product without a demand for certification. However there are now some improved solar driers intending to sell to the multiple retail market.

- MBS ‘Permit Certificates’ are valid for two years and subject to quarterly auditing.

- MBS auditors are assigned a week long ‘audit route’ and are required to audit a variety of different products and services. There is no specialisation amongst MBS staff (e.g. for food safety as opposed to materials).

- MBS is largely paper-based and, based on a limited review, could substantially improve its record-keeping. There does not appear to be any systematic, chronological recording of events (e.g. inspections, CARs and responses).
As there are negligible formal exports, MBS’ Exports Quality Certification Scheme (EQCS), whilst it does include fisheries products and has not been used for fish exports to date.

Key recommendations

- There is a real need for over-arching coordination of food safety actions in Malawi, probably through some form of a Food Safety Act, in order to clarify standard development and inspection responsibilities throughout the food supply chain.
- MBS needs to consider separating its standard development and certification activities in order to reduce the potential for conflicts of interest. The South African Bureau of Standards might be a useful institutional model.
- The existing fish product standards have a number of flaws and should be revised to bring them in line with the latest CODEX and regional (COMESA/SADC) standards and regulations.
- The widening of coverage of MS 21 to include all parts of the supply chain (transport, catching & storage) should be considered or new MS should be written to cover these areas for fishery products. New or revised MS should include specifications for expected standards for cleaning and hygiene and bring in a requirement for verification of sanitation procedures.
- A set of standards should be developed for aquaculture which should, as a minimum, cover the quality of products from aquaculture and veterinary medicine residues.
- A set of standards should be developed to cover the sourcing, manufacture, storage and use of aquaculture feeds.
- A new standard for dried fish should be considered to enable those operating improved drying techniques to access higher-value markets.
- When these product specification standards are gazetted, there should be a clear and practical derogation for parts of the supply chain that cannot currently achieve these standards. This derogation should be based on a detailed analysis of current practises and conditions throughout the fisheries supply chain. Furthermore steps should be put in place to ensure that the exempt parts of the supply chain are not commercially disadvantaged and that mechanisms are put in place to raise standards e.g. via codes of practise and appropriate extension and training efforts.
- MBS audit tasking is revised to cover broad categories e.g. ‘food and agriculture’, ‘engineering and materials’, and ‘chemicals and textiles’. A cadre of inspectors should be trained to specialise in these areas and be tasked accordingly.
- A risk-based approach might be developed for food safety audit tasking based on the risk of the product being produced and the level of compliance of the food business involved.
- MBS internal management information systems need considerable review and updating to bring them into line with appropriate international standards. They could benefit from an appropriate level of computerisation to improve record-keeping, information compilation (e.g. to link audit events), and management information integration across MBS. Although this is a major task, in our opinion it is a major pre-requisite to MBS gaining accreditation to certify against the major international standards.
2.2.2 Review MBS training curricula (Task 2.3.2)

This task will examine the current training curricula of MBS and assess its relevance to the needs of MBS in inspection and certification of fishery products and the training of target groups in GoM and the private sector in the application of Malawian standards for fishery products.

The MBS internal training programme for new recruits is included in Appendix H. It has a number of shortcomings with regard to training auditors in food safety and quality inspections. Foremost among these is the very limited time devoted to HACCP training which is not enough to raise awareness for those unfamiliar with HACCP, let alone to take them to a level where they would be able to conduct a HACCP audit. Considering it would take up to 7 days to get people to a level where they can understand HACCP and analyse a HACCP programme, it is clear that more training would be needed to ensure inspectors could assess compliance with MS21. To be able to audit a HACCP programme would probably require another 4-5 days training in HACCP audit.

The short time devoted to sampling is also a matter of some concern. To give inspectors an understanding of the statistics behind sampling and the interpretation of results would require several days of training for those unfamiliar with sampling statistics. Training in understanding the background and use of the CODEX guidance on sampling (CODEX STAN 234-1999, CAC/GL 50-2004, XOT 13 AQL6.5) would be a substantial training course in itself. Training would also need to differentiate between sampling for quality control and sampling for food safety purposes, especially where mandatory sampling is laid down in legislation.

MBS offers training to industry, and these courses are advertised in national newspapers. Without carrying out TNA for the wider industry and without carrying out testing of the effectiveness of the training, it is not possible to fully examine whether such courses are appropriate. However, through examination of the brief course details (see Appendix H), the courses appear to be similar to those offered in the UK for all levels of industry from shop floor workers to senior management. The course outlines and the course duration appear to be appropriate for the learning involved. None of the courses are specific to fisheries but some would be suitable for training staff and management involved in fish handling and processing or its management. These courses could fill a key gap in capacity elsewhere in Malawi. They would also be ideal for short course training for anyone involved in inspection of fishery products such as MBS auditors requiring in-depth training for the inspection of food premises and any members of the planned DoF inspection unit for fisheries products.

Key findings and recommendations

Key findings

- The MBS internal training course for new recruits does not provide a sufficiently detailed knowledge to auditors in food safety controls and audit. Unless new recruits arrived with substantial training of and experience in food safety controls, the training could not provide them with adequate skills to audit to MS21.
- MBS training offered to industry provides a range of courses to cover all aspects concerned with ensuring safe food production and quality control from workers to managers. Uptake for training courses from industry may be limited indicating a need for awareness-raising to educate enterprises of the importance of food safety and quality training.
• Despite offering relevant skills training, MBS does not currently target other government agencies such as DoF for its training courses. These could fill a gap in training from elsewhere, such as MCF.

**Key recommendations**

• Officers responsible for audits at food processing establishments should be given much more in-depth training in HACCP to audit level.

• Officers conducting sampling for quality or food safety controls at food processing establishments should be given detailed training in food sampling statistics and methodology.

• MBS should offer its short course training to key government agencies such as DoF as a means of upgrading the skills and knowledge of their inspectors.
2.3 NEEDS IDENTIFICATION: DEPARTMENT OF FISHERIES (ACTIVITY 2.4)

The Department of Fisheries (DoF) was established in 1946 and is the government department mandated to protect and conserve the national fish heritage of Malawi. The activities of the Department are guided by the Fisheries and Aquaculture Policy of 2001, the Fisheries Conservation and Management Act of 1997, and the Fisheries Strategic Plan that outlines the different strategies for the development and management of the sector. This activity comprises three main tasks:

2.3.1 Institutional assessment of food safety governance in the fisheries sector (Task 2.4.1)

As mentioned earlier in this document, the ToR alludes to a complex and often over-lapping institutional environment. The main purpose of this task will therefore be to examine the mandates, capacity and experience of the different organisations contributing to food quality assurance and safety of fisheries products in Malawi and develop a Venn-based institutional map (e.g. identifying overlaps and gaps). Based on this, we will recommend changes to address these. A primary focus will be on DoF’s role - in this case we will identify the limitations currently placed on DoF in meeting their commitments and propose solutions to both institutional weaknesses as well as the capacity-building needs involved.

**Institutions involved in food safety in Malawi**

A number of different government ministries, departments and private sector bodies have a role in ensuring food safety in Malawi. The key ones are as follows:

**Table 3: List of organisations involved in fisheries-related food safety in Malawi**

<table>
<thead>
<tr>
<th>Area</th>
<th>Organisation</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector</td>
<td>Ministry of Agriculture, Irrigation &amp; Water Development</td>
<td>Permanent Secretary level</td>
</tr>
<tr>
<td></td>
<td>Agriculture Development Divisions</td>
<td>Department of Fisheries</td>
</tr>
<tr>
<td></td>
<td>Malawi Bureau of Standards</td>
<td>City Councils</td>
</tr>
<tr>
<td></td>
<td>Regional Councils</td>
<td>Environmental Health Services</td>
</tr>
<tr>
<td></td>
<td>Malawi Revenue Authority</td>
<td>Responsible for the Border Inspection Posts.</td>
</tr>
<tr>
<td>Private sector</td>
<td>Beach Village Committees</td>
<td>Hygiene &amp; fish preservation on vessels and at landing sites</td>
</tr>
<tr>
<td></td>
<td>Fisher associations</td>
<td>Good hygienic practise &amp; HACCP</td>
</tr>
<tr>
<td></td>
<td>Commercial fisheries &amp; aquaculture companies</td>
<td>Hygiene and quality assurance</td>
</tr>
<tr>
<td></td>
<td>Fish transporters (no apex body in Malawi)</td>
<td>Hygiene and quality assurance</td>
</tr>
<tr>
<td></td>
<td>Multiple retail sector (Malawi Confederation of Chambers of Commerce &amp; Industry)</td>
<td>Hygiene and quality assurance</td>
</tr>
<tr>
<td></td>
<td>Consumer Association of Malawi</td>
<td>Consumer awareness raising</td>
</tr>
</tbody>
</table>
The relationship between these institutions is shown in the figure below and a description of the main actors and their mandated role in fisheries-related food safety is provided over the subsequent pages.

**Figure 1: Overview of institutions, organisations and sector actor involved in food safety in fisheries in Malawi**
A. Office of the President and Cabinet

The Office of the President and Cabinet (OPC) is responsible for providing advice and support to the President and Cabinet as well as providing oversight leadership in the Public Service. OPC derives its mandate from the Constitution of Malawi, the Public Service Act and other legal instruments. It provides strategic leadership in development of Government policies and programmes, and guides public entities – such as the lines Ministries – in developing Government strategic priorities, practices and implementation of programmes.

B. Ministry of Agriculture, Irrigation and Water Development

DoF has been a department of the Ministry of Agriculture, Irrigation and Water Development (MoAIWD) since 2007. It’s role in terms of DoF’s functions and activities are mainly in terms of policy development and coordination (via meetings at Permanent Secretary level), as well as via the Agriculture Development Divisions at regional level which assist coordinate the activities of MoAIWD amongst Districts. It is noted that the Department of Animal Health and Livestock Development (DAHLD) is the national Competent Authority for disease reporting (FAO, 2008b).

C. Department of Fisheries

The Department of Fisheries (DoF), established in 1946 by an Act of Parliament, is a government department that is mandated to protect and conserve the national fish heritage of Malawi, through appropriate research and application of appropriate control mechanisms. Since then, it has carried out various research experiments and provided guidance based on sound technical foundation for the development of the fishery industry in Malawi. The activities of the Department are guided by the Fisheries and Aquaculture Policy of 2001, the Fisheries Conservation and Management Act of 1997, and the Fisheries Strategic Plan that outlines the different strategies for the development and management of the sector. A revised Fisheries Policy for 2012 to 2017 is in the final stages of preparation. DoF has a number of vision, mission and departmental goal statements:

Vision: To be a dynamic, high performance, consultative and client focused Department that promotes, builds and ensures sustainable development, utilization and management of the fisheries resources in Malawi.

Mission: To provide framework conditions and excellent services for the maximization of socio-economic benefits through sustainable utilization and management of capture fisheries and increased aquaculture production.

Departmental Goal: Provide professional services to ensure sustainable fisheries resource utilisation and enhanced aquaculture through principles of good governance.

Policy towards food safety: The existing (DoF, 2001) National Fisheries and Aquaculture Policy has some emphasis on food safety under a broad ‘Fish Marketing Goal’ (“To promote production, processing, distribution and marketing of good quality and safe fish and fish products of Malawi for local and export markets”). This includes (i) the promotion of post-harvest technologies that ensure improved fish products and (ii) the promotion of quality control standards for fish and fish products. This latter element includes an intention to (a) develop quality standards that ensure safe products and comply with the MBS and EU & USA standards and (b) disseminate information on fish quality standards and promote quality control measures and ensure that fish and fish products comply with regulations.
The draft *Fisheries Policy 2012 – 2017* (DoF, 2011) has a much stronger emphasis on food safety. Fish quality and value-addition is one of five 'Policy Priority Areas'. It recognises that at present fish quality standards do not cover all fish products, that there is no control over hygienic conditions in landing places and that there is no competent authority to effect controls on fish quality aspects. The policy has three areas of focus:

1. Development of appropriate human capacity and infrastructure for fish handling, processing and value addition.
2. The provision of quality fish for the local and export markets.
3. Government in collaboration with other partners will promote adoption of technologies and practices that will enhance quality, hygiene and sanitation standards for fish and fish products.

The implementation plan associated with the draft *Fisheries Policy 2012 – 2017* includes the following (in chronological order):

- Guidelines on safety and fish quality developed by 2014.
- Post harvest fish handling facilities operational by 2014.
- Inspectorate Unit trained in safety and fish quality issues by 2015.
- ‘Fish Quality Inspectorate Unit’ established by 2016.
- Fish quality standards developed for 6 fish products to domestic & export markets by 2017.
- Post harvest losses especially for fresh low value fish species (Usipa, Matemba and Utaka) decrease by 20% from 40% during rainy season (no target date).

**Legislative mandate in food safety:** The mandate of DoF to implement these policies is unclear, as is the role of other legislating bodies such as the Ministry of Health (MoH). The problem originates from the old legislation which is currently in force for both DoF and MoH in the form of the Fisheries Conservation and Management Act 1997 and the Public Health Act 1981, neither of which foresee the need for the introduction of modern hygiene and food safety controls in Malawi. While both Acts give the relevant Ministers powers to enact further legislation, this has not happened for food safety in general and for fishery products in particular. It is currently difficult to tell from the legislation which Ministry may have powers to regulate fishery products at the moment and in the immediate future. Policy documents under development by both Ministries appear to contain similar objectives for food safety (although DoF proposals are restricted to fishery products) and proposals by DoF to amend the Fisheries and Conservation Act to give the Department more powers to regulate quality and food safety in fishery products appears to conflict with proposals from MoH. This is analysed in more detail in Section 2.3.2.

**Structure and Organisation:** DoF is one of ten functional departments of the Ministry of Agriculture, Irrigation and Water Development (MoAIWD). DoF is led by the Directorate of Fisheries and his Deputy Director. There are currently three main operational departments: (i) *Fisheries Extension & Training*, (ii) *Planning, Monitoring & Evaluation* and (iii) *Fisheries Research* (see Figure 2 overleaf). At present there is no specific department or section within DoF with a responsibility for food safety issues, and there is no specific cadre of fish quality inspectors, although inspection is in the job description of some fisheries officers (see next section). This reflects the 2001 policy approach that shows only a limited emphasis on fish quality assurance.
The Malawi Public Service Commission is currently working with DoF to conduct a ‘functional review’ of DoF’s activities and proposing changes to its structure (Malawi Government, 2011). The consultants have seen an early version of the results, but this does not indicate any real progress in terms of developing an institutional capacity for fish quality management. However it must be emphasised that the 2011 draft is some way behind current DoF thinking and is likely to be subject to considerable change.
Discussions with Dr. Steve Donda (the Acting Director of Fisheries) shows DoF is now moving towards developing its own fish quality assurance capability. This is in line with the high priority given to this subject in the draft *Fisheries Policy 2012 – 2017* (DoF, 2011). The main intention is as follows (Dr. Steve Donda, DoF, pers. comm., 26 April 2012):

- A focus on the local and regional fish supply chain (inc. cross-border imports and exports);
- Development of a cadre of fisheries inspectors. 2-3 would be based at either MCF or a location near Salima, with a further 10 to 12 persons based at district level and at border inspection posts (BIPs);
- This initial cadre would act as a training group to expand DoF’s inspection capability over time; and
- This is currently a concept – there have been no firm institutional, operational or financial details developed to date.

**Current activities in fisheries-related food safety:** as there is no firm legal provision for DoF officers to be involved in fish quality assurance or food safety regulation in Malawi, current DoF efforts related to ensuring food safety in the fisheries supply chain are inconsistent at all levels and tend to focus on extension. Food safety activities are included in a number of the job descriptions of DoF staff (DoF, 2004), mainly focusing on ensuring that fish quality is in line with the MBS standards (see table below). However, as discussed in Section 2.2.1, these standards are only really appropriate for the commercial sector at present, and thus cannot be applied to the vast majority of Malawian fisheries production.

**Table 4: Fish safety & quality assurance roles in current DoF job descriptions**

<table>
<thead>
<tr>
<th>Post</th>
<th>Stated duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Assistant Fisheries Officer</td>
<td>Inspect the quality of fish caught; ensure that the safety standards as stipulated by the MBS are adhered to by fish sellers and processors; and enforce fisheries regulations.</td>
</tr>
<tr>
<td>Assistant Fisheries Officer</td>
<td>Inspect the quality of fish caught and ensure that the safety standards as stipulated by the MBS are adhered to by fish sellers and processors.</td>
</tr>
<tr>
<td>Senior Fisheries Assistant</td>
<td></td>
</tr>
<tr>
<td>Fisheries Assistant</td>
<td></td>
</tr>
</tbody>
</table>

Source: DoF, 2004

Discussions with district level staff suggest that the main emphasis of current DoF activities in food safety is through the provision of informal advice. Like the Ministry of Health Environmental Health Officer inspection activities (see next sub-section), this is based on ‘Good Hygienic Practises’ (as opposed to the rather restrictive MBS fish specifications standards) and left at the discretion of the inspector on the spot. However, unlike the MoH EHO’s, very few DoF officers have any detailed training in food quality control.

**Organisational capacity-building in food safety issues:** There is currently a major problem in capacity for DoF to enforce or advise on food safety issues. In part this is due to the understaffing which affects all parts of DoF but in the main, it is due to a severe shortage or relevant skills in DoF. The tradition of recruiting staff through the training programme at MCF will have contributed to the skill shortage as the training programme there has too little emphasis on food safety and post-harvest issues. While in the short term, some capacity could be built by technical assistance or short course training, a longer term...
approach is needed to build and maintain an adequately trained unit capable of carrying out inspection and certification of fishery products with a high degree of competence. Building training capacity and expanding existing courses to offer a much greater emphasis on food safety is one option but that would require considerable development of the training capacity at MCF which may not be possible in the short term. A more immediate strategy to build capacity at DoF would be to recruit specialists in food safety (see Section 2.3.1) or to send DoF staff for intensive training on (e.g.) MBS short courses. This is explored in more detail in Section 2.3.3.

D. Ministry of Health

The Ministry of Health headquarters is at Capital Hill in Lilongwe. It has major hospitals in all the three regions of the country. The Ministry seeks to achieve health for all Malawians by delivering health services and disseminating health information to the general public. These endeavours are achieved through the ministry’s Mission statement.

**Mission:** The current overall policy goal of the health sector, which continues from the previous National Health Plan (1986-1995), is to raise the level of health status of all Malawians by reducing the incidence of illness and occurrence of death in the population. This will be done through the development of a sound delivery system capable of promoting health, preventing, reducing and curing disease, protecting life and fostering general well being and increased productivity.

**Policy towards food safety:** whilst much of the MoH’s current activities are still based on the previous National Health Plan (1986-1995) and a more recent Health Sector Strategic Plan (2011 – 2016). However a more pertinent indication of MoH policy in food safety is the draft National Environmental Health Policy (MoH, 2010). ‘Food safety and hygiene’ is one of four priority areas in this policy document and includes a number of pertinent policy statements including stating that Government shall:

- Give priority to food inspections and food premises auditing.
- Ensure that food premise owners comply with food premises requirements.
- Ensure that food handlers are not transmitting food borne diseases.
- Ensure that food handlers comply with dressing and behaviour ethics in food establishments.
- Certify all food establishments to ensure food safety and hygiene.
- Provide health certificates for exported foods.
- Ensure that all food products being imported into Malawi have health certificates from countries of origin.
- Ensure that foods sold in Malawi are of required quality.

This draft policy does recognise the importance of cross-sectoral coordination and that it should be “based on co-ordination and consultation within the Ministry of Health, multilateral organisations, relevant government agencies and non-governmental organisations and communities”. Implementation of this policy would largely be the responsibility of the Department for Environmental Health Services of MoH at both national and district levels.
It is notable that whilst the draft policy recognises the roles and responsibilities of a number of named government organisations in environmental health, the Ministry of Agriculture is not one of them. Implementing partners for food inspections are MoH, MBS, the Ministry of Tourism and the Ministry of Local Government. However MoAIWD\(^2\) is included as an implementing partner in (i) preparing an inventory of food premises, (ii) developing standards for conducting food inspections and premise auditing and (iii) reviewing the available food laws and plans.

This draft policy has been under development for a number of years, and is now considered fairly complete (Young Samanyika, MoH Environmental Health Services Programme, pers. comm., 27 April 2012).

**Legislative mandate in food safety:** The role of MoH in ensuring food safety is laid down in the *Public Health Act (1948 as amended 1981)* which was written at a time when attitudes and approaches to food safety were very different. The Act is mainly concerned with the protection of human health through the control of the spread of diseases and with the prevention of the spread of disease through infected animals. The protection of foodstuffs is covered in Part XII of the Act but the provisions are very limited. Section 75 (k) provides for the regulation of markets but no specific conditions are set. Section 143 does provide the Minister with powers to make such Rules as are needed under the powers of the Act and this appears to be the main basis for the wider coverage of foodstuffs. The lack of further development contributes to the uncertainty and overlap in the enforcement of food safety.

**Structure and Organisation:** The Ministry of Health has four main directorates (see Figure 1), including one for Preventative Health Services. This particular Directorate has four sections headed by a Deputy Director, (i) Health Education, (ii) Malaria Control, (iii) Immunisation and (iv) Environmental Health Services. The Environmental Health Services Section has a number of programmes, the most relevant of which is the one for ‘public health and hygiene’. This programme is staffed by an Environmental Health Officer (EHO) and an Assistant EHO.

The strength of MoH lies in its extensive presence at District and lower levels. There is a Preventative Health Section in each district office and associated staff within each Health Centre. There are around 15 staff at district level who may be involved in environmental health inspection activities, of which around five will be graduates (probably in environmental health, see later in the section) and the rest educated to at last diploma level.

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2 In the draft *National Environmental Health Policy*, MoAIWD is referred to as the Ministry of Agriculture and Food Security.
Current activities in fisheries-related food safety: According to MoH (Young Samanyika, MoH Environmental Health Services Programme, pers. comm., 27 April 2012), MoH’s environmental health responsibilities covers the fully supply chain from production to export, in both public and private facilities. However in reality most inspection activities cover the retail end of the supply chain. Standard development is recognised by MoH to be the responsibility of MBS – however much of MoH’s food inspection is based on ‘Good Hygienic Practises’ and left at the discretion of the inspector on the spot. The inspectors – mostly EHOs and AEHOs – work from the District offices and Health Centres and cover all rural and urban centres, apart from those with designated City Councils (where the council has its own separate Department of Health and Social Services and Environmental Health Section).

Organisational capacity-building in food safety issues: The fact that most MoH EHOs are recruited as graduates or hold a diploma in environmental health means that the capacity development needs are very much less than for most other institutions. As well as having staff with good qualifications, MoH has sufficient numbers of employees to achieve good coverage over the country. Arguably, EHOs may be in a position to contribute towards building capacity in other institutions.

Ministry of Local Government and Rural Development

Legislative mandate in food safety: The main legislation used for food safety by local government is the Public Health Act (1948) and various other pieces of legislation mainly the Local Government Act (1998) (see Section 2.1 of the legislation review in Appendix B). This is particularly applicable to the cities, where they may be supplemented by City Council byelaws. Under the Local Government Act, local governments may authorise and inspect premises where food (including fishery products) are manufactured, prepared or sold, although the Act does not make it clear exactly what purpose such inspections should serve and there are no indications that food safety, cleanliness and hygiene are part of the mandatory controls required. The Act (Second Schedule, Section 6) appears to give local authorities a duty to keep areas clean and this appears to apply to any area under their control, including markets.

Structure and Organisation: In respect to food safety, the Ministry of Local Government and Rural Development (MoLGRD) operates at two levels:

City Level: at city level, local government is entrusted to the City Councils of Blantyre, Lilongwe, Mzuzu and Zomba. In each case there is a Department of Health and Social Services, which contains an Environmental Health Section.

District Level: at District level, environmental health control is entrusted to the Ministry of Health. MoH has a considerable presence at both district level and Health Centre Level (see above), with dual control from MoH and the District Councils (headed by the District Commissioner).

Current activities in fisheries-related food safety: Information on the role of local government in regulating food safety was obtained through secondary sources. The main role is in the regulation and inspection of public markets; a role which used to be carried out by DoF. Inspection of a market and feedback from DFOs indicates that this role is not being carried out adequately. This is a serious gap in enforcement as it affects consumer safety directly.
Organisational capacity-building in food safety issues: The role of local governments in ensuring the safety of fishery products appears to be limited. While local authority inspectors appear to have the capacity to conduct food safety inspections and ensure markets are clean and sanitary, this is not being done to a satisfactory standard. This does not seem to be due to a lack of capacity as markets have local government staff in attendance while markets are open. It may be less of an issue in capacity building and more of an issue of poor governance.

E. Ministry of Industry and Trade

The Ministry of Industry and Trade (MoIT) is divided into three main operational departments.

- The **Department of Industry** is responsible for promoting industrial development and technology transfer, including rural industrialization.
- The **Department of Trade** includes two main divisions: Foreign Trade, which is responsible for trade negotiations with bilateral, regional and multilateral partners; and Domestic Trade, which is responsible for regulation in the domestic market.
- The **Department of Private Sector Development** includes a Policy and Business Development Division responsible for improving the private sector enabling environment; a Small & Medium-sized Enterprises (SMEs) Division responsible for promoting small-scale enterprise development; and a Cooperatives Division responsible for promoting the development of cooperatives in Malawi.

The **Malawi Bureau of Standards (MBS)** is one of two agencies under the Policy and Business Development section of the Department of Private Sector Development.

Policy towards food safety: MoIT’s Department of Private Sector Development has a number of strategic objectives and strategies that related to this project. These include:

**Strategic Objectives**

- To promote and develop small and medium enterprises and cooperatives societies capable of producing high quality goods and services for both domestic and export markets;

**Strategies**

- **Policy and Business Development Division**
  - 10. Enhance Malawi’s competitiveness in value added production;
  - 19. Promote and develop product and service quality and standards; Coordinate negotiations and signing of investment promotion and protection agreement (IPPsAs) and Double Taxation Agreement (DTA);

- **Small and Medium-sized Enterprises**
  - 1. Creation of a conducive environment for empowerment of SMEs;
  - 12. Increase export market opportunities for small-scale enterprises;
  - 14. Create an enabling environment for development of MSMEs;
  - 15. Promote programmes in quality and standards for MSMEs;
  - 17. Promote MSMEs to engage in innovative enterprises.

- **Cooperatives promotion**
  - 3. Enhance product development, market access and bargaining power;
MoIT’s *The Case for a National Export Strategy* (2005) considers that Malawi’s fisheries are a ‘declining sector’. They state that “*In terms of fisheries, Malawi is well endowed with fresh water resources, biodiversity, high value aquarium fish, a good skills base, commercial fishing capacity, and a unique product (chambo). However, in spite of strong international demand, Malawi’s exports in this sector have struggled due to depleted fish stocks, poor ecosystem and environmental management, poor brand marketing, poor SPS conformity, lack of cold storage facilities (and uninterrupted power supply); limited air services for export and lack of deep water fishing technology*”.

The Ministry of Industry and Trade have produced a draft ‘*National Quality Policy for Malawi*’ (MoIT, 2011). This draft policy proposed a radical shake-up of quality assurance in Malawi, principally to address the current disparities and overlaps that have developed as each line ministry has developed its own approaches for quality assurance. The main elements of this policy include:

- Development of a technical regulation framework that will be followed by all the Ministries and their agencies in the development and implementation of technical regulations or compulsory standards, replacing the disparate regimes currently in place.
- Re-establishment of a National Quality Infrastructure (NQI) that will provide affordable standards, metrology, accreditation and conformity assessment services to the authorities and private sector alike.
- Re-engineering of the Malawi Bureau of Standards, establishment of a Malawi Metrology Institute and a Malawi Accreditation Framework as the core functions of the Malawi NQI to serve all Ministries, authorities and the private sector alike.
- Review of the laboratory services provided by the public sector, with subsequent coordination to establish a viable and affordable testing system, minimize overlaps, build capacity were required and ensure that the skilled personnel are available.
- A national accreditation system will be developed through cooperation with other accreditation bodies, especially the regional system established through SADCA, with a long-term objective of establishing an independent national accreditation body based on national needs; and
- Encourage and seek the participation of independent quality associations and the Malawi Confederation of Chambers of Commerce and Industry to develop a pool of quality auditors and resource persons required for effective conformity assessment services.

**Legislative mandate in food safety:** This is dealt separately under Section 2.2.1 as the main mandate is the MBS Act.

**Structure and Organisation:** the Structure and function of MBS, which is MoIT’s main subordinate organisation involved in quality assurance, is dealt with under Section 2.2.1.

**Current activities in fisheries-related food safety:** the current activities of MBS, which is MoIT’s main subordinate organisation involved in quality assurance, is dealt with under Section 2.2.1.

**Organisational capacity-building in food safety issues:** Institutional capacity building is dealt with under Section 2.2.1 as MBS is the main body interacting with the fisheries sector.
Main findings and recommendations (Institutional assessment of food safety governance in the fisheries sector)

Key findings

- At present the Department of Fisheries (DoF) lacks both the mandate and the capability to provide quality assurance services in the fisheries sector. At present DoF activities in food quality control are limited to informal advice to sector participants on achieving good hygienic practices.

- However a new Fisheries Policy for 2012 to 2017 is currently being finalized and gives much greater emphasis on the need for quality assurance and value-addition.

- Legislation is being drafted which will update and expand the range of coverage for the controls on food safety and quality for fishery products. The existing legislation has many gaps and is in urgent need of review and updating. The current draft of provisions for food safety and quality to be incorporated into a revised Fisheries Conservation and Management Act are based on EU food safety legislation. It is unnecessary to bring in such strict controls at the moment as there is little prospect of the commercial sector being able to export to the EU in the medium term and it would be very expensive for GoM to implement the controls required under EU legislation. It would be more realistic to take a staged approach to developing legislation in order to allow time to the public and private sectors to adopt and invest.

- There is an intention within DoF to develop a cadre of dedicated fisheries inspectors, although at present there is no legal or institutional capability to do so.

- The Ministry of Health (MoH), through its Environmental Health Services Division, is already engaged in on the ground food safety inspection. Furthermore it has a large number (c. 500) of EHOs trained to a good standard in food safety matters. A draft National Environmental Health Policy has ‘food safety and hygiene’ as one of four priority areas.

- The City Councils consider themselves responsible for public health in Blantyre, Lilongwe, Mzuzu and Zomba, although in reality there is little fisheries-specific activity e.g. at the fish area of public markets. The MoH EHOs represent local government environmental health assets at District and lower local levels.

- There is an overwhelming need for an over-arching ‘Food Safety Act’ in Malawi to provide a cross-sectoral agreement for the roles of different institutions in food safety throughout the supply chain. The basis for such a law is currently being drafted by MoH, but is at least two fiscal years away from completion. Without such a law, it is inevitable that there will be both jurisdictional gaps and overlaps, thus potentially compromising food safety in Malawi.

- The Malawi Bureau of Standards is widely recognised to be responsible for setting national standards, but - for fisheries food safety at least – these are not used by either MoH or the city council inspectors.
Key recommendations

- It is clear that (i) the current levels of fish quality control are poor, (ii) the existing Malawi standards are neither internationally accredited nor sufficient to ensure fish quality, and (iii) there is unlikely to be any significant demand for Malawian fisheries products in the EU and other international markets. Based on current trade patterns as well as discussions with DoF and the fisheries industry, it is suggested that DoF focus on national and cross-border fish quality for the time being.

- With the recent increased policy focus on quality control & value-addition, it is recommended that DoF develop the institutional capacity to actively engage in improving the quality of fish being produced in, exported from, & imported to Malawi. However it is noted that the new Fisheries Policy for 2012 to 2017 is still in draft form.

- There are a number of institutions with mandated roles in food safety assurance (including fish products), most notably (i) the Ministry of Health’s Environmental Health Services Division & (ii) the City Council environmental health sections. Therefore a clear agreement on which organisations are best suited to address food safety in the different part of the fisheries supply chain is urgently required. Cross-sectoral discussions, possibly as part of the expected stakeholder process in developing a national food safety act, need to be considered as an immediate next step.

- As part of these discussions it is worth considering the institutional location of a future ‘Competent Authority’ for assuring fish safety and hygiene. Options include DoF, other departments in MoAIWD and MoH. Whilst fish exports to the EU are not likely in the near future, the early designation of a Malawi Competent Authority (CA) would assist the development of a mature institutional system for fish quality assurance and open preliminary communication with the Food and Veterinary Office (FVO) in the EU.

- Once a clear role for DoF in fish quality assurance is agreed at a national level, this needs to be reflected in legislation to ensure that DoF is suitably empowered to carry out its agreed mandate.

- In the event that cross-sectoral consensus on institutional roles in food safety is not reached in the reasonably near future, DoF needs to consider its own role in food safety assurance on a unilateral basis. It is recommended that this review consider the existing competencies of other organisations in food inspection (e.g. MoH and the City Councils) and to focus on addressing the gaps that exist. Based on our observations, this is primarily the production end of the supply chain (e.g. vessels, landing centres, artisanal processing and transport), as well as border imports.

- Notwithstanding the above, on the basis that the current draft of the Fisheries Policy for 2012 to 2017 is approved in the near term, DoF will need to develop a functional unit to plan, direct and implement fish quality assurance in Malawi. Whilst the scope of these activities are dependent upon the role finally decided by DoF, this is likely to include (i) some form of fish safety and advisory section at central level, (ii) fish quality extension at district level, and (iii) a separate and strategically located inspectorate. See Figure 3 overleaf for an outline organization chart.

- The current Malawi Standards go some way to provide product and process benchmarks for commercial production. However there is an urgent need for similar benchmarks for artisanal capture fisheries and aquaculture production. Whilst formal standards may be inappropriate at this stage, some form of quantitative Codes of Good Hygiene Practice may be appropriate.
Figure 3: Recommended organisational structure for the Department of Fisheries
2.3.2 Review of existing food safety guidance & standards in Malawi (Task 2.4.2)

This task examined the food safety legislation in Malawi which is under the control of DoF and MBS and other relevant GoM bodies. The legislation was compared to the basic requirements for the delivery of safe and wholesome food to the local market and the needs of identified export markets (three COMESA/SADC). Non-legal guidance was examined for its relevance to local production, harvesting, and marketing conditions. To assist the consultants, a short consultancy was commissioned of the Contractor’s local partner, ANARMAC (see ToR in Appendix B and report in Appendix F).

See Appendix F for the review of legislation and report by ANARMAC.

The legislative framework for food safety and quality in Malawi is incomplete, outdated and in some cases, contradictory. There is an urgent need for a thorough review of food safety legislation and food safety governance to bring the legislation up to date and to ensure harmonisation of responsibilities for implementation and coherence of standards applied by different public bodies. The key powers of the MoH derive from the Public Health Act 1981, which is very dated and the content and powers do not fit with the current food production systems in Malawi. The Act is principally concerned with preventing unfit people from handling food and preventing unfit animals from entering the food supply chain. There are very few provisions for food safety measures as are stipulated by CODEX and no provisions for the regulation of a modern food processing industry. Similarly, the Fisheries Conservation and Management Act 1997, gives the Minister some powers under Section 3 (k) for the regulation and control of fishing operations including aquaculture, fishing, transportation, processing, marketing, exporting and importing and other operations ancillary thereto. However, enactment of this Section appears to have been mainly on the basis of the issuing of revisions to policy or other non-legislative means rather than through the issuing of new legal powers for DoF. This creates a considerable degree of uncertainty over the powers and responsibilities of the respective Ministers to regulate food safety and quality for fishery products.

Neither Act meets the basic requirements for foods safety regulation under international norms such as CODEX. As the legislative review (Appendix F) shows, the current legislation in Malawi would not meet the requirements for regional trade within COMESA or SADC. It is likely that once new COMESA harmonised standards for fishery products are introduced (planned for June 2012), Malawian products will not be able to meet the new standards. While the revision and wider implementation of MBS Standards could be used to demonstrate compliance, it is preferable that comprehensive food safety legislation be bought in with appropriate GoM inspection and certification of export food products. The current legislation and its enforcement do not ensure the delivery of safe and wholesome products to the Malawi consumer which is a matter for some concern given the importance of a high quality protein source such as fish to the national diet.

The Local Government Act (1998) provides very limited powers for local government to regulate food safety on the local level. While the powers include the licensing of premises where fishery products may be handled or sold, the lack of any guidance on sanitation and food hygiene standards means that any licence is unlikely to provide credible guarantees on the safety or quality of any products. The Act does require local governments to maintain cleanliness (this appears to mandate the cleaning of market areas), in practice, this is a power which is not exercised to an acceptable degree.
The lack of a comprehensive legal framework for food safety means that there are too many gaps in food safety coverage to detail, but the main areas are highlighted below:

- Key parts of the supply chain are not covered by any requirements for adequate hygiene standards including the key stages of fishing vessels and landing sites.
- Provisions relating to the use of ice and particularly the source of ice are very limited. These should be compulsory for at least the commercial sector.
- There are no provisions for the legislation of the structure, condition and operation of premises, including vessels and cold or chill stores.
- There are no controls on products for environmental contaminants or important food safety issues such as microbiology.
- There are no food safety controls on aquaculture products.
- There are no food safety controls on aquaculture feeds.

Some of the above are dealt with in the MBS Standards but, as their adoption is purely voluntary for fishery products, they cannot be seen as a legally enforceable provision, rather as a voluntary quality mark scheme. Gazetting of the MS would give them compulsory status and ensure a greater level of compliance with the revised COMESA standards (which would be expected to be incorporated into the MS).

The development of controls on aquaculture feeds would be desirable for preventing contaminants, prohibited substances or uncontrolled use of veterinary medicines in such feeds. Each of these can present a serious risk to the consumer, especially if consumed over a period of time. There is a general trend for feed manufacturers to be required to use HACCP or HACCP-based food safety systems as a means to ensure the production of safe feeds. This could be done by specific measures for aquaculture feeds such as a MS or by more general legislation on the production and use of animal feeds.

Local government inspectors took over responsibility for the inspection of fish markets from DoF. From the limited experience of the Inception Visit, they appear not to be fulfilling their responsibilities for market inspection and regulation. Markets are generally in poor condition with unacceptable levels of hygiene and cleanliness which will expose the Malawi consumer to an unacceptable level of risk. There is an urgent need to improve regulation at urban markets and for local authorities to use their powers to improve standards of cleanliness and hygiene.

Overall, it can be concluded that neither the legislation in place nor its implementation are satisfactory at the moment, leading to poor hygiene and cleanliness and potentially unsafe products at most stages of the supply chain (supermarkets have not been visited by the team). For this reason, it is clear that Malawi is in no position to be able to provide the guarantees expected by the EU Food and Veterinary Office for the export of fishery products to the EU. The MBS Standards do go some way towards meeting the EU food safety legislation requirements but they have a number of key areas which are not covered and, in the absence of a recognised Competent Authority (as defined in EU Regulation 852/2004) could not be enforced in a manner acceptable to the EU. It should also be borne on mind that no industry premises could meet the requirements for construction and operation, which are required under EU legislation and that setting up a competent authority would be a costly enterprise, both factors which indicate the immense challenges Malawi would face in exporting fishery products to the EU.
Non-legal guidance takes two forms, extension and the MBS Standards. Generally, extension messages to promote improved handling, product quality and hygiene are available across much of the country. However, these messages do not always reach the target audience due to shortage of funds in DoF which restricts the amount of extension which can be carried out. Expansion of the extension service would be a good way to promote food safety and better quality products in the artisanal sector before any legislation is brought into force which would require them to comply with higher standards. While the MBS Standards are in need of revision (see Section 2.2) their wider adoption would bring about an improvement in fishery product safety and quality. As with legislation, wider implementation of MBS Standards will be constrained by the need for investment by the private sector. It will be important that any legislation developed by GoM for fishery products takes the MBS Standards into account and does not create any overlapping of contradictory provisions.

**Key findings**

- There is an urgent need for a review and revision of the governance and legislation dealing with food safety in general and for fishery products in particular as the existing framework is incomplete and there are too many potential and actual overlaps in coverage.
- The current legislation and its implementation do not ensure the delivery of a safe fishery product to the consumer. Effective controls do not exist for many parts of the supply chain whether at the artisanal or the commercial level.
- The infrastructure for the whole of the supply chain is poor, as are standards of hygiene. This will limit the pace at which revised and stricter legislation can be implemented due to the requirement for industry to keep pace and make the necessary investments.
- Similarly, GoM will need to make investments in a regulatory authority for fishery products and ensure it is properly resourced before any new legislation can be brought into force and implemented effectively.
- It will be difficult for Malawi to meet the requirements for exports of fishery products regionally in the short-medium term. This too will require investments by the public and private sectors.
- Controls on aquaculture production and the use of feeds are inadequate.

**Key recommendations**

- It is recommended that coordination on the development of new food safety legislation and responsibility for its enforcement be improved between DoF and MoH. Both parties are recommended to not develop food safety legislation for fishery products until a common policy on coverage and enforcement has been reached.
- Initial changes of legislation for improving fishery product quality and safety should concentrate on the Malawian market. Export markets should not be sought until a sound legal framework and a robust system for the inspection and certification of exporters and export products are in place.
- Exports to the EU (and other similar markets such as the US) should not be given priority due to the substantial level of investment required.
Any legislation for improving food safety in fishery products should include the production of fish from aquaculture. Legislation or MS should be introduced for aquaculture feeds.

2.3.3 Training needs analysis for DoF staff (Task 2.4.3)

This task began with a review of the DoF staff CVs to assess their overall skill levels relevant to food safety and fisheries product quality and to review any training they have received. The training needs analysis (TNA) for DoF was carried out on the basis of likely scenarios for a future competent authority (nominally identified as a Fish Quality Inspection Unit FQIU) but, as the structure and duties of the FQIU have not yet been determined, the scenarios are necessarily speculative. Nominated staff within existing DoF structures were interviewed to determine their training and experience relevant to controls on food safety and quality. The training gaps were obtained by reference to the generic skills identified for inspectors and auditors in Section 2.1.2. Three scenarios were developed which are listed below.

Scenario 1: inspection and audit of the commercial sector only. Given the poor levels of hygiene and handling in the artisanal sector, it is anticipated that only the commercial sector would be able to comply with stricter food safety and quality controls in the near future. Comparing the current skills and knowledge of DoF staff to what may be required (this ultimately depends on the exact scope and content of future legislation) revealed some major skills gaps:

- Training in basic hygiene and fish handling is not adequate and there needs to be a substantial expansion in the coverage and duration of training in this area. Much greater emphasis needs to be given to the impact of processing and handling on fish quality and food safety.
- The current training programme at MCF includes very little in the way of practical skills beyond basic fish processing meaning inspectors are required to learn on the job. Given the limited training received by DoF staff in this area, such on the job training is more likely to reinforce poor practice than enhance capacity.
- Training in inspection skills is very limited and training in a systematic approach to inspection is absent from any of the training schemes DoF staff have attended. There is a need to develop an inspection manual for DoF and ensure all inspection staff are fully trained in its use. This would cover the entire supply chain from “sea to me”, i.e. from catching to consumption.
- Training in the PRP and HACCP is entirely inadequate and needs to be greatly improved to bring in sequential training to allow inspectors to obtain a sound understanding of HACCP principles and operation, and for auditors to receive specialist training in HACCP audit. There is no capacity in Malawi for the delivery of such training. As an indication, an introductory HACCP course would be 1 day (to provide a basic understanding of what HACCP is), an intermediate course would last 2-3 days (to provide an understanding of how HACCP systems work and the controls needed to put them into practice), a HACCP course for food management would be 2-3 days (to take trainees who have undergone the intermediate course through to the stage where they can design and operate a HACCP scheme) and an auditors courses which would last 4-5 days (to give auditors an advanced knowledge of HACCP and to understand the difference between implementation/verification and audit). This give a total of 5-7 days training for all inspectors plus another 4-5 days for auditors compared to the half or 1 day training most have received to date.
Scenario 2: progressive development of the artisanal catching, processing and aquaculture sectors. Under this scenario, it is envisaged that the artisanal sectors would gradually be brought into tighter controls on food safety and quality by DoF. The main targets would be those who supply product to supermarkets and those selling directly in the village market. Most DoF have received training in extension and have had the opportunity to put this into practice. However, the lack of training in post-harvest technology and basic food hygiene will need to be addressed if standards for artisanally-produced fishery products are to be improved. To improve the skills of DoF staff to deliver extension more effectively, the following training is indentified as necessary:

- In-depth training on post harvest technology focusing on preservation of quality (use of ice, etc), best processing practices for dried, salted and smoked products and care of products post-processing. This should cover the supply chain from catching to selling.
- Training in basic hygiene and sanitation applied along the supply chain. This would cover fishing boats, beach seines, landing sites, selling sites and processing areas.

Once standards of food hygiene, sanitation and product quality have been improved to the level where artisanal producers can supply commercial sellers such as supermarkets, additional training would need to be given to the artisanal sector to enable them to meet supermarket buyer demands on quality assurance. This would mean DoF staff receiving additional training in:

- Quality assurance schemes for artisanal producers.
- Food hygiene controls for commercial producers, adapted from those identified under Scenario 1 above to be appropriate for the artisanal sectors.

Scenario 3: exports to the EU and other international markets. None of the DoF staff interviewed have had any training relevant to meeting the requirements of EU markets beyond some basic awareness raising. The training required would be extensive and would be expected to take place over a period of years. There is currently no capacity in Malawi for the delivery of such training. In addition to the training indicated under Scenario 1, DoF staff involved in the inspection and certification of fishery products for export to the EU would need:

- Detailed and in-depth training in the EU food hygiene legislation. Competent authority staff are expected to know the legislation and understand what needs to be done to comply with its requirements.
- Comprehensive training in the operational procedures on the competent authority as laid down in its procedures manual (this needs to be written).
- Training in the issuing of export health certificates & the keeping of related records.
- Reporting and record keeping in compliance with the requirements of EU legislation.
- Training in sampling methods for use in the verification of HACCP and compliance with EU requirements.

As stated earlier, this third scenario is only possible (i) in the event that a viable fish export market emerges and (ii) substantial investment is made in ensuring the safety of the supply chain and improving inspection and verification processes. Neither of these is likely in the near term, and thus the recommended focus on the national and regional fish trade. It should also be mentioned that the above would need to take place over a period of several years and take place in parallel with the development of local and regional training capacity to ensure that the training could be continued.
Key findings

- There are significant skill shortages in the ability of DoF staff to be able to implement the regulation of improved food hygiene and quality standards. These skill shortages will need to be addressed in order to see any significant improvements in the regulation of fishery products in Malawi.
- There are significant skill shortages in the ability of DoF to carry out a programme to improve standards of hygiene, sanitation and quality in the fisheries sector. The shortage is more critical for the commercial sector.
- There is very little capacity in training to deal with the above 2 points. The training gap is most evident in training in the PRP and HACCP.
- Improved and expanded training will need to be delivered over a period of years and it will be necessary to enhance the range of local or regional trainers to deliver such training at the same time in order to ensure that improvements in capacity building are sustainable in the long term.
- The artisanal sector is unlikely to be able to adapt for higher standards for hygiene, sanitation and quality as easily as the commercial sector and will require much more training and extension support from DoF.
- Meeting the requirements of the EU food safety legislation is a demanding task which will require substantial effort and expense and may reasonably be expected to take several years of capacity building in DoF (and the private sector) before exports to the EU become a possibility. This will require a significant increase in the amount of training given to DoF staff in the potential competent authority.

Key recommendations

- All DoF staff should receive much more detailed and in-depth training in food safety and post-harvest issues. This training should extend to existing staff.
- Training and development plans for the anticipated FQIU should be realistic and take into account the costs and the need to develop training capacity in Malawi to ensure training is sustainable.
- The approach to improved food safety and quality should be phased to take into account the capacity of DoF staff to deliver support to the fisheries sector and the need for extensive training of DoF inspectors, trainers and extension officers.
- Training and capacity development for DoF should anticipate legislative developments and ensure fully trained staff are in place before the legislation comes into force.
- Training and capacity building in support of exports to the EU should be made a long term goal due to the need for considerable investment by the public and private sectors.
2.4 EXAMINATION OF REGIONAL REQUIREMENTS FOR FOOD SAFETY (ACTIVITY 2.5)

One of the required outputs is a desk study of the fish quality and safety requirements of imports into at least three COMESA member states. These target countries were identified by DoF over Phase 1 as South Africa, Zambia and Zimbabwe. The purpose of this desk study was to identify the potential barriers to increasing formal trade into Malawi’s COMESA neighbours and look to address these through additional capacity-building and inception processes.

The full report on the review of COMESA legislation for South Africa, Zambia and Zimbabwe is included in Appendix E, together with the ANARMAC report on the current position in Malawi (Appendix F). A number of key points came out of this study:

- The legal framework in Malawi is incomplete and there is very little legislation which deals with fishery products per se for either food safety or food quality issues.
- There is no identifiable administrative structure with overall responsibility for food safety and quality issues for fishery products. There are some critical gaps in the administrative responsibilities which are being covered at the moment on an ad hoc basis.
- Malawi would have great difficulty in meeting the requirements for the implementation of even a modest tightening of food safety controls for fishery products and would not be capable of meeting the standards required regionally in the immediate future.
- As well as considering the requirements for exports of fishery products to other COMESA states, there is also the fact that Malawi imports fish to be taken into consideration. Improved border inspection is needed to ensure the safety of these imports and this too will require a properly trained and resourced inspectorate. Plans for the harmonisation of border controls on fishery products in the region are underway and expected to be available from July 2012, although there is no fixed plan in place for adoption by Member States. As part of the plans for a nominal fish quality inspection unit at DoF, controls on imports are set to be improved through a better trained border inspection team. These would be responsible for checking fishery product imports at the border, although their exact role is yet to be determined. In order to develop a coherent fish inspection unit, a number of issues need to be resolved.
- A thorough review of the institutional and legislative requirements for food safety and quality controls for fishery products in Malawi is needed in order to determine the short, medium and long term objectives in terms of improved sanitary controls for improving standards in Malawi and to allow access to regional markets (and possibly international markets in the long term). Among the factors to be taken into account are:
  - Institutional responsibilities for food safety and quality of fishery products for internal production and consumption and for imports and exports.
  - The legislative framework required to put adequate safeguards in place to ensure the safety of the Malawian consumers and to allow access to export markets.
  - Funding for the setting up of an institution and a mechanism for continuing, sustainable funding for its operation.
2.5 NATIONAL WORKSHOP ON FOOD SAFETY IN FISHERIES (ACTIVITY 2.1)

This second phase culminated in a national workshop on food safety hazards in fisheries and aquaculture. Designed and set in motion over Phase 1, this two day workshop was held in the Hippo View Lodge in Liwonde over 2-3 May 2012 and included initial presentations by the consultants (on the aims and objectives of the workshop, the processes involved, as well as the results of the Inception Phase), followed by a series of break-out and plenary discussions.

The material presented and generated at the workshop is presented in Appendix M.

This appendix contains the following material:

1. Agenda
2. List of participants
3. Group photograph
4. Presentation 1: Background and Introduction
5. Presentation 2: Key findings from Phase 1 – Inception Mission
6. Presentation 3: Key findings from Phase 2 – Needs Assessment
7. Guidelines to participants on breakout group work
8. Breakout Group composition
12. Summary of feedback from the presentations and breakout groups
3  DETAILED WORK PLAN FOR PHASE 3 ONWARDS

3.1  REVISED METHODOLOGY

The following methodology has been extracted from Poseidon’s original bid and updated to reflect the progress made over Phase 2 of the project. The main updates and changes are highlighted in Section 3.2 on page 54.

3.1.1  Phase 3: Capacity Development Implementation (June – September 2012)

Based on the previous diagnostic stage, this implementation phase will largely consist of training and other capacity-building initiatives. This training will either be direct (e.g. with the DoF) or indirect (e.g. training of trainers with the MCF). It will also include a strong institutional strengthening element for DoF, as well as the MBS.

The third and final visit to Malawi will commence with Mr. Ian Watson’s and Mr. Tim Huntington’s arrival in Malawi on Sunday 10th September 2012. Both consultants will leave Malawi on 23rd September 2012 following the conclusion of the ‘Exit Strategy’ workshop and a final debriefing meeting with DoF.

Activity 3.1: Capacity Development - Malawi College of Fisheries (11-15 September 2012).

Two tasks are envisaged:

- **Task 3.1.1: Design updated MCF training curricula.** Based on the findings of Tasks 2.2.1 and 2.2.2 updated training curricula will be produced which is relevant to both the local production and markets and to regional and international markets. While the main focus will be on fish handling and processing, it is anticipated that the curriculum may need to be widened to include national and regional food safety legislation and market requirements. This task will be combined with Task 3.3.1 (design updated DoF training curricula) as they are effectively the same (DoF training is all conducted by MCF). To facilitate this, three DoF staff will be invited to join this training programme at MCF (and the subsequent ToT workshop in Task 3.1.2, see next). This will also allow the end users of the training (e.g. DoF) to interact with the curriculum development process.

- **Task 3.1.2: MCF 'Training of Trainers' Workshop.** This one day informal workshop will present the revised training curricula from the previous task and, through formal and break-out discussions, adopt an approach no how best to implement these and embed this in a revised MCF training programme in fish quality control and safety assurance.

Activity 3.2: Capacity Development - Malawi Bureau of Standards (June 2012 from home office).

Based on the findings of Tasks 2.3.1 and 2.3.2 updated curricula will be produced which is relevant to the needs of local markets, as well as regional trade and market requirements. This will include the design of a basic curriculum for meeting likely future hygiene standards for capture fisheries and aquaculture products. The need for the inclusion of general food hygiene tools such as HACCP will be taken into account, as will the need to offer training at different levels (e.g. introduction to HACCP through to HACCP audit).
Activity 3.3: Capacity Development - Department of Fisheries (10-15 September 2012).

Two tasks are envisaged:

- **Task 3.3.1: Design updated DoF training curricula (IW).** This task will be based on the findings of Tasks 2.4.1, 2.4.2 and 2.4.3. This will be provided to three key DoF officers who will involved in the Department’s future quality assurance and inspection programme and will be based at MCF in Mangochi as part of Task 3.1.1 (Design updated MCF training curricula).

- **Task 3.3.2: Prepare programme to support institutional coordination in food safety (TH).** Based on Task 2.4.1 in Phase 2, this task will see the development of a DoF-led programme to improve institutional coordination in ensuring food quality and safety in Malawi. The main focus on this programme will be clarifying mandates and roles (to be presented in the Final Workshop in Phase 4) and addressing the major internal gaps in the inspection and assurance process. There are two main sub-tasks involved:
  
  o **Sub-task 3.3.2.1: Clarification of the DoF role in food quality assurance**
    
    - Gaps analysis
    - Agreement of DoF and other institutional roles
    - Agreement on the location of a Competent Authority for fish exports from Malawi
    - Development of institutional coordination mechanisms

  o **Sub-task 3.3.2.2: Development of a comprehensive DoF Fish Quality Assurance Programme**
    
    - Mandate
    - Strategy
    - Organisational structure
    - Staff and functions
    - Work programming
      
      - Annual Inspection Plan
      - Risk-based approach
      - Inspection frequency
      - Sanctions for non-compliance
      - Annual reporting
      - Guidelines for HACCP & SOPs
      - Monitoring programmes
      - Statistics and information systems

    - Staff training and competencies
    - Anti-corruption measures
    - Internal quality assurance
    - Financial management of the DoF programme
    - Institutional linkages
• **Task 3.3.3: Training & extension material developed (IW & TH).** This task will focus on the provision of DoF training and extension to small-scale fishers and aquaculture producers in basic fish post-harvest handling and preservation of quality with some simple messages on maintaining food hygiene. It is intended that five new A2 size posters with four messages each will be produced for display at BVC offices and other landing centre facilities.

• **Task 3.3.4: DoF staff trained in a participatory process of fish quality standards development for small-scale enterprises (IW & TH).** In consultation with the Malawi Bureau of Standards (MBS) and Department of Fisheries (DoF) the project will provide relevant guidance to fish quality standards based on best practice applied elsewhere. A series of standards for assessing the quality of the main fish products in Malawi will be produced from the home office and then used as the basis for this training.

3.1.2 **Phase 4: Exit Strategy (September - October 2012)**

This final stage will ensure that all project outputs are embedded into on-going programmes with the three main implementing agencies to ensure the sustainability of this study's initiatives.

This final phase will take place consecutively with the Phase 3 Mission.

**Activity 4.1: Assist DoF in preparation of a MSME Sub-strategy for fisheries food safety (September 2012).** A Micro, Small and Medium Enterprise (MSME) Policy and Strategy for Malawi is about to be developed. One of the objectives of the Policy is to strengthen the business support infrastructure through investment in dedicated institutions for MSME development. The purpose of this policy and implementation strategy will be to assist DoF to understand and respond to the challenges facing small-scale fisheries businesses and their ability to take advantage of new market opportunities for fishery products where compliance with higher quality and food safety considerations is likely to be key.

**Activity 4.2: Final Workshop to present the Project Findings (21 September 2012).** A final one day workshop will be held at the end of the project to present the findings and results of the project. These will include (i) the training needs assessments and curriculum development recommendations of the three main implementing agencies involved; (ii) the basis of the institutional development program to refine and clarify internal roles and responsibilities; and (iii) the DoF MSME Strategy and implementation plans.
Figure 4: Revised project timetable
3.2 SUMMARY OF CHANGES SINCE PHASE 1 (INCEPTION)

As a result of the findings of the Phase 2, which were discussed with DoF at the closing meeting on 4th May 2012, we have made the following changes to the originally proposed programme (and subsequently amended at the end of the inception phase).

1. Task 3.1.1 *(Design updated MCF training curricula)* will now include three DoF staff at MCF in Mangochi, in addition to the MCF staff. This will allow the end users of the training (e.g. DoF) to interact with the curriculum development process. It will mean that Task 3.3.1 *(Design updated DoF training curricula)* is effectively replaced by this activity. This is based on the fact that DoF does not have its own training curricula – this in fact belongs to MCF, so we are concentrating our activities there.

2. Activity 3.2 *(Capacity Development - Malawi Bureau of Standards)* has been slightly amended to focus on regional, rather than EU trade.

3. Activity 4.1 *(Assist DoF in preparation of a MSME Policy and Strategy for fisheries food safety)* (September 2012) has been changed to ‘*Assist DoF in preparation of a MSME Sub-strategy for fisheries food safety* (September 2012)’. This is because there will be a policy and strategy at national level, so our task is better aimed at providing DoF a sub-strategy under this. Otherwise the task is unchanged.

4. To fund the extra per diem and transports costs of including the three DoF officers in Task 3.1.1 *(Design updated MCF training curricula)*, the consultants suggested that Activity 4.2 *(Final Workshop to present the Project Findings)* takes place in Lilongwe rather than a remote location (which means all participants incur per diem and transport costs). The DoF would prefer an out of town location, so the consultants (via ANARMAC) are looking at possible options that would not require any change to the additional budget. It is also suggested that key donors and regional projects active in fish quality issues (e.g. IOC SmartFish and ACP Fish II) are also invited to contribute to this workshop by examining options to support DoF implement the recommendations made in this project.

5. **Publicity**: the DoF suggested that the Final Workshop should be well publicised in advance. It was agreed that the consultants would produce a press release and that ANARMAC would explore approaches (e.g. via the Agriculture Communications Branch) for publicising the workshop in advance.

6. **Website**: the consultants have provided a website where project deliverables, such as approved reports and workshop reports can be downloaded. The site can be accessed with the following:

   URL: [http://consult-POSEIDON.com/asp/accessInt.asp](http://consult-POSEIDON.com/asp/accessInt.asp)

   Project number: 882

   Project password: commsec

   This link would only be passed to project stakeholders e.g. workshop invitees.

7. **Reporting**: We suggest that the *Second Progress Report* (due end Phase 3 is brought forward to 10th June. This is because Phases 3 and 4 are being run concurrently, with submission dates within days of each other.
Appendix A: Terms of Reference

A. Background

Malawi’s Growth and Development Strategy (2006 - 2011) is committed to wealth creation through sustainable economic growth and infrastructure development as a means of achieving poverty reduction. The fisheries sector has a key role to play in poverty reduction through the provision of employment and, more importantly, its contribution to household food security. Most fish produced in Malawi is consumed locally although there is some trade in fishery products across the country’s borders, largely on an informal basis. There are plans that Malawi will be able to export fish products well beyond the sub-region by 2020.

The Department of Fisheries (DoF), Government of Malawi, wishes to improve both the quality and safety of fishery products that are placed on the market in Malawi. There is a myriad of legislation and regulations (e.g. Acts of Parliament and by-laws) which are relevant to control over the quality and safety of fishery products placed on the market in Malawi. However, the vast array of institutions involved, concerns about overlapping jurisdictions and official mandates at different levels, combined with resource constraints (e.g. qualified fish inspectors) makes monitoring and enforcement of any formal quality and food safety related standards or other requirements more difficult. Existing laboratory testing and other diagnostic services are also extremely variable both in terms of their facilities (e.g. equipment) as well as human capacity.

In order to improve both the quality and safety of fishery products that are placed on the market, DoF is keen to pursue the elaboration of a new set of fish quality and safety standards of particular relevance to small-scale processing enterprises. DoF is also keen to re-introduce the practice of fish inspections by DoF staff (in the major wholesale markets).

The role of the Malawi Bureau of Standards is particularly significant as it is responsible for the preparation and publication of standards, including food-related standards. MBS currently undertakes periodic inspections and testing services of food processing establishments including certification of products from the largest commercial fish processing plant in the country. MBS also runs a number of training courses, on a commercial basis, for the public including a course on 'Developing food safety management systems'.

A Micro, Small and Medium Enterprise (MSME) Policy and Strategy for Malawi is about to be developed. One of the objectives of the Policy is to strengthen the business support infrastructure through investment in dedicated institutions for MSME development. The ability of these dedicated institutions to understand and respond to the challenges facing small-scale fisheries enterprise will be critical to the ability of local enterprise to take advantage of new market opportunities for fishery products where compliance with higher quality and food safety considerations is likely to be key.
PHASE 2: NEEDS ANALYSIS (PROGRESS REPORT N°1)

B. The Objective

The objective of the project is to improve the quality and safety of fishery products in Malawi. This will be achieved by way of a number of interventions in support of the following:

a. Improved handling of fish by fishermen (capture fisheries) leading to a reduction in both quality and physical losses.

b. Improved awareness of the real constraints to adoption of any new quality and safety standards by fishermen and small-scale enterprise, including lack of market related imperatives.

c. More strategic interventions by DoF to address fish quality and food safety issues that are consistent with its mandate and existing capacities, taking into account the comparative advantage of other relevant institutions, including District Assemblies, to support efforts in this direction.

d. Improved cooperation amongst key stakeholders in the fish supply/value chain with respect to addressing existing and future challenges to the quality and safety of fishery products from aquaculture.

e. Supportive policies that promote a business environment where market forces and competition drive improvements in the quality and safety of fishery products.

C. Outputs

Three outputs are envisaged:

a. Staff of relevant local institutions trained in techniques designed to improve the quality of fishery products. This will include strengthening the capacity of Malawi College of Fisheries (MCF) and Malawi Bureau of Standards (MBS) or other relevant institutions. The capacity of MCF to undertake certain official controls (e.g. Competent Authority) with respect to improving the safety of fishery products placed on markets will also be assessed and clear recommendations made.

Key Deliverables will be:

- Training workshop for selected MCF Staff (or other relevant institutions) on fish handling conducted.
- MBS training courses reviewed for relevance to small-scale fisheries enterprise.
- Inspection and auditing capabilities of MBS in fisheries assessed.
- MCF curriculum reviewed, with recommendations on fish handling and processing.
- Assessment of the MCF to serve as Competent Authority for export of fishery products to the EU completed.

b. DoF staff trained in a participatory process of fish quality standards development for small-scale enterprise. In consultation with the Malawi Bureau of Standards (MBS) and Department of Fisheries (DoF). The project will provide relevant guidance to fish quality standards based on best practice applied elsewhere. At least one major workshop on the potential food safety challenges facing the aquaculture sub-sector is envisaged.
Key Deliverables will be:

- DoF priority areas of intervention relevant to fish quality and food safety anticipated.
- A practical manual/set of guidelines to facilitate the development of fish quality standards for small scale-enterprise developed.
- National workshop on food safety hazards in fisheries and aquaculture conducted.
- Extension materials in form of posters, etc. produced.

**c.** Fish quality and safety requirements in a number of COMESA (or SADC) countries elaborated for the benefit of DoF. This will be achieved by undertaking a desk study of the fish quality and safety requirements of imports as applied in at least three (3) COMESA member states.

Key Deliverable will be:

- Paper to DoF on fish quality and related food safety requirements in other COMESA countries developed.

**D. Activities to be undertaken**

- Provide Malawi College of Fisheries (or other relevant institutions) with enhanced capacity with respect to the provision of training in the proper handling of fish
- Undertake a review of the existing capacity within Malawi College of Fisheries to support improvements in safety of fishery products, including an assessment of existing human resources to provide advice to DoF regarding implementation of official fisheries related food safety controls.
- Undertake an assessment of the training provided by MCF to potential fisheries extension officers with respect to enhancing their knowledge regarding the quality and safety of fishery products.
- Undertake a review of relevant MBS training courses as well as official inspection capabilities.
- Identify emerging priority issues regarding the quality and safety of fisheries products from aquaculture into the future.
- Organise a tailored programme of training for DoF staff on the fundamentals of standards development, including an understanding of the importance of market imperatives.
- Organise a programme of consultations on fish quality standards development between DoF and a range of stakeholders in the fish supply value chain, including small-scale fisheries enterprise, using participatory tools where possible.
- Assist DoF to make effective contributions to the development of the MSME Policy and Strategy to ensure that the quality and food safety development needs/challenges of fisheries-related enterprise are taken into account.
- Organise a final workshop at which project findings are presented to key stakeholders.
E. Approach and Methodology

The Consultant(s) will work closely with DoF which will facilitate the engagement with relevant parties especially MCF and MBS. DoF will also provide the Consultant(s) with access to office space in Lilongwe. The Consultant(s) however will need to be able to operate independently and access to relevant local expertise and support services, including logistical support, will be essential.

The project will be implemented over a ten to fourteen month period, including an Inception Phase. The Inception phase will involve meetings with DoF as well as consultations with Malawi College of Fisheries and Malawi Bureau of Standards or other institutions where relevant. The Consultant is also expected to consult broadly with private sector interests (small-scale and large scale) in both capture fisheries and aquaculture.

Capacity building for MCF will take the form of 'training of trainers' involving key staff who will be expected to support improved fish handling by local fishers into the future including fishers from commercial trawlers on Lake Malawi. Whilst the emphasis of the training will be on transferring practical skills, some assistance will be extended to developing existing materials used by MCF, particularly those materials employed for the development of potential fisheries extension officers.

With respect to MBS, the principal focus will be on those training programmes which have direct relevance to improving the quality and safety of fishery products being consumed, including the 'Development of Food Safety Management Systems' course. The project will also seek to strengthen current MBS activities with respect to inspections of food establishments as well as other assessments (e.g. HACCP audit) where fishery products are involved.

In order to determine the range and nature of specific interventions DoF can realistically support with respect to fish quality standards development, the Consultant(s) will need to understand the limitations currently placed on DoF not only in terms of its existing mandate but also existing resource, including human capacity, constraints faced.

Based on this understanding, the Consultant(s) will seek to provide guidance to DoF on best practice in the development of fish quality (and food safety) standards, including voluntary where feasible, that is of particular relevance to small-scale fisheries enterprise. This guidance will emerge from a number of predefined actions, including undertaking a review of existing standards as developed and approved by MBS.

The consultant(s) will also be required to devise a programme of support to facilitate effective coordination of fisheries sector representation, under DoF leadership, at the MSME and other major policy development fora.
F. Reporting

Four reports will be produced. In each case, a draft copy of the report will be submitted to the Commonwealth Secretariat for comment before finalisation.

Inception Report

An Inception Report, endorsed by DoF, will be produced setting out key agreements reached with relevant institutions as well as including a detailed work plan setting out key activities to be undertaken for the subsequent phases of the project. This report shall not exceed 20 pages A4 (excluding annexes) and will be submitted to the Commonwealth Secretariat within one month of the Inception visit. The Inception Report will include:

- Task descriptions and allocated levels of professional inputs
- Timelines for key deliverables and reports
- Budget allocation regarding non-fee items (e.g. workshops etc.)

Two progress reports

The first progress report will be submitted to the Commonwealth Secretariat during the second phase of the project. The second progress report will be produced during the third phase of the project.

Final Project Report

A draft will be produced at least one month in advance of the final version.
Appendix B: Terms of Reference for a Malawi food safety legislation review

Objective

This study will provide the Contractor with a clear overview and summary details of the Malawian legislation covering the quality and food safety fishery products at all stages for the supply chain from initial production to retail, including, but not exclusively, fishing vessels (artisanal and commercial), landing sites, selling and buying points (including formal and informal markets, supermarkets and shops), transport and distribution, aquaculture production (small-scale and commercial) and the import of fishery products.

The review will include, but not exclusively, legislation at the national and local level, legislation directly related to fishery products, general food safety legislation applying to fishery products and any general public health legislation (e.g. potable water laws) which may apply to fishery products.

Outputs

Four outputs are envisaged:

1. List, and where possible copies of, of Malawi legislation which applies to fishery products, whether directly or indirectly
2. List, and where possible copies of, of any planned or draft legislation which may apply directly to fishery products
3. Summary details of the key provisions of the main legislation on fishery products safety and quality.
4. Outline of the key agencies responsible for the enforcement of food safety and quality for fishery products and a brief summary of their roles in developing and enforcing legislation on fishery products.

Reporting

The consultant will provide the Contractor with a draft report not exceeding 15 pages A4 in length, plus appendices as necessary by 1st March 2012 in Microsoft Word format. The Contractor will be responsible for quality control of the report and for its eventual transmission to the Client and DoF. The draft report will be sent in the first instance to Ian Watson (fishiwatson@aol.com) and copied to Tim Huntington (tim@consult-poseidon.com).
Appendix C: List of Documents Consulted

DONOR AND EXTERNAL REPORTS

AGORA'2000 (2010a). Facilitating Trade in Exports of Fish Products In Malawi. Inception Report AoR.147-P164 For the Malawi Government Ministry Of Industry And Trade

AGORA'2000 (2010b). Facilitating Trade In Exports Of Fish Products In Malawi. Mid-Term Report AoR.147-P164 For The Malawi Government Ministry Of Industry And Trade


GOVERNMENT OF MALAWI REPORTS AND PUBLICATIONS

DoF (undated). Information on the Handling, Processing and Distribution of Fish and Fish Products in Malawi (internal DoF document)


Malawi Bureau of Standards (various dates):
- MS 21:2002 Food and food processing units – Code of hygienic conditions
- MS 115:2002 Frozen fish – Specification
- MS 116:2002 Salted fish – Specification
- MS 117:2002 Smoked fish – Specification
- MS 118:2007 Canned fish, canned fish products & canned marine molluscs – Specification
- MS 770:2007 Fresh fish – Specification

Malawi College of Fisheries (2010). Community Outreach Material (produced for the Department of Fisheries):
- Improving Quality of Smoked Fish Products. Facilitator’s Guide for Community Training.
- Improving Quality of Parboiled Fish Products. Facilitator’s Guide for Community Training.
- Improving Quality of Sun-Dried Fish Products. Facilitator’s Guide for Community Training.


Ministry of Natural Resources and Environmental Affairs (2001). Department of Fisheries National Fisheries and Aquaculture Policy, October 2001

Ministry of Agriculture, Irrigation and Water Development (Undated). Department of Fisheries Draft Fisheries Policy 2012 – 2017

Malawi Government (2011). Functional Review Report. Prepared by Leston Kachule of the Management Services Division or the Department of Public Services Management. 70 pages plus appendices


TRADECOM (2010). Fisheries Conservation and Management Act, 1997 (No. 25 of 1997) Regulations regarding safety of fishery products (draft prepared by the TRADECOM project)
### Appendix D: People met (Phase 2, April – May 2012)

<table>
<thead>
<tr>
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## PHASE 2: NEEDS ANALYSIS (PROGRESS REPORT N°1)

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Appendix E: COMESA Comparative Legislation Review (South Africa, Zambia & Zimbabwe)

Note: this report is subject to revision when the new COMESA common standards for fishery products are published (nominally planned for June 2012)

Introduction

This study was commissioned to examine the requirements for food safety and food standards which might apply to fishery products exported from Malawi to regional markets in SADC and COMESA. Three countries were selected for study, South Africa, Zambia and Zimbabwe, all of which are members of COMESA. As far as is known, exports of fishery products to these countries have been limited and probably restricted to some smoked or dried fish products traded through informal markets. Exports of fishery products from Malawi have been limited for a number of reasons, including lack of supply (Malawi has a significant undersupply of fish), high internal prices and a lack of hygiene controls. There is no reason to assume that these factors will lessen in importance in the short to medium term; indeed population growth may make the undersupply of fish even greater unless supplies from aquaculture can be increased significantly.

Given the high internal price for fresh fish, especially for indigenous fishes such as chambo, it is likely that there will be strong commercial incentives for producers and dealers to sell fish on the internal market rather than export it. The additional costs associated with exports and the lower returns (prices in neighbouring countries for tilapias are lower than in Malawi) mean that the local market will be more profitable for producers. The situation for other fish products such as smoked or dried fish is less clear but, given strong demand on the Malawi market, it seems unlikely that there will be much surplus available for export.

There are a number of technical barriers to trade which could make exports from Malawi very difficult to achieve. Even the regional markets may become unavailable to Malawi exporters due to an increasing standard for hygiene and an increasing level of sanitary inspection. The technical barriers resulting from new legislative developments by COMESA are outlined below.

Quality standards

From an examination of the standards for fishery products from the three countries, it is clear that there is a degree of convergence in the standards and a certain amount of common text. This is due to the adoption of common standards developed through COMESA. A check revealed that even non-COMESA countries are also adopting these standards. As Malawi is a member of COMESA, it is assumed that it will be required to adopt the full COMESA standards in due course. This will present considerable challenges:

- On the basis of the Inception Visit, no enterprise visited would be able to meet the standards, as none have the infrastructure or quality management systems in place to be able to do this. Even the MBS Standards cannot be met at present;
- There is no effective means of ensuring standards are enforced and that full verification of compliance can be provided by an independent certifier. MBS is some way towards meeting this, but the systems to enable proper certification are lacking in enterprises and without that, any guarantees provided by MBS would be limited;
- There appears to be little pressure for quality in Malawi, either from consumers or from regulators. This may change in time, but the shortage of fish supplies may make the consumer less critical as regards quality standards.
A substantial effort will be needed to ensure that Malawi can meet the COMESA standards or even the MBS Standards. This will involve a great deal of expenditure by both the private and public sectors and a substantial commitment to training. Subject to the findings of the second COMMSEC mission, the training and investment are likely to include:

- Commitment by the private sector to invest in quality management systems (e.g. ISO). This will involve costs in getting ISO accreditation and in training staff in the operation of quality management systems;
- An independent certification system for the inspection of premises for compliance with standards. While MBS may be able to certify compliance with MBS Standards, they may require further resources to enable them to certify to regional (i.e. COMESA) standards which may ultimately require a common standard for inspection and certification;
- The provision of private sector support services (consultancy and training) to enable producers to meet regional standards. There appear to be no such services currently available in Malawi.

To be realistic even the implementation of MBS Standards this will require sustained effort and hence expenditure over a number of years. The ultimate requirement will be for a quality culture to emerge in Malawi where the commercial pressures for higher quality products is embedded in consumer buying and the private sector responds by meeting the demand for them.

While the COMESA standards are based to some extent on CODEX, they are less undemanding than most standards in international trade. Retail buyers such as major supermarket chains can operate standards which are very much more stringent than CODEX (e.g. the British Retail Consortium standards). These are usually a business to business agreement and form part of the contract between buyer and seller and thus require a lot of investment by exporters rather than by government regulators. However, there will be a need for government to adopt policies to encourage the development of training and support services for exporters seeking to access international markets.

**Hygiene standards**

Meeting the hygiene standards required by the three COMESA countries would be very challenging for both the private and public sectors at present. Based on the findings of the Inception Visit, there are no effective hygiene controls in operation by government and no hygiene control systems being operated by the private sector. The deficiencies are considerable and even the MBS Standards cannot be met. There are a number of causes for these deficiencies:

- There is no culture of ensuring the production of safe food in the private sector and even the most basic of hygiene controls (such as Standard Operating Procedures) are absent;
- The infrastructure to ensure hygiene controls is limited or absent. For example, the private sector would fish it very difficult to carry out even basic microbiology testing let alone more demanding testing such as for specified bacteria. Similarly, access to analytical laboratories for contaminant testing is limited although this need could be met by sending samples to regional laboratories for analysis;
- There are no support services to industry to enable it to introduce basic food hygiene controls. Normally, this would be provided by training and consultancy,
both of which are lacking. Training in basic food hygiene is generally seen as a basic requirement for exporters but there are no providers of the service in Malawi. The extent of the training deficiency will be examined in the second COMMSEC mission;

- There is no legal framework for the operation of hygiene controls by the private sector, or for the establishment and operation of an inspectorate. This is a major obstacle to meeting the requirements of international trade;
- There is no trained inspectorate in Malawi which could meet requirements for regional trade, let alone the international trade from more demanding markets. Even were such an inspectorate to be formed and trained, the lack of support services, equipment and infrastructure (laboratories, vehicles, staff) would make it ineffective. To meet the MBS Standards would require substantial investment and to meet the COMESA requirements would require a very substantial investment, not only in infrastructure development, but also in continuing funding for the operation of an inspectorate.

The new COMESA standards are based on CODEX. CODEX Code of Practice for Fish and Fishery Products (CAC/RCP 52-2003) requires the operation on HACCP (Hazard Analysis Critical Control Point) and this will be a major obstacle for Malawi. The Pre-Requisite Programme (PRP) for HACCP is absent in industry meaning that the adoption and operation of HACCP would not be possible. In summary, the essential steps for the successful adoption and operation of HACCP are:

**Putting in place the PRP.**

This includes:

- Having a properly constructed business premises (processing plant, freezer, vessel, landing site, etc) which is capable of hygienic operation. Most of the facilities visited on the Inception Mission fell a long way short of meeting this requirement;
- The operation of Standard Sanitary Operating Procedures (SSOP) is an essential part of the PRP. This involves the development and operation of written procedures to ensure hygienic operation of premises, the training of staff in their implementation and a system to ensure that implementation is correct;
- The operation of Good Manufacturing Practice (GMP) which would also involve the development and implementation of manuals to ensure correct implementation.

There are currently no such systems in place in Malawi and there is no training and consultancy service available to enable enterprises to develop them. It would also be expected that any government inspectorate would include checking the implementation of the PRP and there is nobody available in DoF or MBS capable of doing such inspections (subject to confirmation by the second COMMSEC mission). Given the above, no enterprise in Malawi would be able to implement HACCP.

The development and implementation of HACCP requires a considerable amount of training and consultancy for enterprises. Admittedly this could be supplied regionally from support services available in countries which have effective HACCP systems in operation but it is preferable that in-country support is available for at least the initial setting up and training of staff. There will also be a need for continuing staff training on the operation of HACCP which would best be delivered locally. Development of HACCP support capacity in Malawi just for the fisheries sector may be difficult to justify in terms of expense and it may be better to seek to establish wider support services which could deliver assistance to the food
industry in general. Regional adoption of HACCP as a requirement for placing fishery products on the markets would effectively bar all but fresh fish or whole, frozen fish exports from Malawi from those markets. Adoption of HACCP as a legal requirement in Malawi would shut down the fisheries sector as nobody is in a position to comply.

COMESA standards
Draft COMESA standards are not available as they are on the members’ only section of the COMESA website which requires authorised access. However, the standards applied by COMESA countries allow for some assessment to be made. The current round of revisions to COMESA standards should be completed soon and the published versions should be available on the COMESA website in June 2012. Once these are published, a better assessment of their likely impact on Malawi can be made and an estimation made of the capability of Malawi to adopt and enforce the standards will be possible.

The legal framework in Malawi
The legal framework in Malawi is basic and only covers some standards for food products, including fishery products and largely omits any reference to food safety. The MBS Standards are of unclear legal status and are not a substitute for a comprehensive legal framework on food safety. Putting this right will present the Government of Malawi (GoW) with a considerable challenge, not least in finding the budgetary resources for implementing more stringent food safety legislation. The current Fisheries Act 1997 does not deal with food safety issues and other legislation is at best, incomplete. The first challenge to improving food safety for fisheries products would be to introduce comprehensive legal food safety legislation which would cover all aspects from primary production to retailing. The absence of a general food act is a major problem as this would be expected to set the general hygiene conditions for the production, processing and marketing of foodstuffs; specific conditions could be developed for fishery products. The development of legislation just for fishery products presents the risk that is may contradict or not match wider food safety legislation developed in the future and it is very desirable that general food safety legislation is in place first or that any legislation specifically for fishery products be limited in scope.

The legal framework for fishery products may include such measures as:

- Mandatory limits for bacterial contamination of premises and products;
- Mandatory limits for contaminants (e.g. heavy metals, pesticides) and residues (e.g. veterinary medicines);
- Mandatory requirements for the construction and operation of premises, including vessels;
- Mandatory requirements for the temperature of fresh and frozen fish on board, in transport, during processing and in storage;
- Mandatory requirements for record keeping;
- The establishment of a Competent Authority (CA) and its powers of inspection and sanction;
- The introduction of the use of HACCP for specified operators such as fish processors;
- Mandatory requirement for businesses to operate document-based food safety controls such as SSOPs and GMP.
PHASE 2: NEEDS ANALYSIS (PROGRESS REPORT N°1)

Under current circumstances, it would be best if such measures were introduced as and when specified in COMESA standards. However, even the introduction of limited measures to improve food safety standards for fishery products would be a major challenge for industry and government and some thought needs to be given to the phasing in of such controls.

The industrial sector whether in processing or aquaculture may be best placed to be able to absorb the costs of compliance and to access the resources required for the adoption of more stringent food safety systems. They will face a challenge in locating sources of expertise in Malawi to assist them and may need to bring in external assistance. This will limit the pace of change and improvements will need to be phased in over a period of years.

The small-scale processing sector will be very hard pushed to comply with any increased requirements for food safety. They will require access to much training and support over a prolonged period of time.

The small scale catching sector will also face many difficulties in complying and will need a great deal of support.

The small scale aquaculture sector will face major problems, especially if monitoring of residues of veterinary products is brought in. This could be dealt with through extension services promoting messages on the use and abuse of veterinary medicines. The introduction of veterinary medicine residues would need to be phased in over a long period, mainly due to the costs involved for GoW. Their product (fresh fish, usually alive at the farm gate) is otherwise a very safe product and does not present many food safety risks.

There are also many challenges for GoW in introducing tighter controls on food safety for fishery products, notably in the substantial costs in the implementation of controls and in the creation of a body to act as a regulator and inspectorate. The introduction of wider and stricter controls may also mean that bodies outside the CA will also face associated costs, either through investment in equipment and staff or through increased throughput of samples and consideration will need to be given to how these costs will be covered. Additional costs and services to be provided can be categorised under a number of headings.

Laboratory support. While the MBS laboratory can provide some analytical services, it may need to invest if it is to provide the full range of services required. It may not be economically viable to invest in some of the more complicated and expensive analyses such as veterinary residue analysis if this is just carried out for the fisheries sector and such services may need to be sought outside Malawi. Either way, a budgetary allowance needs to be made for the analysis of official samples taken during inspections by the CA. As a minimum, any laboratory performing analysis of official samples will need to offer microbiological and chemical analysis. Official laboratories also need to operate to a high standard, preferable to ISO17025, especially when handling official samples.

Staff. It is certain that the CA will require additional staff to carry out the food safety functions effectively. This might be achieved within DoF by reallocating staff from other duties but an adequate number of inspectors is an absolute requirement for the operation of an inspectorate. The number of staff required cannot be determined at this stage but would be expected to increase incrementally with initial inspections focussing on the commercial sector (on the assumption that this supplies a wider market and thus any food hygiene efficiencies could potentially affect a much large population) before eventually
working downscale to the artisanal sectors which, due to their number and dispersed nature would require far more effort for effective regulation.

Training. Staff for the CA would require a considerable amount of training in post-harvest and food safety controls. Such training is not available to a satisfactory level in Malawi (subject to confirmation) and food safety training for the fisheries sector is virtually absent. Training requirements will be dealt with in more detail under the training needs analysis to be carried out in the second COMSEC mission but can be summarised as follows. All staff involved in inspections would need at least basic training in fisheries post-harvest (handling, storage, preservation, smoking, etc) and in basic food safety. A core of lead inspectors would also need to receive training in advanced food safety (GMP, SSOP, inspection and sampling) and a smaller number would also require training in HACCP, eventually to an advanced level for HACCP audit.

Taking all the preceding into account, it is clear that any moves to improve food safety and standards for the fishery sector need to be considered and planned very carefully. Even the rapid adoption of COMESA common standards poses risks to the production and trade in fisheries products as industry would not be in a position to comply and the CA (which does not yet formally exist) would not be able to enforce the standards due to lack of resources, both technical and human. Trying to meet stringent standards for some international markets such as the EU or US would be very challenging and to introduce legislation requiring industry to meet such standards would be counterproductive as compliance would be impossible. A degree of realism is required which is not evident in some of the legislative proposals currently under development.

Proposed changes to Fisheries Conservation and Management Act 1997

There are at least two versions of a proposal for amending the Act to include new food safety measures which have been provided to the consultants and it is not clear how these are being integrated and incorporated into a formal draft. Both contain varying degrees of tightening up of the food safety requirements for the fisheries sector and both contain a number of measures which would not be possible to enforce given the resources currently available to government and the private sector. The introduction of even a modest tightening of food safety controls would effectively mean nearly all fisheries production, processing and handling in Malawi could be non-compliant. One legislative draft appears to be based on EU food safety legislation, the introduction of which would be wholly unrealistic in Malawi except in the long term (i.e. 10-15 years) and unnecessary unless access to EU markets is being sought. An outline roadmap for improving food safety and developing legislation was included in the Inception Report. This indicated the measures required for progressive food safety improvements and the kinds of investments which might be needed. It is worth repeating that even getting to a state where the current MBS Standards and legislation could be implemented would probably require 4-5 years, assuming that the necessary funds could be found to fund the investments required by the public and private sectors. If it were decided to incorporate the revised COMESA standards in that time, it is likely that more investment would be needed. For the CA, there would be investment required in staff training, equipment and resources to allow field visits.

Any changes to the Malawi legislation, either to improve regulation and compliance with current legislation and MBS Standards will result in an increase in costs to the CA and this needs to be taken into account. If enforcement of current legislation is to be tightened or the COMESA harmonised standards are to be introduced and enforced, the CA must have
more resources otherwise it will lose credibility. The inability to enforce such limited food safety measures which currently apply to fishery products may lead to the private sector disregarding legal requirements and to the CA being discredited. An inability to enforce legislation is just as bad as not having the legislative powers; indeed, from the point of view of the EU Food and Veterinary Office, failure to enforce legislation on food safety is seen as a serious failure. It is vital that, before more stringent food safety standards such as the COMESA common standards are brought into force the enforcing bodies (assumed to be the CA, possibly composing DoF and MBS) are properly resourced to be able to carry out the necessary inspection and enforcement activities.

With the above in mind, the specific requirements for market access for South Africa, Zambia and Zimbabwe are summarised below. A more detailed analysis of the legislation is given in Annex 1 to this Appendix.

**Food safety legislation in South Africa**

Food safety controls come under the The National Department of Health which is responsible for inspection and enforcement of the legislation. Their powers include the inspection and regulation of imports. There are a number of legal instruments which apply to fishery products some of which can be access from National Regulator for Compulsory Standards via the Compulsory Specifications button:

- Foodstuffs, Cosmetics and Disinfectants Act 54 or 1972 (and as amended) which is the basic food safety framework and an enabling act for the Minister, giving powers to create further legal instruments for the enforcement of the Act. The Act also includes a number of standards for fishery products.
- Regulations relating to the labelling and advertising of foodstuffs. GNR 146 (2010) and as amended.
- Regulations relating to the application of the hazard analysis and critical control point system (HACCP system). R908, 2003 and as amended.
- Regulations governing microbiological standards for foodstuffs and related matters R 692 1997 and as amended.
- Regulations relating to metals in foodstuffs Govt Notice R 1518/1994
- Regulations governing the maximum limits for veterinary medicine and stock remedy residues that may be present in foodstuffs. Govt Notice R 1809/1992 and as amended.
- Regulations governing general food hygiene requirements for food premises and the transport of food. Govt Notice R 918/1999 and as amended.
- Regulation Marine Food R 2064 1973 and as amended.
- Compulsory Specification for frozen fish, frozen marine molluscs and frozen products derived therefrom. Govt Notice R 979 2003. This appears to be based on COMESA standards.
- Compulsory Specification for the manufacture, production, processing, and treatment of canned fish, canned marine molluscs and canned crustaceans. Govt Notice R 790 2004. This appears to be based on COMESA standards.

While the basic Act requires all foodstuffs, including imported fishery products to comply with the requirements of South African food safety legislation, it does not require formal certification of compliance by the governments of exporting states and some of the provisions in the legislation may exclude foreign producers from the requirement to comply.
For example, foreign businesses are not currently required to operate HACCP for products to be exporter to South Africa. Given the inability to operate HACCP in Malawi, this may be just as well. However, the lack of a formal requirement to enforce the legislation does not absolve industry or regulators from responsibility to ensure that fishery products are in compliance.

For the private sector exporters, failure to comply carries a high risk of the products being rejected at the border. That would result in a cost to the exporter as the products may be impounded and destroyed if found to be non-compliant during a border inspection. Losses further down the supply chain may incur further costs if consequential losses are incurred by importers and distributors (for example in retrieving and destroying non-compliant products). In any case, the losses to Malawi could be serious where persistent or critical food safety failures occur as that could lead to a loss of markets in South Africa. It is in the commercial interest of Malawi exporters to ensure that their products meet the South African legal standards in order to ensure continued market access.

It is also in the interest of the Malawi government to ensure that products exported from Malawi are compliant with the requirements of the receiving market. This would help to ensure continued exports from Malawi and greater economic activity in the fisheries sector. However, given the very limited facilities available to both the public and private sectors, it would be very difficult to ensure the compliance of fishery products. There are, for example, considerable challenges in carrying out the routine microbiological sampling and analysis required under Regulations governing microbiological standards for foodstuffs and related matters (R 692 1997). There will be a continuing commercial risk to the export of fishery products to South Africa until support services in Malawi are improved, both for the private sector and the government regulators.

**Food safety legislation in Zambia**

Food safety regulation in Zambia is primarily the responsibility of Ministry of Health, note that parts of the website are still under development. In addition the Zambia Bureau of Standards performs a similar role to that of MBS. While a catalogue of standards applicable to fishery products is available, the standards are only available in paper copy. The legislative framework for Zambia is simpler than that for South Africa, comprising:

- Food and Drugs Act 1972 and as amended (comments based on the 2006 consolidated version of the Act)
- SI41 1992 food in airtight containers
- SI244 1972 warranty
- SI251 poisonous substances in food

The Food and Drugs Act 1972 is an enabler act, setting out the framework for the regulation of food safety and food standards and establishing the powers of the minister. Much of the Act could be complied with simply through terms of trade as part of the usual contract between buyer and seller without the need for legislation in Malawi or the intervention of a regulator. However, there are provisions which would be very hard to deal with, notably the requirements for “poisonous substances” where it may prove difficult to exporters to establish whether or not they are in compliance. Assuming that the export trade to Zambia was only of relatively untransformed products such as whole fresh or frozen fish or smoked fish, Malawian producers and exporters may be able to comply with the
Food safety legislation in Zimbabwe

Food safety in Zimbabwe is under the control of Ministry of Health and Child Welfare but it is understood that a Food Control Authority is in the process of being set up. As this has been a work in progress for a number of years, it is unclear when this will come into being or what its powers will be. Information on food safety regulation in Zimbabwe is limited but it is believed that the main legal framework applicable to fishery products includes:

- Food and Food Standards Act 1971 and as amended (comments are based on the consolidated version which includes changes up to 2001)
- Food And Food Standards (Fish And Fish Products) Regulations, 1990 Statutory Instrument 104 of 1990

The legislation is quite general in nature and mainly concerned with labelling, packaging and nutritional declarations. As such, it would require little or no legal adaptation by Malawi and compliance can be achieved mainly through terms of trade as part of the contractual agreements between buyers and sellers.

Conclusions and recommendations

With some exceptions, some Malawian fishery products could meet the legal requirements for trade in the COMESA region under current conditions. The problem is that there is no way of demonstrating compliance easily before export due to the lack of an effective inspectorate and the lack of access to facilities such as laboratories required for the private sector to undertake their own testing. This raises the risk of export shipments being rejected at the border or after distribution in the receiving country with subsequent risk to continued exports and to Malawi’s reputation as a reliable source of fishery products. The promotion of exports of fishery products from Malawi is something which requires careful consideration and planning.

Foremost among the considerations is cost. Setting up and funding the operation of a CA will be expensive and is an absolute necessity for the operation of the regulation of food safety. If a CA is set up without adequate financial resources, it will lack credibility and will be unable to facilitate the export of fishery products. This would apply even if it is only sought to improve the enforcement of food safety in Malawi. The private sector would also incur greater costs, both in improving systems and infrastructure to ensure compliance and as a result of testing to ensure product quality and safety. The rate at which these additional costs can be absorbed will vary considerably and the artisanal sector is likely to be least able to absorb them. Even the commercial sector is likely to require a number of years to carry out the required investments.

A cost/benefit analysis of returns to the private sector and the economic benefits to Malawi could be used as part of the planning process to analyse which export markets will be profitable investments (if any) and how profitability compares with the home market. Preferably, such an analysis would include a review of the social and health benefits of the various options, such as whether more jobs would be created by exports as compared to the
internal market and whether exporting high quality fish protein would have a detrimental impact on food security and nutritional status.

In order to manage and minimise the risks, the following recommendations are made:

It is recommended that the export of fishery products is not attempted until an adequate regulatory system is in place. That should include a fully staffed, trained and equipped inspectorate and the support services needed (e.g. a laboratory) for its effective operation and the enforcement of current legislation and MBS Standards;

It is recommended that access to regional markets should not be considered unless it can be shown to be cost-effective and providing economic benefits. The additional costs of access to regional markets should be calculated in advance and included in the operating budget of the CA before access is attempted;

It is recommended that any changes in legislation to tighten food safety standards and to bring about stricter controls should be phased in over a period of years and the private sector should be given a period of adaptation;

It is recommended that support services for the private sector should be in place (food safety training, laboratory services, consultancy) should be in place before the implementation of stricter food safety legislation to assist them in the process of adaptation;

It is recommended that the CA should draw up a comprehensive training and development plan to allow for the phased and timely development of a fully trained and properly resourced inspectorate which will be able to implement new regulations in full;

It is recommended that Malawi does not attempt to access international markets such as the EU as the costs of compliance would be extremely high and the investments would probably not be justified in the short to medium term.
Annex 1: COMESA comparative legislation study. Detailed comparison against Malawi legislation and food safety controls

Summary of key requirements and key gaps in the systems in Malawi (both govt and private sector)

Terms of trade – a commercial agreement between buyer and seller (importer and exporter); this is part of the contract for the sale of a product. It is not normally subject to regulation (although it is a legally enforceable contract) but may refer to legislation and/or standards with which the product must comply.

Table 5: COMESA comparative legislation study.

<table>
<thead>
<tr>
<th>South African food safety legislation</th>
<th>Name of legislation</th>
<th>Main implementing agency</th>
<th>Key provisions</th>
<th>Equivalent provisions in Malawi/critical gaps</th>
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<td></td>
<td>Foodstuffs, Cosmetics and Disinfectants Act 54 or 1972 (and as amended)</td>
<td>Dept of Health</td>
<td>Covers all foodstuffs which must be fit and safe to eat. This includes imported food stuffs. It creates offences for importers, distributors and sellers of imported foodstuffs who must ensure that the food stuffs they are dealing in comply with the provisions of the Act.</td>
<td>There is no Malawi legislation directly equivalent. There are major gaps in the legislation and there is little in place to ensure that exported foodstuffs could comply with regional standards on fishery products or food safety. There appears to be no equivalent legislation or Standard. This will be a major impediment to the export of anything but primary products (whole fish fresh or frozen, gutted fish fresh or frozen, fish fillets). There are some references which would be applicable in MBS Standards but these are incomplete (e.g. reference to salt, certain contaminants in MS116 for salted fish). In addition, such contaminant levels as are specified in MBS Standards cannot currently be monitored or enforced and so cannot ensure the safety of fishery products.</td>
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<td>Name of legislation</td>
<td>Main implementing agency</td>
<td>Key provisions</td>
<td>Equivalent provisions in Malawi/critical gaps for export.</td>
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<td>Foodstuffs, Cosmetics and Disinfectants Act 54 or 1972 (and as amended)</td>
<td>Dept of Health</td>
<td>Provides for requirements on the labelling of foodstuffs, both in bulk and for retail packaging. The requirements are spelled out in more detail in subsidiary legislation.</td>
<td>There appears to be no equivalent legislation on labelling, apart from MS19, MS624 and MS625 which are not absolute requirements for fishery products. This would not necessarily be a problem as labelling would normally be a requirement under terms of trade between exporter and importer.</td>
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<td>Provides for the prohibition of certain processes, methods, appliances and containers in the manufacture, processing and distribution of foodstuff. The requirements are spelled out in more detail in subsidiary legislation.</td>
<td>This is dealt with in part by MBS Standards on fishery products, but the scope of these is limited.</td>
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<td>The Act establishes that the importer shall be responsible for ensuring foodstuffs comply with the Act.</td>
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<td>The Act establishes provisions for the inspection, sampling and analysis of foodstuffs.</td>
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<td>The Minister (of Health) may act on behalf of another government to inspect goods in transit through South Africa. This could affect products exported from Malawi to another</td>
<td>This would require some form of agreement between the governments of Malawi and South Africa.</td>
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<td>Name of legislation</td>
<td>Main implementing agency</td>
<td>Key provisions</td>
<td>Equivalent provisions in Malawi/critical gaps</td>
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<td>Regulations relating to the labelling and advertising of foodstuffs. GNR 146 (2010) and as amended.</td>
<td>Dept of Health</td>
<td>Provides detailed requirements for the labelling of foodstuffs. Imported foodstuffs must comply with the Regulations. There are some specific requirements for fishery products and for foodstuffs which contain fishery products.</td>
<td>The MBS Standards are incomplete for this. However, as labelling is part of terms of trade, it should be dealt with under any agreement between exporter and importer.</td>
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<td>There is an extensive list of definitions in Art.1. Some of these are specific to fishery products.</td>
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<td>General provisions relating to labelling include the requirement for all foodstuffs to be labelled clearly and in English and (if possible) in one of the other official languages of South Africa. Labelling must be clearly visible and not obstructed by any other packaging. Art. 8 sets out the minimum letter heights for various kinds of labelling.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 9 requires clear identification of the product. In the case of imported products, this must include the name and address of the manufacturer. Instructions for use and a list of ingredients may also be required. Any special storage conditions (e.g. “keep frozen at not more than –xx°C”) have to be included on the label, as does the weight (as specified in the</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<tr>
<td>Regulations relating to the labelling and advertising of foodstuffs. GNR 146</td>
<td>Dept of Health</td>
<td>Art. 10 requires that the country of origin be displayed on packaging. In the case of some processed products, Art. 10 provides guidance on what is needed where raw materials from a number of countries are included.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>(2010) and as amended.</td>
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<td>Art. 11 requires that batch numbers are clearly displayed and with the clear indication that traceability is required. Art. 12 provides for the inclusion of dates including date of manufacture and/or packing and consumer oriented information such as “use by” dates.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 13 and 14 require that the labelling is not misleading and does not make any claims that cannot be justified (e.g. health claims).</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 16 to 29 cover the labelling in ingredients, including added ingredients such as water. A requirement is introduced for the naming of ingredients which must follow that laid down in South African food legislation.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Regulations relating to the labelling and advertising of</td>
<td>Dept of Health</td>
<td>Art. 30 and 31 provide labelling requirements for bulk and small packaging. Some small packaging may be exempt from some labelling.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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## South African food safety legislation

<table>
<thead>
<tr>
<th>Name of legislation</th>
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<th>Equivalent provisions in Malawi/critical gaps</th>
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<tr>
<td>foodstuffs. GNR 146 (2010) and as amended.</td>
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<td>Art. 32 requires that storage instructions are included in the labelling and gives minimum labelling specifications.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 34 requires that any pictorial representation must reflect accurately what is inside the packaging.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 36-42 require the listing of all additives, according to the names specified in Annexure 1.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 43-46 provide guidance on labelling on the inclusion or possible contamination with allergens.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 47 brings in requirements for avoiding misleading declarations. Art. 47 (3) and (4) include specific requirements for fish.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Art. 50 provides extensive regulation on nutritional information in accordance with the definitions and wider South African food legislation.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Regulations relating to the labelling and advertising of</td>
<td>Dept of Health</td>
<td>Art. 51-53 provide very detailed requirements for claims in relation for the foodstuff. This includes some very detailed requirements on</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>foodstuffs. GNR 146 (2010) and as amended.</td>
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<td>how the information must be presented and, in some cases the analytical methods permitted to be used in support of a claim.</td>
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<td>Art. 54 creates some exemptions for certain products. Art. 54 (3) (f) and (g) provide some specific exemptions for unprocessed fishery products.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Specific technical requirements are given in the Annexures.</td>
<td>This should form part of the terms of trade and does not necessarily require legislation.</td>
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<td>Regulations relating to the application of the hazard analysis and critical control point system (HACCP system). R908, 2003 and as amended.</td>
<td>Dept of Health</td>
<td>This Regulation brings in a requirement for those involved in handling specified foodstuff to operate a food safety system based on HACCP. Food business operators exporting fishery products to South Africa are not currently required to conform with this Regulation. Once the fishery products have been imported, the South African food business operator is required to operate HACCP.</td>
<td>Neither the public nor the private sector would be in a position to comply with HACCP requirements at the moment, nor in the foreseeable future.</td>
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<td>HACCP must be operated in compliance with CODEX recommended international code of practice general principles of food hygiene CAC/RCP 1-1969, Rev. 4-20031. Note also to refer to CODEX Code of practice for fish and fishery products (CAC/RCP 52-2003) for</td>
<td>Neither the public nor the private sector would be in a position to comply with HACCP requirements at the moment, nor in the foreseeable future. Note that while the MBS Standards do make reference to CODEX, the Standards themselves are at best partially</td>
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<td>South African food safety legislation</td>
<td>Dept of Health</td>
<td>specific guidance on fishery products.</td>
<td>compliant with the requirements of CODEX.</td>
</tr>
<tr>
<td>Regulations governing microbiological standards for foodstuffs and related matters R 692 1997 and as amended.</td>
<td></td>
<td>The Regulation lays down specific requirements for specified fishery products.</td>
<td>While some MBS Standards do make reference to microbiological standards for fishery products, such standards are currently unenforceable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Art. 6 (1) lays down requirements for partly-cooked or uncooked fishery products (“partly-cooked” is not defined in the Regulation). Specific requirements are:</td>
<td>There would be no way of enforcing this currently but, as histamine is not likely to be found in any fishery products from Malawi, this is not necessarily a matter of concern. Otherwise, it may be considered to be part of the terms of trade. The analysis of bacterial contamination is currently not available; introducing this should be a priority. It is unlikely that it will be economic to create facilities for the analysis of antibiotics (or residues of other veterinary products) in Malawi.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Histamine as measured by AOAC method 977.13/1990 should not exceed 20mg/100g as an absolute limit and the indicative level is 10mg/100g.</td>
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<tr>
<td></td>
<td></td>
<td>b) No antibiotics shall be present (analytical methods not specified).</td>
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<td></td>
<td></td>
<td>c) <em>Salmonella, Shigella, Vibrio cholerae</em> and <em>V parahaemolyticus</em> absent from 20g sample.</td>
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<td></td>
<td>d) Coagulase-positive <em>Staphylococcus aureus</em> absent from 20g sample.</td>
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<td></td>
<td>e) Except in the case of oysters, mussels and clams, the number of <em>Escherichia coli</em> Type 1 organisms shall not exceed 10 per 100g</td>
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<td>f) In the case of oysters, mussels or</td>
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</tr>
<tr>
<td>South African food safety legislation</td>
<td></td>
<td>clams, the number of <em>Escherichia coli</em> Type 1 shall not exceed 500 per 100g. g) The total colony count (presumed to be equivalent to aerobic plate count) for organisms shall not exceed 1 million per g when such foodstuff is tested by the pour-plate method on plate count agar at 30°C for 72 hours and, in the case of oysters, mussels or clams, the total colony count shall not apply</td>
<td></td>
</tr>
<tr>
<td>Regulations governing microbiological standards for foodstuffs and related matters R 692 1997 and as amended.</td>
<td>Dept of Health</td>
<td>Art. 6 (2) lays down requirements for cooked fishery products: (a) a histamine content of more than 10 mg per 100 grams of the foodstuff, when tested according to AOAC method 977.13 (1990), shall indicate decomposition of the foodstuff, and more than 20 mg per 100g shall render the foodstuff unsafe for human consumption; (b) no antibiotics shall be present; (c) no organisms of the genera <em>Salmonella</em> and <em>Shigella</em> and no species of <em>Escherichia coli</em> Type 1, <em>Vibrio cholerae</em> and <em>V.parahaemolyticus</em> shall be present in 20g; (d) no coagulase-positive <em>Staphylococcus</em></td>
<td>See above.</td>
</tr>
</tbody>
</table>
### South African food safety legislation

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>aureus shall be present in 20g; (e) the number of coliform organisms other than <em>Escherichia coli</em> Ty 1 shall not exceed 1 000 per 100g; and (f) the total colony count of organisms shall not exceed 100 000 per g when such a foodstuff is tested by the pour-plate method on plate-count agar at 30°C for 72 hours.</td>
<td>Dept of Health</td>
<td>Specified microbiological methods are given in Annex A.</td>
<td>See above.</td>
</tr>
<tr>
<td>Regulations relating to metals in foodstuffs Govt Notice R 1518/1994</td>
<td>Dept of Health</td>
<td>Levels for metals (Pb, Cu, Hg, Cd, As, Sn, Sb) in specified fishery products are given in the Annexure.</td>
<td>Analysis cannot currently be carried out but should be available at MBS in the near future. However, the funding requirement for such a scheme for the monitoring of such contaminants would be substantial.</td>
</tr>
<tr>
<td>Regulations governing the maximum limits for veterinary medicine and stock remedy residues that may be present in foodstuffs. Govt Notice R 1809/1992 and as</td>
<td>Dept of Health</td>
<td>The only specified level for (farmed) fish is for tetracyclines MRL of 0.1 mg/kg.</td>
<td>It is unlikely that this will be economic to carry out in Malawi.</td>
</tr>
</tbody>
</table>
South African food safety legislation

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<tr>
<td>amended.</td>
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</tr>
<tr>
<td>Regulations governing general food hygiene requirements for food premises and the transport of food. Govt Notice R 918/1999 and as amended.</td>
<td>Dept of Health</td>
<td>This Regulation lays down detailed requirements for food premises, food handling and food transport, including personnel carrying out various tasks. There are some specific requirements and exemptions for fishery products. Much of this would not apply to fishery products from Malawi unless they were being transported in South Africa.</td>
<td>Probably no legal requirement for Malawi regulators.</td>
</tr>
<tr>
<td>Annexure D Reg 8(4) gives requirements for:</td>
<td></td>
<td>Frozen fish must be kept at a temperature not greater than -12°C. Raw, unprocessed fishery products must be kept at a temperature not greater than +4°C.</td>
<td>MBS Standards would meet or exceed these requirements. However, enforcement of these standards is at best, inconsistent.</td>
</tr>
<tr>
<td>Exemptions are permitted:</td>
<td></td>
<td>Unprocessed raw fishery products are exempt while being transported during delivery as long as the period does not exceed 1 hour and the surface temperature does not exceed 25°C. Fishery products being transported from the place of harvest/capture/landing are exempt for requirements to keep the product in containers as specified in Art. 13 (3). This is</td>
<td>While there are no similar requirements in Malawi, compliance with these requirements are straightforward.</td>
</tr>
<tr>
<td>Name of legislation</td>
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<td>permitted for a “suitable time limit” (not specified).</td>
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</tr>
<tr>
<td>Regulation Marine Food R 2064 1973 and as amended.</td>
<td>Dept of Health</td>
<td>Provides limited standards for some fishery products of marine origin. Unlikely to apply unless Malawi imports fishery products for processing and re-export.</td>
<td>Not likely to apply.</td>
</tr>
<tr>
<td>Compulsory Specification for frozen fish, frozen marine</td>
<td>Dept of Health</td>
<td>Much of this applies only to South African food business operators. The Standard contains extensive, detailed guidance on the construction and operation of premises handling fishery products (Section 3). There are also detailed standards for ingredients and products (Section 4). Section 5 deals with packaging, freezing, glazing and storage and largely repeats what is in the Regulations. This includes testing and analytical methods. Section 6 shows the standards for packaging and labelling and repeats what is in the Regulation. The rest of the Standard deals with detailed sampling and analysis.</td>
<td>Not likely to apply but may form part of terms of trade.</td>
</tr>
<tr>
<td>molluscs and frozen products derived therefrom. Govt Notice R 979 2003.</td>
<td></td>
<td>The Standard applies to canned products only and it not likely to apply to Malawi.</td>
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**South African food safety legislation**

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<tr>
<td>canned fish, canned marine molluscs and canned crustaceans. Govt Notice R 790 2004</td>
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**Zambian food safety legislation**

<table>
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</thead>
<tbody>
<tr>
<td>Food and Drugs Act 1972 and as amended (comments based on the 2006 consolidated version of the Act)</td>
<td>Ministry of Health</td>
<td>Establishes standards for a range of foodstuffs, including fishery products and sets down general hygiene and food safety requirements for the production of foodstuffs. It applies to imported foods where specified.</td>
<td>This is essentially enabling legislation, creating powers for the Minister and listing food safety requirements and standards. Some equivalent legislation is in place in Malawi.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Art. 8 states that all labelling be in English. Other languages may be used in addition. Art. 9 states that all information required under the Act must be clearly displayed on the label</td>
<td>This would form part of the terms of trade and equivalent legislation may not be necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Art. 22 states that certain products prescribed by Standards under the Act may not contain any ingredients other than those permitted in the Standard. Art. 23 deals with products for which no Standard is specified and which may only contain such additives and ingredients as</td>
<td>This would form part of the terms of trade and equivalent legislation may not be necessary.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Zambian food safety legislation</td>
<td></td>
<td>permitted under Schedule 19 of the Act. Art. 24 sets out the conditions for the use of specified additives and ingredients. Art. 25 and 26 deal with adulteration and the levels which may be tolerated for certain foodstuffs.</td>
<td></td>
</tr>
<tr>
<td>Food and Drugs Act 1972 and as amended (comments based on the 2006 consolidated version of the Act)</td>
<td>Ministry of Health</td>
<td>Art. 28 and 29 deal with the requirements for packaging (see also S1141). Art. 30 to 49 cover the labelling requirements. There are specific requirements for some foodstuffs. This includes standard requirements for labelling of weight/volume and country of origin. Art. 115 to 122 state the requirements for food colourings and their use. Art. 198 to 218 deal with the requirements for the use of and standards for fats and oils (which may be used as an ingredient or in the processing of fishery products).</td>
<td>This would form part of the terms of trade and equivalent legislation may not be necessary. This would form part of the terms of trade and equivalent legislation may not be necessary. This would form part of the terms of trade and equivalent legislation may not be necessary. However, it may be necessary to regulate the use of colourings and to provide for the monitoring of unauthorised colourings. This is not likely to apply to the primary products exported from Malawi.</td>
</tr>
<tr>
<td>Food and Drugs Act 1972 and as amended (comments based on</td>
<td>Ministry of Health</td>
<td>Art. 219 to 243 deal with the requirements for the use of and the standards for food flavourings (probably would not apply to likely products exported from Malawi.</td>
<td></td>
</tr>
</tbody>
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*Appendix E: Page 23*
<table>
<thead>
<tr>
<th>Name of legislation</th>
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<tr>
<td>the 2006 consolidated version of the Act)</td>
<td></td>
<td>fishery products to be exported from Malawi).</td>
<td></td>
</tr>
<tr>
<td>Art. 244 to 281 deal with the requirements for the use of and standards for fruit and vegetables, some of which may be used in prepared fishery products.</td>
<td></td>
<td>This is not likely to apply to the primary products exported from Malawi.</td>
<td></td>
</tr>
<tr>
<td>Art. 324 provides for the control of poisonous substances on foodstuffs. Detailed limits are set on Schedule 18.</td>
<td></td>
<td>This is a major problem due to the cost of monitoring and compliance. Currently, it would have to form part of the terms of trade but to be able to meet regional export requirements, Malawi must bring in contaminant and residue monitoring.</td>
<td></td>
</tr>
<tr>
<td>Art. 325 to 334 deal with the requirements for the use of and the standards for food additives. Further specifications are given in Schedule 19.</td>
<td></td>
<td>This is not likely to apply to the primary products exported from Malawi.</td>
<td></td>
</tr>
<tr>
<td>Art. 335 and 336 deal with the Standard for salt which may be used in foodstuffs.</td>
<td></td>
<td>It has not been possible to get sight of the Malawi standard for salt (ZS COMESA 019) but the basic specification given in Art. 335 and 336 should match that in the MBS Standard.</td>
<td></td>
</tr>
<tr>
<td>Food and Drugs Act 1972 and as amended (comments based on the 2006 consolidated)</td>
<td>Ministry of Health</td>
<td>Art. 355 to 367 deal with the specific requirements for fishery products.</td>
<td>The MBS Standards are not direct equivalents and there is no legislation matching the Zambian requirements. However, this could be met through terms of trade.</td>
</tr>
</tbody>
</table>
## Zambian food safety legislation

<table>
<thead>
<tr>
<th>Name of legislation</th>
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<tbody>
<tr>
<td>version of the Act)</td>
<td></td>
<td>Art. 355 to 357 deal with definitions and the basic requirements for fish which are detailed in Schedule 19.</td>
<td>n/a</td>
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<td>Art. 358 provides the definition for fish meat.</td>
<td>n/a</td>
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<td></td>
<td>Art. 359 defines what is considered as adulteration of fishery products and what exemptions are permitted.</td>
<td>These are similar to those in Zimbabwean legislation and presumably match the COMESA common standards. Malawi will need to find a way to match these, even for the internal market.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Art. 360 provides the Standard for prepared fish and prepared fish meat, listing which additives may be used for particular products.</td>
<td>These are similar to those in Zimbabwean legislation and presumably match the COMESA common standards. Malawi will need to find a way to match these, even for the internal market.</td>
</tr>
<tr>
<td>Food and Drugs Act</td>
<td>Ministry of Health</td>
<td>Art. 361 to 363 deal with the definition of, Standard for and use of fillers and binders in fishery products.</td>
<td>These are similar to those in Zimbabwean legislation and presumably match the COMESA common standards. Malawi will need to find a way to match these, even for the internal market.</td>
</tr>
<tr>
<td>1972 and as amended</td>
<td></td>
<td>Art. 364 deals with the Standard for preserved fish products and details materials which can be used in their preparation and preservation.</td>
<td>These are similar to those in Zimbabwean legislation and presumably match the COMESA common standards. Malawi will need to find a way to match these, even for the internal market.</td>
</tr>
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</table>
## Zambian food safety legislation

<table>
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<tr>
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</tr>
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<tbody>
<tr>
<td>Food and Drugs Act 1972 and as amended (comments based on the 2006 consolidated version of the Act)</td>
<td>Ministry of Health</td>
<td><strong>Art. 367</strong> deals with the requirements for smoked fishery products sealed in airtight packaging, including specific requirements for the control of <em>Clostridium botulinum</em>.</td>
<td>This could be a problem if any product is packed in airtight containers. Monitoring for <em>C. botulinum</em> and botulotoxin is difficult and expensive.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Art. 389 to 409</strong> deal with the Standards for vitamins and minerals and the requirements for labelling of nutritional declarations and nutritional claims on foodstuffs.</td>
<td>This can be met under terms of trade.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Art. 410 to 422</strong> deal with hygiene requirements. The Act does not state that these are a requirement for countries exporting to Zambia.</td>
<td>As long as countries exporting fishery products to Zambia are not required to prove that the manufacture, handling, storage and transport meets these standards, it will not be a problem. If such a requirement were so be brought in (e.g. as part of COMESA harmonisation requirements) it would pose major problems for the Malawi regulator(s) and industry.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule 2 lists the names permitted to be used for named fishery products (and ingredients which may be used in their manufacture or preservation).</td>
<td>This can be met under terms of trade.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Schedules may provide detailed specifications of food materials which may be used in the manufacture and/or preservation</td>
<td>This can be met under terms of trade.</td>
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<tr>
<td><strong>Food and Drugs Act 1972 and as amended</strong> (comments based on the 2006 consolidated version of the Act)</td>
<td>Ministry of Health</td>
<td>Schedule 18 covers the limits for contaminants such as heavy metals and pesticides in fishery products.</td>
<td>This can be met under terms of trade. However, it can be anticipated that under trade harmonisation rules, the Malawi food safety authorities would be expected to monitor contaminants which would be a substantial expense.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule 19 covers food additives which may be used in specified food products.</td>
<td>This can be met under terms of trade.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule 21 covers foods to which a vitamin, mineral for amino acid may be added. No fishery products are listed.</td>
<td>This can be met under terms of trade.</td>
</tr>
<tr>
<td><strong>SI41 1992 food in airtight containers</strong></td>
<td>Ministry of Health</td>
<td>This requires that food in airtight containers may not be sold if the containers show any sign of defect.</td>
<td>This can be met under terms of trade.</td>
</tr>
<tr>
<td><strong>SI244 1972 warranty</strong></td>
<td>Ministry of Health</td>
<td>This requires that the manufacturer or distributor must provide a written warranty in the form specified in this Statutory Instrument stating that the foodstuff conforms to any accompanying declaration of content and/or analysis.</td>
<td>This can be met under terms of trade.</td>
</tr>
<tr>
<td><strong>SI251 poisonous substances in food</strong></td>
<td>Ministry of Health</td>
<td>This lays down the limits for poisonous substances are listed in Schedule 18 of the Act.</td>
<td>This can be met under terms of trade. However, it can be anticipated that under trade harmonisation rules, the Malawi food safety authorities would be expected to monitor contaminants which would be a substantial expense.</td>
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### Zambian food safety legislation

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<td>safety authorities would be expected to monitor contaminants which would be a substantial expense.</td>
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### Zimbabwean food safety legislation

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</tr>
</thead>
<tbody>
<tr>
<td>Food and Food Standards Act 1971 and as amended (comments are based on the consolidated version which includes changes up to 2001)</td>
<td>Ministry of Health, Department of Environmental Public Health</td>
<td>Establishes standards for all foodstuffs, and sets down general hygiene and food safety requirements for the production of foodstuffs. It applies to imported foods where specified. There are no specific references to fishery products.</td>
<td>This is very general legislation which simply sets out coverage and creates powers. More detailed legislation deals with specific requirements.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Art. 4 (1) deals with adulteration of foods. This is quite prescriptive but there are some permitted additives and ingredients allowed. There is also a requirement for any declaration of content and/or ingredients must be accurate. Art. 4 (2) deals with processes and ingredients which are permitted (although these are not specified in detail).</td>
<td>This could be dealt with under terms of trade.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Art. 5 states that no imported food may be adulterated, falsely described, unwholesome</td>
<td>This could be dealt with under terms of trade.</td>
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Zimbabwean food safety legislation

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<tr>
<td></td>
<td></td>
<td>or unfit for human consumption.</td>
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<tr>
<td></td>
<td></td>
<td>The remainder of the text mainly deals with administrative powers and procedures.</td>
<td></td>
</tr>
<tr>
<td>Food And Food Standards (Fish And Fish Products)</td>
<td>Ministry of Health, Department of Environmental Public Health</td>
<td>Art. 2 confirms that the Standard applies to all fishery products, including imports.</td>
<td>The Standard is quite general and deals more with product description and content rather than food safety and so could be dealt with under terms of trade.</td>
</tr>
<tr>
<td>Regulations, 1990 Statutory Instrument 104 of 1990</td>
<td></td>
<td>Art. 3 provides definitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Art. 4 details additives which may be used with prepared fish and fishery products.</td>
<td>This can be dealt with under terms of trade.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establishes the requirements for labelling of foodstuffs.</td>
<td></td>
</tr>
<tr>
<td>Food and Food Standards (Food Labelling) Regulations,</td>
<td>Ministry of Health, Department of Environmental Public Health</td>
<td>Art. 4 requires that all packed food labelling describes accurately the products contained in the packaging.</td>
<td>This can be dealt with under terms of trade.</td>
</tr>
<tr>
<td>2002 Statutory Instrument 265 of 2002.</td>
<td></td>
<td>Art. 5 requires that all packed food labelling contains specified details, including a “best before” date. A declaration on processes used in preparation may be required. The form to be used on labelling is specified.</td>
<td>This can be dealt with under terms of trade.</td>
</tr>
<tr>
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<td>Art. 6 lays out what is permitted in nutritional claims for foodstuffs.</td>
<td>This can be dealt with under terms of trade.</td>
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### Zimbabwean food safety legislation

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<td>The First Schedule details the permitted names to be used for certain foodstuffs, additives and ingredients.</td>
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<td>The Second Schedule Art. 2 provides and exemption for fresh fish to be labelled with a “use by” or “best before” date. Part A specifies how some nutritional statements are to be applied. Parts B and C deal with nutritional labelling for specified nutrients.</td>
<td>This can be dealt with under terms of trade.</td>
</tr>
</tbody>
</table>
Appendix F: Malawi Food Safety Legislation Review

1. BACKGROUND AND OBJECTIVES
   1.1. BACKGROUND
   1.2. OBJECTIVE

2. OUTPUTS

2.1. Malawi legislation which applies to fishery products

2.2. Planned legislation which may apply directly to fishery products
   2.2.1. Fisheries Policy and guiding principle
   3.2.2. Fisheries Training Goal
   3.2.3. Fisheries Enforcement Goal
   3.2.4. Fish Marketing Goal
   3.2.5. A Micro, Small and Medium Enterprise (MSME) Policy and Strategy
   3.2.6. National Nutrition Policy and Strategic Plan

2.3. Key provisions of the main legislation on fishery products safety and quality
   2.3.1. Laboratory Capacity for Food Safety Assurance
   2.3.2. Food-borne Disease Surveillance
   2.3.3. Human Resources
   2.3.4. What is being done?

2.4. Key agencies responsible for the enforcement of food safety and quality for fishery products and their roles in developing and enforcing legislation on fishery products
   2.4.1. The Malawi Bureau of Standards (MBS)
   2.4.2. The Consumer Association of Malawi (CAMA)
   2.4.3. Ministry of Health
   2.4.4. Ministry of Local Government
   2.4.5. Fisheries Department
   2.4.6. Department of Nutrition, HIV and AIDS

3. CHALLENGES
   3.1. On Safety and Quality of fishery products legislation
      3.1.1. Weak enforcement of Legislation
      3.1.2. Lack of Adequate Information from Government
      3.1.3. Inadequate Dissemination of Research Findings
      3.1.4. Revision of Fines and Penalties
      3.1.5. Women Participation
      3.1.6. Bribery and Corruption
   3.2. On quality and safety issues in fish handling, processing, distribution and marketing
   3.3. On Food safety systems

4. RECOMMENDATIONS
   4.1. On Safety and Quality of fishery products legislation
   4.2. On Food safety systems

5. CONCLUSION

6. REFERENCES
   6.1. Bibliography
   6.2. Legislation
Appendix G: Organisation chart for the Malawi Bureau of Standards

Source: Catalogue of Malawi Standards (2012)
Appendix H: MBS Service Inception Training Curriculum and list of courses offered by MBS

MALAWI BUREAU OF STANDARDS

CURRICULUM FOR INTERNAL QUALITY AUDITORS/INSPECTORS
TRAINING FOR PRODUCT/SERVICE CERTIFICATION

The training takes three days and has three training modules on the following topics;

1. **MODULE 1**  
   *(General Introductory Course on the Organization)*
   
   1.1 Chapter 1: The Malawi Bureau of Standards Act  
   1.2 Chapter 2: Standardisation Marks, Rules and Regulations  
   1.3 Chapter 3: Conducting audits  
   1.4 Chapter 4: Schemes of supervision and control

2. **MODULE 2**  
   *(Product Quality Auditing)*
   
   2.1 Chapter 1: An overview of product quality auditing  
   2.2 Chapter 2: Audit planning and preparation  
   2.3 Chapter 3: Quality Auditors General, qualifications and code of ethics  
   2.4 Chapter 4: Administrative procedures for quality auditing

3. **MODULE 3**  
   *(Quality Assurance and Quality Management)*
   
   3.1 Chapter 1: Quality Assurance/Quality Management – overview  
   3.2 Chapter 2: Quality Auditing of Food Establishments  
   3.3 Chapter 3: HACCP – a food safety management tool  
   3.4 Chapter 4: Sampling Techniques
## List of training courses offered by the MBS

<table>
<thead>
<tr>
<th>S/N</th>
<th>Course Title and Code</th>
<th>Target Group</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quality Management Systems Awareness for Top Management (BS/QAD/20/8/01)</td>
<td>Top management for organisations i.e. Chief Executive Officers, Directors, and Managers.</td>
<td>On request, ½ day</td>
</tr>
<tr>
<td>2</td>
<td>Quality Management System Development (BS/QAD/20/8/02)</td>
<td>Those responsible for quality of operations and processes, supervisors, managers and management representatives who would be key in the development of a Quality Management System.</td>
<td>5 days</td>
</tr>
<tr>
<td>3</td>
<td>Quality Management System Auditing (BS/QAD/20/8/03)</td>
<td>As in course number 2 above. Attendance of QMS development training is a prerequisite for this course.</td>
<td>5 days</td>
</tr>
<tr>
<td>4</td>
<td>Developing of a Laboratory Management System according to MS-ISO 17025 (BS/QAD/20/8/04)</td>
<td>Officers, Technicians and Assistants working in testing and calibration laboratories and instrumentation workshops.</td>
<td>5 days</td>
</tr>
<tr>
<td>5</td>
<td>Developing of a Laboratory Management System according to MS-ISO 15189 (BS/QAD/20/8/04)</td>
<td>Officers, Technicians and Assistants working in testing and calibration laboratories and instrumentation workshops.</td>
<td>5 days</td>
</tr>
<tr>
<td>6</td>
<td>Quality Management System Awareness for the workforce (BS/QAD/20/8/05)</td>
<td>General workforce as quality is the responsibility of all workers.</td>
<td>1 day</td>
</tr>
<tr>
<td>7</td>
<td>Food Safety Management System according to ISO 22000 (BS/QAD/20/9/01)</td>
<td>Those in food production and processing facilities i.e supervisors, managers and management representatives who would be involved in the development and implementation of food safety management system.</td>
<td>5 days</td>
</tr>
<tr>
<td>8</td>
<td>Food Hygiene according to MS 21 – Code of Hygienic Practices for Food and Food processing Units (BS/QAD/20/9/02)</td>
<td>Those in food production and processing facilities i.e. supervisors, food handlers, managers and management representatives.</td>
<td>5 days</td>
</tr>
<tr>
<td>9</td>
<td>Personal Hygiene for Food Handlers according to MS 21 – Code of Hygienic Practices for Food and Food processing Units (BS/QAD/20/9/02)</td>
<td>Those in food production and processing facilities i.e. supervisors, food handlers, managers and management representatives.</td>
<td>1 day</td>
</tr>
<tr>
<td>10</td>
<td>Top Management Awareness</td>
<td>Top management for organisations i.e. Chief Executive Officers,</td>
<td>½ day</td>
</tr>
<tr>
<td>S/N</td>
<td>Course Title and Code</td>
<td>Target Group</td>
<td>Duration</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>8</td>
<td>on Food Safety Management system according to ISO22000 (BS/QAD/20/9/03)</td>
<td>Directors, and Managers.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Food Safety Management System Awareness (BS/QAD/20/9/04)</td>
<td>General workforce working in food processing establishments.</td>
<td>1 day</td>
</tr>
<tr>
<td>10</td>
<td>Environmental Management Systems (EMS) Top Management Awareness (BS/QAD/20/10/02)</td>
<td>Top management for organisations i.e. Chief Executive Officers, Directors, and Managers.</td>
<td>½ day</td>
</tr>
<tr>
<td>11</td>
<td>Environmental Management System (EMS) Development based on ISO-MS 14001 (BS/QAD/20/10/01)</td>
<td>Those responsible for environmental and waste management, pollution control and related operations both in government, non-governmental, and private organisations.</td>
<td>5 days</td>
</tr>
<tr>
<td>12</td>
<td>Environmental Management Systems (EMS) General Staff Awareness (BS/QAD/20/10/03)</td>
<td>General workforce as implementing EMS which is responsibility of all workers.</td>
<td>1 day</td>
</tr>
<tr>
<td>13</td>
<td>Environmental Management Systems (EMS) Auditing (BS/QAD/20/10/04)</td>
<td>As in course number 2 above. Attendance of EMS development training is a prerequisite for this course.</td>
<td>5 days</td>
</tr>
<tr>
<td>14</td>
<td>Integrated quality safety, health and environmental management system – Top management awareness. Combination of MS-ISO 14001 and MS 714 (OHSAS 18001)</td>
<td>Top management for organisations i.e. Chief Executive Officers, Directors, and Managers.</td>
<td>½ day</td>
</tr>
<tr>
<td>15</td>
<td>Integrated safety, health and environmental management system – System development</td>
<td>Those responsible for safety, health and environmental (SHE) management and related operations both in government, non-governmental, and private organisations.</td>
<td>5 days</td>
</tr>
<tr>
<td>16</td>
<td>Integrated safety, health and environmental management system – general staff awareness</td>
<td>General workforce as implementing SHE management which is responsibility of all workers.</td>
<td>1 day</td>
</tr>
<tr>
<td>17</td>
<td>Principles of sampling and testing with reference to selected food and non-food products based on MS-ISO 17020 (BS/QAD/20/11/01)</td>
<td>Those in production and processing facilities i.e. supervisors, food handlers, managers and management representatives.</td>
<td>5 days</td>
</tr>
</tbody>
</table>
Appendix I: Revised Government of Malawi Standard Costs for Common Goods & Services
Received from Mrs. Chikondi Pasani on 19th January 2012

**GOVERNMENT OF MALAWI**

**STANDARD COSTS FOR COMMON GOODS AND SERVICES**

1. **CONFERENCE FACILITIES**

<table>
<thead>
<tr>
<th>Description</th>
<th>(MK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation</td>
<td>16,000.00</td>
</tr>
<tr>
<td>Meals (per person)</td>
<td>3,500.00</td>
</tr>
<tr>
<td>Refreshments / Tea (per person per break including water)</td>
<td>1,950.00</td>
</tr>
<tr>
<td>Hall hire (per day)</td>
<td>35,000.00</td>
</tr>
<tr>
<td>Projector hire (per day)</td>
<td>18,000.00</td>
</tr>
</tbody>
</table>

2. **STATIONERY**

<table>
<thead>
<tr>
<th>Description</th>
<th>Standard cost (MK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A3 Envelop (250)</td>
<td>6,875.00</td>
</tr>
<tr>
<td>A4 Envelop (250)</td>
<td>4,500.00</td>
</tr>
<tr>
<td>Blank CDs</td>
<td>200.00</td>
</tr>
<tr>
<td>Desk calculators</td>
<td>1,800.00</td>
</tr>
<tr>
<td>Envelop, small (500)</td>
<td>3,950.00</td>
</tr>
<tr>
<td>Flat files / Folders</td>
<td>80.00</td>
</tr>
<tr>
<td>Flip charts</td>
<td>950.00</td>
</tr>
<tr>
<td>Lever arch files</td>
<td>495.00</td>
</tr>
<tr>
<td>Markers (box)</td>
<td>800.00</td>
</tr>
<tr>
<td>Masking tape</td>
<td>400.00</td>
</tr>
<tr>
<td>Notebooks</td>
<td>50.00</td>
</tr>
<tr>
<td>Pencils</td>
<td>75.00</td>
</tr>
<tr>
<td>Pens (box of 50)</td>
<td>1,500.00</td>
</tr>
<tr>
<td>Punch machine</td>
<td>1,650.00</td>
</tr>
<tr>
<td>Reams of paper</td>
<td>895.00</td>
</tr>
<tr>
<td>Staple wires</td>
<td>120.00</td>
</tr>
<tr>
<td>Stapler machine</td>
<td>1,850.00</td>
</tr>
<tr>
<td>Toner - Drum Q3964</td>
<td>47,000.00</td>
</tr>
<tr>
<td>Toner - Ink jet 22A Colour</td>
<td>5,500.00</td>
</tr>
<tr>
<td>Toner - Ink jet 27A Black</td>
<td>5,000.00</td>
</tr>
<tr>
<td>Toner gestetner 2212</td>
<td>11,000.00</td>
</tr>
<tr>
<td>Toner Q2612A</td>
<td>17,000.00</td>
</tr>
<tr>
<td>Toner Q3960</td>
<td>25,000.00</td>
</tr>
<tr>
<td>Toner Q3961</td>
<td>26,000.00</td>
</tr>
<tr>
<td>Toner Q3962</td>
<td>26,000.00</td>
</tr>
<tr>
<td>Toner Q3963</td>
<td>26,000.00</td>
</tr>
</tbody>
</table>
### 3. DAILY SUBSISTENCE ALLOWANCES

<table>
<thead>
<tr>
<th>Description</th>
<th>(MK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lump sum payments (all inclusive rate)</td>
<td>17,000.00</td>
</tr>
<tr>
<td>Where Bed and Breakfast is provided</td>
<td>6,000.00</td>
</tr>
<tr>
<td>Where Bed, Breakfast and Lunch are provided</td>
<td>3,750.00</td>
</tr>
<tr>
<td>Full Board (Bed, Breakfast, Lunch &amp; Dinner provided)</td>
<td>2,500.00</td>
</tr>
<tr>
<td>Lunch allowance</td>
<td>1,250.00</td>
</tr>
</tbody>
</table>

### 4. Fuel Costs (Price per litre)

<table>
<thead>
<tr>
<th>Description</th>
<th>(MK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petrol</td>
<td>390</td>
</tr>
<tr>
<td>Diesel</td>
<td>360</td>
</tr>
</tbody>
</table>

Note that there are rumours that the fuel price may hike in the short term but I have included the current prices.
Appendix J: MCF Syllabus content for the pre-service and diploma course modules on post-harvest technology and food safety

*Notes by Ian Watson are in italics.*

**A. Outline syllabus for the pre-service certificate course**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Objective</th>
</tr>
</thead>
</table>
| Fish composition       | • State the chemical composition of fish and the percentage value of each component.  
                          • Describe the nutritive value of each component.  
                          • Explain the effect of cooking and processing fish on its nutritional value.                                                   |
| Post-mortem changes    | • Define the term rigor mortis.  
                          • State the three stages of rigor mortis.  
                          • Describe changes in the condition of the fish during the stages of rigor mortis.  
                          • Explain how rigor mortis affects the handling and processing of fish.  
                          • Describe the spoilage pattern caused by the following:  
                            - activities of microorganisms  
                            - activities of enzymes  
                            - insect infestation  
                          • Evaluate fish quality by observing colour, taste, odour, texture, and slime.                                                  |
| Fresh fish handling    | • Demonstrate practices to maintain hygienic conditions on board a fishing vessel.  
                          • Remove guts and gills from a variety of fresh fish.  
                          • Wash fish to remove slime.  
                          • Explain the effect of bruising on fish quality.  
                          • Store fish in boxes, pounds, and tins in order to maintain quality.  
                          • Explain the effect of temperature on spoilage rate.  
                          • Describe the qualities and applications of flake ice and block ice.  
                          • Assess ice ratios and pack boxed fish in ice.  
                          • Describe good handling practices at a fish landing station and at a beach.                                                   |
| Fish preparation       | • Sharpen filleting and gutting knives using a wet stone.  
                          • Observe safe working practices when using knives.  
                          • State the reason for gutting fish.  
                          • Gut various sizes and types of fish.  
                          • De-scale fresh fish.  
                          • De-bone fresh fish.  
                          • Assess the suitability of various fish for filleting.  
                          • Fillet chambo, kampango and ncheni and measure the percentage of waste.  
                          • Split various species of fish. |
<table>
<thead>
<tr>
<th>Topic</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish curing</td>
<td>• Summarize the effect of the main methods of fish preservation on shelf life and quality.</td>
</tr>
<tr>
<td></td>
<td>• Explain why salt reduces fish spoilage.</td>
</tr>
<tr>
<td></td>
<td>• State the availability and cost of different types of salt.</td>
</tr>
<tr>
<td></td>
<td>• Calculate the concentration of brine solution for various circumstances.</td>
</tr>
<tr>
<td></td>
<td>• Describe the chemical changes in the fish which occur during the smoking process.</td>
</tr>
<tr>
<td></td>
<td>• Explain why some species of fish are more suitable for smoking than others.</td>
</tr>
<tr>
<td></td>
<td>• State the suitability of various woods and combustion products for smoking.</td>
</tr>
<tr>
<td></td>
<td>• Calculate the quantity of fuel wood required per kilo of fish using traditional methods of smoking.</td>
</tr>
<tr>
<td></td>
<td>• Explain the effect on forestry resources.</td>
</tr>
<tr>
<td></td>
<td>• Construct an open pit for smoking of fish.</td>
</tr>
<tr>
<td></td>
<td>• Use an open-pit smoker to produce fish with good eating qualities.</td>
</tr>
<tr>
<td></td>
<td>• Construct an improved brick or an ivory kiln and calculate the cost.</td>
</tr>
<tr>
<td></td>
<td>• Carry out correctly the following stages in the use of the improved kiln:</td>
</tr>
<tr>
<td></td>
<td>• Lighting and controlling the fire                                               - Stacking the racks</td>
</tr>
<tr>
<td></td>
<td>• Monitoring the condition of the fish                                             - Cleaning the racks</td>
</tr>
<tr>
<td></td>
<td>• Recognize and state the causes of charring.</td>
</tr>
<tr>
<td></td>
<td>• Pack the fish for transport.</td>
</tr>
<tr>
<td></td>
<td>• Calculate the quantity of ice required for a given amount of fish.</td>
</tr>
<tr>
<td>Fish drying</td>
<td>• Describe the effect of moisture removal on bacterial and autolytic activity.</td>
</tr>
<tr>
<td></td>
<td>• Describe the suitability of various fish species for drying.</td>
</tr>
<tr>
<td></td>
<td>• Estimate the cost of constructing sun drying racks.</td>
</tr>
<tr>
<td></td>
<td>• Explain the effect of humidity on drying time.</td>
</tr>
<tr>
<td></td>
<td>• Describe the process caused by insect infestation.</td>
</tr>
<tr>
<td></td>
<td>• Dip or spray fish with a correct mixture of actelic.</td>
</tr>
<tr>
<td></td>
<td>• Explain the dangers of incorrect use of insecticides.</td>
</tr>
<tr>
<td></td>
<td>• Spread fish on drying racks and monitor condition.</td>
</tr>
<tr>
<td></td>
<td>• Describe moisture removal in terms of two stages – constant rate period and falling rate period.</td>
</tr>
<tr>
<td></td>
<td>• Explain the use of air drying in the commercial production of fish meal and fish silage.</td>
</tr>
<tr>
<td>Topic</td>
<td>Objective</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Freezing and cold storage** | • Define ‘chilling’ and ‘freezing’.  
                                  • State the effect of freezing on bacterial and autolytic activity.  
                                  • Explain why the speed of the freezing process affects the quality of the fish.  
                                  • State maximum recommended periods for storing frozen fish at different temperature.  
                                  • Explain the problems caused by the re-freezing of fish.  
                                  • Describe the layout of a commercial processing and cold storage factory.  
                                  • Describe the use of hold storage systems on large fishing vessels.                                                               |
| **Basic food safety**       | • *Describe how the use of ice can preserve product quality and reduce the likelihood of food poisoning*  
                                  • *Describe the main causes of food poisoning and how they may occur*  
                                  • *Explain the importance of good hygiene at various stages of the production chain*  
                                  • *Describe how various post-harvest handling and processing methods may reduce the risk of food poisoning and promote longer shelf life*  
                                  • *Describe how the pre-requisite plan contributes to the production of safe fishery products*                                                                 |
| **Inspection skills**       | • *State the Malawi legislation relevant to food safety and quality for fishery products and show understanding of the main provisions*  
                                  • *Demonstrate understanding of relevant (dof) procedures and manuals used in the inspection of fishery products and any premises, including vessels (note; these are not yet in existence but will be required in due course)*  
                                  • *Demonstrate understanding of the requirements for record-keeping and for timely and accurate reporting*                                                                 |
| **Equipment**               | • *Demonstrate the correct use of equipment used in the inspection of fishery products and premises*  
                                  • *Explain which equipment is used for what purpose and what role it plays in ensuring compliance with food safety regulations*                                                                 |
B. MCF Syllabus for a Diploma in Fisheries Management and Handling
Department of Fisheries

MALAWI COLLEGE OF FISHERIES

SYLLABUS

1. PROGRAMME: Diploma in Fisheries Management and Aquaculture

2. COURSE TITLE: Fish Handling & Processing

3. COURSE CODE: DFA 216

4. YEAR: Two

5. PRESENTED TO: Faculty of Environmental Science

6. PRESENTED BY: Malawi College of Fisheries

7. NO. OF LECTURES/WEEK: 2 x 1 hr

8. NO. OF TUTORIALS/PRACTICALS/WEEK: 1 x 3 hr

9. METHODS OF ASSESSMENT: Continuous Assessment 40%
End of Semester Examination 60%

10. AIM OF THE COURSE
To provide students with knowledge and skills in fish handling and processing technologies

11. OBJECTIVES OF THE COURSE
By the end of the course students should be able to:
• describe the nutritional composition of fish
• describe the basic concepts in changes that occur in fish and their control
• handle fresh fish properly
• process fish using different processing methods
• use and maintain fish handling and processing equipment
• assess the quality of fresh and cured fish
• understand food safety risks for fishery products and their controls
• demonstrate understanding of the food safety legislation applicable to fishery products in Malawi and its enforcement.

Notes: this course will need to be expanded to include an outline of the food safety legislation applicable to fishery products in Malawi. It would also be useful to include a section dealing with the harmonized COMESA standards on fishery products. All inspectors in the future competent authority will need this knowledge to be able to carry out their duties.
12. TOPICS OF STUDY

THEORY

Introduction
- Importance of fish to Malawi
- Fish utilization
- Fish processing as a component of food technology

Nutritional composition of fish
- Major components
- Nutritive value

Fish muscle biology

Fish spoilage
- Role of enzymes and microorganisms in fish spoilage
- Rigor mortis
- Insect infestations
- Effect of microbial growth on human health

Evaluation of fish quality
- Sensory methods
- Non sensory methods

Note: some practical sessions are essential for this part of the course and these should cover a variety of fishes (e.g. chambo, kampango, usipa).

Fish handling
- Fish handling and hygiene on board fishing vessel, fish landing site and fish factory
- The importance of temperature control and the correct use of ice
- Design and operation of fish processing plants to ensure good hygiene
- Food contact surfaces for quality and hygiene
- Design and construction of fish boxes for storage and transport

Note: this is a very broad subject and it should include some detailed information on systems for controlling cleanliness and sanitation and ensuring food hygiene. This should include personal hygiene such as washing hands as well as cleanliness and good hygiene at (e.g.) fish processing areas. The risk of contamination, especially by bacteria, and its sources should be covered in detail.

Fish processing and preservation
- Chilling and freezing (note: this should include safe temperatures for chilled and frozen fish and storage life)
- Filleting, gutted, split or whole fish
- Methods of fish preservation
Processing technologies
- Smoking kilns
- Drying racks
- Cooling facilities

Fish quality and hygiene control
- Methods of quality assessment
- Measurement of fish spoilage
- Inherent (e.g. heavy metals) and acquired risks (e.g. histamine)
- Traceability of fish and fish products
- Principles of quality control
- The Pre-Requisite Programme (GMP, GHP, SSOP, etc)
- Hazard Analysis Critical Control Point process (note; there is nobody currently available with the knowledge and training to be able to present such a course. Expertise may be brought in from outside or a member of staff will need to receive the necessary training to be able to teach HACCP to at least the level required for basic inspection and management of HACCP systems).
- Fish storage methods and marketing
- De-infestation and fumigation

Food safety and food safety controls
- Fishery products and food safety risks
- Managing and designing out risk
- Microbiological safety of fishery products and the role of bacteria in food poisoning
- Control of risk from bacteria
- Monitoring of cleaning and sanitation
- Non-bacterial risks – contaminants, residues, etc and their control

Food safety legislation
- Malawi food law
- Legislation applying to the sale of fishery products and the operation of markets
- COMESA harmonized standards
- MBS standards

Insect infestation and pest control
- Blowfly infestation
- Beetle infestation
- Control of infestation
- Vermin
PRACTICALS

- Fish handling onboard fish vessel, at the beach and in the factory/market
- Fish processing methods
- Field visits to landing beach, market and factories
- Notes: for inspectors who will be visiting landing sites, vessels and processing sites it is important that they get some experience in inspection skills and in the use of equipment such as digital thermometers in order that they appreciate the different skill sets needed for such different activities as extension visits, advisory visits and formal inspections.

13. PRESCRIBED TEXT


14. RECOMMENDED TEXTS

- Tracefish (2002). Homepage of Tracefish (www.tracefish.org)

15. ADDITIONAL RECOMMENDED TEXTS

required to access EU markets but does include information applicable to less demanding markets).

- **Huss (HH) 1994** Assurance of Seafood Quality. Available online at http://www.fao.org/DOCREP/003/T1768E/T1768E00.HTM


- **Huss HH, Dillon M and Derrick S (2005)** A guide to seafood hygiene management: accessing the European and American Market. Eurofish, Denmark. ISBN 1 900134 217 (note: a guide to the advance levels of food safety required to access developed country markets)

- **SFP-ACP/OCT (undated)** Manual/Handbook for the Execution of Sanitary Inspection of Fish as Raw Material and Fish-Products as Food for Human Consumption. Can be downloaded at http://sfp.acp.int/en/guide (note a number of other guides are available on this page)


Appendix K: Lists of essential equipment for training and inspection of fishery products

A. Essential equipment for training in post-harvest technology

This is the basic equipment required to teach people simple processing such as gutting and filleting and simple methods for fish preservation such as the correct use of ice. Approximate UK costs (in GB Pounds (£), where £1≈ MWK 390 (21 May 2012) are included. Costs for equipment may vary considerably depending on the configuration and the specification. Costs of the examples shown can be viewed via the URLs. All prices exclude Value Added Tax (VAT).

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital probe thermometer for testing fish temperature</td>
<td><img src="http://www.hannainst.co.uk/product_info.php?cPath=1179_1180_1181&amp;products_id=2935" alt="Digital Probe Thermometer" /></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Typical costs £30-100</td>
<td></td>
</tr>
<tr>
<td>Digital stick thermometer for testing temperature of fluids</td>
<td><img src="http://www.hannainst.com/usa/prods2.cfm?id=011008&amp;ProdCode=HI%2098511" alt="Digital Stick Thermometer" /> (note calibrated thermometer has the 98511 code)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Typical costs £55-100</td>
<td></td>
</tr>
<tr>
<td>Steaking knives (orange blades)</td>
<td><img src="http://www.hannainst.co.uk/product_info.php?cPath=1179_1180_1181&amp;products_id=2935" alt="Steaking Knives" /></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Typical costs £15-25</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Example</td>
<td>Number required</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Gutting knives</td>
<td><img src="image" alt="Gutting knives" /></td>
<td>5</td>
</tr>
<tr>
<td>Filleting knives (black blades and below)</td>
<td><img src="image" alt="Filleting knives" /></td>
<td>5</td>
</tr>
</tbody>
</table>

Typical costs £15-30

Typical costs £15-25
<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool boxes</td>
<td><img src="image1.png" alt="Image of cool box" /></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Typical costs £25-30</td>
<td></td>
</tr>
<tr>
<td>Fish crates</td>
<td><img src="image2.png" alt="Image of fish crate" /></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Typical costs £10-15</td>
<td></td>
</tr>
<tr>
<td>Cutting boards, plastic</td>
<td><img src="image3.png" alt="Image of cutting boards" /></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>15x20 Green 16.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15x20 Black 22.89</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15x20 White 17.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Typical costs £10-15</td>
<td></td>
</tr>
</tbody>
</table>
### B. Essential equipment for training in basic food safety

This could also be used for industry or the competent authority.

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital probe thermometer for testing fish temperature</td>
<td><a href="http://www.hannainst.co.uk/product_info.php?cPath=1179_1180_1181&amp;products_id=2935">Image</a></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Typical costs £30-100</td>
<td></td>
</tr>
<tr>
<td>Digital stick thermometer for testing temperature of fluids</td>
<td><a href="http://www.hannainst.com/usa/products2.cfm?id=011008&amp;ProdCode=HI%2098511">Image</a> (note calibrated thermometer has the 98511 code)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Typical costs £55-100</td>
<td></td>
</tr>
<tr>
<td>Low range chlorine test kits 0-2.5ppm free chlorine, paper dip stick or reagent test for use on potable water</td>
<td><a href="http://www.hannainst.co.uk/product_info.php?cPath=1200_1245&amp;products_id=753">Image</a></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.hannainst.com/usa/products2.cfm?id=011008&amp;ProdCode=HI%2098509">Image</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Typical costs £5-50</td>
<td></td>
</tr>
<tr>
<td>High range chlorine test kits 0-500ppm free chlorine, paper dip stick or reagent test for use on sanitising solutions</td>
<td><a href="http://www.coleparmer.co.uk/Product/LaMotte_small_sup_reg_sup_small_Sanitizer_Strength_Chlorine_Test_Strips/WZ-99532-31">Image</a></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Typical costs £5-50</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Example</td>
<td>Number required</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>White coats</td>
<td><img src="image.png" alt="Image of white coat" /></td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Typical costs £10-15</td>
<td></td>
</tr>
<tr>
<td>White rubber boots (wellingtons)</td>
<td><img src="image.png" alt="Image of white rubber boot" /></td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Typical costs £12-15</td>
<td></td>
</tr>
</tbody>
</table>
C. Essential equipment for advanced food safety training (in addition to the list above)

This assumes staff involved in quality control at fish production and fish processing facilities are trained in the system of own checks to be able to monitor the effectiveness of food safety systems they have in operation and would be carried out in addition to any official controls.

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swab sticks for microbiological sampling</td>
<td>Sterilin 165KS01 or 165KS100</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>Typical costs £125 per 1000</td>
<td></td>
</tr>
<tr>
<td>McCartney bottles or similar for peptone solution</td>
<td>Typical cost about £2 each</td>
<td>50</td>
</tr>
<tr>
<td>Cool box for samples</td>
<td>Typical costs £25-30</td>
<td>1</td>
</tr>
<tr>
<td>Description</td>
<td>Example</td>
<td>Number required</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>----------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Sterile petri dishes (including culture medium)</td>
<td><img src="image1.png" alt="Image" /> Typical costs £40-80 per 500 plus media</td>
<td>500</td>
</tr>
<tr>
<td>Sample bags, polythene</td>
<td><img src="image2.png" alt="Image" /> Typical costs £14-18 per 1000</td>
<td>100</td>
</tr>
<tr>
<td>Glass or rigid plastic bottles for water sampling</td>
<td><img src="image3.png" alt="Image" /> Typical cost about £2 each</td>
<td>10</td>
</tr>
<tr>
<td>Cleaning and sanitation rapid test kits (optional extra)</td>
<td>Merck HyRise <a href="http://www.merckmillipore.co.uk/food-analytics/color-hygiene-test-strip-hy-rise/c_LIKb.s1LU3EAAAEWwMgfVhTm?PortalCatalogId=merck4food&amp;CountryName=United+Kingdom">link</a> Nelson-Jameson Pro-Clean <a href="http://nelsonjameson.com/PRO-Clean-Rapid-Protein-Food-Residue-Test-p2420.html">link</a> Costs about £2 per test</td>
<td>1</td>
</tr>
</tbody>
</table>
D. Essential equipment for competent authority inspectors

Note that this equipment may not be used by all inspectors. For example, only fully trained inspectors would be carrying out microbiological sampling. Assume at least one set of clothing for each inspector and at least one set of equipment for each DoF regional office (some offices may not require equipment for sampling at commercial processing plants). The actual number of each item required will vary according to the amount of sampling and inspection which takes place.

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital probe thermometer for testing fish temperature</td>
<td>Hannah Checktemp HI 98501</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.hannainst.co.uk/product_info.php?cPath=1179_1180_1181&amp;products_id=2935">Link</a> Typical cost £30-100</td>
<td></td>
</tr>
<tr>
<td>Digital stick thermometer for testing temperature of fluids</td>
<td>Hannah Checktemp HI 98511</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.hannainst.com/usa/prods2.cfm?id=011008&amp;ProdCode=HI%2098509">Link</a> (note calibrated thermometer has the 98511 code) Typical cost £55-100</td>
<td></td>
</tr>
<tr>
<td>White coats for use while inspecting processing plants</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>[Image]</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Typical cost £10-15
<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>White rubber boots to be used at all sites</td>
<td><img src="image" alt="White rubber boot" /></td>
<td>10</td>
</tr>
<tr>
<td>Typical cost £12-15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disposable gloves (ideally blue) for use in microbiological sampling of fishery products</td>
<td><img src="image" alt="Disposable gloves" /></td>
<td>100</td>
</tr>
<tr>
<td>Low range chlorine test kits 0-2.5ppm free chlorine, paper dip stick or reagent test for use on potable water</td>
<td><a href="http://www.hannainst.co.uk/product_info.php?cPath=1200_1245&amp;products_id=753">Hannah HI 3831F</a></td>
<td>4</td>
</tr>
<tr>
<td><a href="http://dl.lovibond.com/cat/en/cat_checkitcomparator_envir.pdf">Lovibond 14 70 10</a></td>
<td><img src="image" alt="Lovibond" /></td>
<td></td>
</tr>
<tr>
<td>Typical costs £5-50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High range chlorine test kits 0-500ppm free chlorine, paper dip stick or reagent test for use on sanitising solutions</td>
<td><a href="http://dl.lovibond.com/cat/en/cat_checkitcomparator_envir.pdf">Lovibond</a></td>
<td>4</td>
</tr>
<tr>
<td>[Cole Parmer](<a href="http://www.coleparmer.co.uk/Product/LaMotte_small_sup_reg_sup_small_Sanitizer_Strengt_Chlorine_Test_Strips/WZ-99532-31">http://www.coleparmer.co.uk/Product/LaMotte_small_sup_reg_sup_small_Sanitizer_Strengt_Chlorine_Test_Strips/WZ-99532-31</a></td>
<td><img src="image" alt="Cole Parmer" /></td>
<td></td>
</tr>
<tr>
<td>Typical costs £5-50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swab sticks for microbiological sampling</td>
<td><a href="image">Sterilin 165KS01 or 165KS100</a></td>
<td>1000</td>
</tr>
<tr>
<td>Description</td>
<td>Example</td>
<td>Number required</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>----------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>McCartney bottles or similar for peptone solution</td>
<td>![Example Image]</td>
<td>200</td>
</tr>
<tr>
<td>Cool box for samples</td>
<td>![Example Image]</td>
<td>10</td>
</tr>
<tr>
<td>Sterile petri dishes (including culture medium)</td>
<td>![Example Image]</td>
<td>5000</td>
</tr>
</tbody>
</table>

Typical cost £125 per 1000

Typical cost about £2 each

Typical costs £25-30

Typical cost £40-80 per 1000
### Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Number required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample bags, polythene</td>
<td><img src="image" alt="Sample bags" /></td>
<td>1000</td>
</tr>
<tr>
<td>Glass or rigid plastic bottles for water sampling</td>
<td><img src="image" alt="Glass bottles" /></td>
<td>100</td>
</tr>
</tbody>
</table>

Typical costs £14-18 per 1000

Typical cost about £2 each

In addition, there would be a requirement for record keeping (pens, paper, clipboards, etc), alcohol bottles for sanitising, labelling pens and so on.
Appendix L: ISO Standards for Fish Production

A. The ISO-9000 series certification (Quality Systems)

For seafood processing establishments, the most relevant standards of the ISO 9000 series are the ISO 9001 and 9002. The former is a quality system standard that lays down requirements for product development, production, delivery and after sales functions. The latter concerns only production and delivery. The ISO 9003 deals with quality system requirements for final inspection and testing.

ISO 9000 standards comprise many elements. Of these, management responsibility and commitment is the first and most important element. The next element is the presence of a documented quality system organized in three levels comprising the Quality Manual, Procedures and Instructions. Process control is another requirement to ensure that all processes influencing the quality of the final product are specified and documented in detail. The schedule of testing and inspection and the test equipment used should demonstrate acceptable compliance with the defined specifications. A corrective action system concerned with revising work operations should be in place to try and eliminate the causes of failure. Quality records including inspection reports, analytical results and corrective action reports should be maintained. Internal quality audits on a regular basis is another requirement. Training of staff, personal hygiene, cleaning and disinfection are a vital part of the ISO 9000 standards with particular reference to the food industry.

The work involved in establishing and implementing a quality system like ISO 9001 or 9002 should not be under-estimated. It is a very demanding project in terms of time and resources. The time required is often 1-2 years even for a medium-sized establishment.

Marketing merits, reduced quality costs and higher efficiency are the main advantages of the quality system that contribute to a higher profitability. The main objective of quality management according to the ISO 9000 series is meeting the agreed requirements of the customer. This underlines that the quality of a company's products is the key factor in a company's performance.

Quality systems such as the ISO 9000 series serve to establish confidence in the customer. Once confidence is established, entry into world markets is simplified.

B. The ISO 22000 series certification (food safety management system)

ISO 22000 is a standard developed by ISO dealing with food safety. This is a general derivative of ISO 9000. The ISO 22000 international standard specifies the requirements for a food safety management system that involves the following elements:

1. Interactive communication
2. System management
3. Prerequisite programs
4. HACCP principles

Communication along the food chain is essential to ensure that all relevant food safety hazards are identified and adequately controlled at each step within the food chain. This implies communication between organizations both upstream and downstream in the food chain. Communication with customers and supplies about identified hazards and control measures will assist in clarifying customer and supplier requirements.
The most effective food safety systems are established, operated and updated within the framework of a structured management system and incorporated into the overall management activities of the organization. This provides maximum benefit for the organization and interested parties. ISO 22000 has been aligned with ISO 9001 in order to enhance the compatibility of the two standards.

ISO 22000 can be applied independently of other management system standards or integrated with existing management system requirements.

ISO 22000 integrates the principles of the Hazard Analysis and Critical Control Point (HACCP) system and application steps developed by the Codex Alimentarius Commission. By means of auditable requirements, it combines the HACCP plan with prerequisite programmes. Hazard analysis is the key to an effective food safety management system, since conducting a hazard analysis assists in organizing the knowledge required to establish an effective combination of control measures. ISO 22000 requires that all hazards that may be reasonably expected to occur in the food chain, including hazards that may be associated with the type of process and facilities used, are identified and assessed. Thus it provides the means to determine and document why certain identified hazards need to be controlled by a particular organization and why others need not.

During hazard analysis, the organization determines the strategy to be used to ensure hazard control by combining the prerequisite programmes and the HACCP plan.

ISO is developing additional standards that are related to ISO 22000. These standards are known as the ISO 22000 family of standards. At the present time, the following standards will make up the ISO 22000 family of standards:

- **ISO 22000 - Food safety management systems** - Requirements for any organization in the food chain.
- **ISO/TS 22002- Prerequisite programmes on food safety** — Part 1: Food manufacturing
- **ISO TS 22003 - Food safety management systems for bodies providing audit and certification of food safety management systems.**
- **ISO TS 22004 - Food safety management systems - Guidance on the application of ISO 22000:2005.**
- **ISO 22005 - Traceability in the feed and food chain - General principles and basic requirements for system design and implementation.**
- **ISO 22006 - Quality management systems - Guidance on the application of ISO 9002:2000 for crop production.**
- **ISO 22000 is also used in the Food Safety Systems Certification (FSSC) Scheme FS22000.** FS22000 is a Global Food Safety Initiative (GFSI) approved scheme.
Appendix M: National Workshop on Food Safety in Fisheries (2-3 May 2012)

1. Programme
2. List of Participants
3. Group Photograph
4. Presentations
5. Summary of Feedback from Presentations and Breakout Groups
# Programme for the national workshop on Food Safety in Fisheries 2\textsuperscript{nd} to 3\textsuperscript{rd} May 2012

**Hippo View Lodge, Liwonde**

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wednesday 2\textsuperscript{nd} May 12</td>
<td>09:00</td>
<td>Arrival of participants and registration</td>
</tr>
<tr>
<td></td>
<td>09:30-10:15</td>
<td>Welcome remarks (Mrs. Chikondi Pasani, DoF)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prayer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Opening Address (Dr Steve Donda, DoF)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outline of the ComSec project (Mr. Tim Huntington)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Objectives of the workshop (Mr. Ian Watson)</td>
</tr>
<tr>
<td></td>
<td>10:15-10:30</td>
<td>Presentation of key findings from <strong>Phase 1: Inception Mission</strong> (15 mins)</td>
</tr>
<tr>
<td></td>
<td>10:30-11:00</td>
<td><strong>Morning refreshments</strong> (30 mins)</td>
</tr>
<tr>
<td></td>
<td>11:00-12:15</td>
<td>Presentation of key findings from <strong>Phase 2: Needs Analysis</strong> (1 hr, 15 mins)</td>
</tr>
<tr>
<td></td>
<td>12:15-12:30</td>
<td>Open discussion of key findings (15 mins)</td>
</tr>
<tr>
<td></td>
<td>12:30-13:30</td>
<td><strong>Lunch break</strong> (1 hour)</td>
</tr>
<tr>
<td></td>
<td>13:30-15:30</td>
<td>Breakout sessions to propose and agree on issues (2 hours)</td>
</tr>
<tr>
<td></td>
<td>15:30-16:00</td>
<td><strong>Afternoon refreshments</strong> (30 mins)</td>
</tr>
<tr>
<td></td>
<td>16:00-17:00</td>
<td>Preparation of Group Presentations (1 hour)</td>
</tr>
<tr>
<td></td>
<td>17:00</td>
<td><strong>End of Day one sessions</strong></td>
</tr>
<tr>
<td>Thursday 3\textsuperscript{rd} May 12</td>
<td>08:30-09:00</td>
<td>Recap of Day One sessions (30 mins)</td>
</tr>
<tr>
<td></td>
<td>09:00-10:45</td>
<td>Presentations of Group Activities (30 minutes per group)</td>
</tr>
<tr>
<td></td>
<td>10:45-11:15</td>
<td>Open discussion of group findings (30 mins)</td>
</tr>
<tr>
<td></td>
<td>11:15-11:45</td>
<td><strong>Morning refreshments</strong> (30 mins)</td>
</tr>
<tr>
<td></td>
<td>11:45-12:30</td>
<td>Agreement of work programme for ComSec for Phase 3 (45 mins)</td>
</tr>
<tr>
<td></td>
<td>12:30</td>
<td>Closing remarks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prayer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LUNCH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DEPARTURES</td>
</tr>
</tbody>
</table>
# List of Participants Who Attended a Workshop on Food Safety Issues in Fisheries @ Hippo View in Liwonde on 2\textsuperscript{nd} - 3\textsuperscript{rd} May, 2012

<table>
<thead>
<tr>
<th>No</th>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
<th>Address</th>
<th>Contact No.</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Steve Donda,</td>
<td>Fisheries</td>
<td>Deputy Director</td>
<td>P.O. Box 593 Lilongwe</td>
<td>0999950035</td>
<td><a href="mailto:stevedonda@gmail.com">stevedonda@gmail.com</a></td>
</tr>
<tr>
<td>2</td>
<td>Orton M. Kachinjika</td>
<td>Fisheries</td>
<td>Chief Fisheries Officer Extension</td>
<td>P.O. Box 593 Lilongwe</td>
<td>0999510127</td>
<td><a href="mailto:kachinjika@yahoo.co.uk">kachinjika@yahoo.co.uk</a></td>
</tr>
<tr>
<td>3</td>
<td>Chikondi L.M. Pasani</td>
<td>Fisheries</td>
<td>Assistant Chief Fisheries Officer Extension</td>
<td>P.O. Box 593 Lilongwe</td>
<td>0993901029</td>
<td><a href="mailto:cpasani@yahoo.co.uk">cpasani@yahoo.co.uk</a></td>
</tr>
<tr>
<td>4</td>
<td>Ian Watson</td>
<td>Commonwealth Sec Poseidon</td>
<td>Fish quality and safety Specialist</td>
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1. BACKGROUND

1.1: Overview of the Project

- **Main objective:** to improve the quality and safety of fish produced in Malawi and to assure greater confidence in the integrity of ‘seafood’ that is currently marketed in Malawi and the SADC region.

- **Long-term goals:**
  - Improved fish handling, leading to better quality, higher value & lower losses
  - Development of standards and good practise benchmarks for the entire fisheries & aquaculture supply chain
  - Define the role of DoF in maximising fish quality and how this fits with existing efforts
  - Supportive food safety policies, especially for micro, small and medium-sized producers
1. BACKGROUND

1.1: Overview of the Project (continued)

- **Funding agency:** The Commonwealth Secretariat

- **Main project implementing agencies:**
  - Department of Fisheries
  - Malawi College of Fisheries
  - Malawi Bureau of Standards

- **Project technical assistance:** Poseidon Aquatic Resource Management Ltd of the UK (Ian Watson, Team Leader & Food Safety Specialist & Tim Huntington, Sector Specialist) and ANARMAC of Malawi (Ian Kumwenda)
1. BACKGROUND

1.1: Overview of the Project (continued)

The project has two main elements:

- **Fish quality and safety technical review and diagnosis**
  - Assess the structure of the fisheries sector and evaluate the key risks to fish quality and safety in the supply chain
  - Determine the most appropriate approaches to ensuring food safety in different parts of the supply chain

- **Capacity-building for fish quality assurance and public food safety**
  - Identify the main institutions and organisations currently involved in fish quality assurance
  - Based on both an assessment of DoF’s potential role in fish quality assurance and a training needs analysis, determine the capacity-building measures necessary to allow DoF, MCF and MBS work towards better fish safety.
1. BACKGROUND

1.1: Overview of the Project (continued)

**Phase 1: Inception**
- Scoping of the technical needs identification
- Initial stakeholder consultations

**Phase 2: Needs Identification**
- Institutional analysis of fish quality assurance in Malawi
- Review of standards in Malawi & selected SADCC countries
- TNA for DoF, MBC & MCF

**Phase 3: Capacity Development**
- Training of Trainers (MCF)
- Training of DoF staff
- Institutional development (DoF & MBS)

**Phase 4: Exit Strategy**
- Assist DoF prepare a MSME Policy & Strategy for fisheries food safety
- Final Workshop to present the Project Findings

**Reports**
- Inception Report
- 1st Progress Report
- 2nd Progress Report
- Final Report
**Purpose and structure of this workshop**

**Purpose**

- Review current institutional roles in fish quality management and assess future direction for DoF
- Identify key gaps in training programmes, training delivery and training capacity.
- Propose measures to close these gaps and identify which of those can be dealt with in Phase 3.
- Agree a work programme for Phase 3, Activities 3.1 – 3.3.

**Structure of this Workshop**

- **Introduction to workshop** (09:30-10:15)
- **Presentation on Phase 1 findings** (10:20-10:45)
- **Break (10:45-11:00)**
- **Presentations on Phase 2 findings** (11.00 - 12.30)
- **Lunch break (12:30-13:30)**
- **Breakout groups (13:30-17:00)**
  - MCF
  - MBS
  - DoF
BREAKOUT GROUP MCF

EXPECTED OUTPUTS FOR MCF GROUP

- Identification of any gaps in capacity and training curriculum not identified by the consultants. Particular attention will be paid to areas not already covered by MCF.

- Proposals on where MCF capacity needs to be developed, including improvements in technical capabilities and facilities. This will include proposals to improve stakeholder consultations on the development and implementation of new courses and course material.
BREAKOUT GROUP MCF

EXPECTED OUTPUTS FOR MCF GROUP (continued)

- Proposals to improve awareness of training requirements for the private sector and improved awareness of the need for higher standards in food hygiene and handling.

- Agreement on where the consultants will focus their activities in Phase 3 in support of MCF.

- Agreement of priority needs for MCF including staff and infrastructure needed to present improved training, advisory and awareness services.
BREAKOUT GROUP MBS

EXPECTED OUTPUTS FOR MBS GROUP

- Identification of any gaps in capacity and training curriculum not identified by the consultants. Particular attention will be paid to areas not already covered by MCF.

- Proposals on where MBS capacity needs to be developed, including improvements in technical capabilities and facilities. This will include proposals to improve stakeholder consultations on the development and implementation of standards.
EXPECTED OUTPUTS FOR MBS GROUP (continued)

- Proposals to improve awareness of standards and requirements for meeting them in the private sector and improved awareness of the standards at DoF District Offices.

- Agreement on where the consultants will focus their activities in Phase 3 in support of MBS.

- Agreement of priority needs for MBS including staff and infrastructure needed to present improved training, advisory and awareness services.
BREAKEOUT GROUP DoF

EXPECTED OUTPUTS FOR DoF GROUP

- Review of the potential role of DoF in fisheries safety and quality assurance.
- Identification of areas where there is or may be overlapping responsibilities or conflicts of interest.
- Identification of key gaps in legislation for the regulation of fishery product quality and food safety at all stages of the supply chain.
- Identification of any gaps in capacity and support services not identified by the consultants. Particular attention will be paid to areas not already covered by MCF and MBS.
BREAKOUT GROUP DoF

EXPECTED OUTPUTS FOR DoF GROUP (continued)

- Proposals on where DoF capacity needs to be developed, including improvements in technical capabilities and facilities. This will concentrate on the ability of DoF to deliver extension services to the small-scale/artisanal and to the commercial sectors and on developing the capacity of DoF as a regulator for fishery product quality and food safety.

- Proposals to improve awareness of food safety legislation and the requirements for meeting it in the private sector and improved awareness of the legislation at DoF District Offices.
BREAKOUT GROUP DoF

EXPECTED OUTPUTS FOR DoF GROUP (continued)

- Identify means of delivery for improving the capacity of DoF to deliver regulatory and extension services in fish quality and food safety.

- Agreement on where the consultants will focus their activities in Phase 3 in support of DoF.

- Agreement of priority needs for DoF including staff and infrastructure needed to present improved regulatory, advisory and awareness services.
IMPROVING FISHERY PRODUCTS IN MALAWI:
Key findings from Phase 1 Inception Mission

2-3 May 2012
### OUTLINE OF THIS PRESENTATION

1. Fisheries Supply Chain in Malawi
2. Quality and Safety Issues
3. Fish Quality Control in Malawi
4. Human Capacity Development
5. Policies and Macroeconomic Drivers
1. **FISHERIES SUPPLY CHAIN IN MALAWI**

**Capture fisheries (98,000 tonnes)**
- Small-scale artisanal fishing (92,000 t)
  - Karonga (7%)
  - Mzuzu (15%)
  - Salima (37%)
  - Machinga (34%)
  - Shire valley (4%)
- Commercial fishing (6,000 t)
  - Predominantly in Monkey Bay & Nkhotakota

**Aquaculture (3,000 tonnes)**
- Small-scale extensive pond farming (2,000 t)
  - Mzuzu (14%)
  - Kasungu (16%)
  - Salima (6%)
  - Lilongwe (8%)
  - Machinga (13%)
  - Shire valley (4%)
- Commercial aquaculture (1,000 t)
  - Cage culture in Lake Malawi
  - Recirculation farm in Blantyre

**Imports (2,500 t)**
- Imported fish (2,500 t)
  - 50% dried fish
  - 25% fishmeal
  - 11% prepared / preserved

**Processing**
- 100% as whole fish (unchilled)
- 10% as fresh fish (unchilled)

**Urban wholesale & Retail Outlets**
- Mostly frozen

**Local markets near production**
- From wholesale
- 50% sun-dried (ambient)
- 40% smoked (ambient)

**Beach Village Committees**
- 90%

**Lake-side processing**
- 10% as fresh fish (unchilled)
Fish supply is primarily from artisanal fisheries, whose product is mainly consumed locally.

Capture fisheries are over-exploited and increasingly composed of lower value species.

Aquaculture production is low, but provides the greatest potential for growth.

Per capita fish consumption is declining and prices rapidly increasing.
2. QUALITY AND SAFETY ISSUES

- Standards of food hygiene at all levels of production and supply are poor.
- The infrastructure to support the safe production and supply of fishery products is absent or inadequate.
- Most of the actors in the fish supply chain have no knowledge of and no appreciation of issues relating to fish quality and food safety.
2. QUALITY AND SAFETY ISSUES (continued)
3. FISH QUALITY CONTROL IN MALAWI

- The legislative framework for fish quality and food safety is limited in scope, missing some key aspects and dispersed between different sectoral laws.

- The roles of the various institutions involved in the promotion and regulation of fishery product quality and food safety are not adequately defined and there is potential overlap between the Ministry of Health, the City Councils and DoF.

- There is a need to expand the range of training, extension and advisory services available to the fisheries sector at all levels

- The private sector should have a role in promoting good practice in fish quality and food safety as it has taken the initiative to date.

---------- much more on this in the Phase 2 presentations
4. HUMAN CAPACITY DEVELOPMENT

- The lack of a specific focal point for post-harvest issues within DoF has meant that there have been few central and District-level initiatives aimed at improving fish handling and quality control.

- MCF’s pre-service and Diploma programmes both cover a wide range of post-harvest subjects – these will be subject to further scrutiny over Phase 2.

- Post-harvest teaching capacity at MCF is limited. Trainers do not have sufficient specialist knowledge of the subject and none have teacher training experience.
4. HUMAN CAPACITY DEVELOPMENT (continued)

- Many of the proscribed and recommended texts in the Diploma are out of date and could be considerably expanded.

- Much of the infrastructure at MCF – including the laboratory facilities, teaching facilities and library - are poorly equipped and maintained.
5. POLICIES AND MACROECONOMIC DRIVERS

- The policy framework for promoting fishery product quality and food safety is lacking at present – but is a key priority of the draft *Fisheries Policy 2012 - 2017*.

- Budgetary constraints seriously limit what DoF can achieve in the implementation of GoM policies.

- The supply of FOREX for investment is a constraint to the development of the fisheries sector, especially for commercial operators.

- Effective development of the fisheries sector will involve a range of agencies including other ministries, the financial sector and private investors.
IMPROVING FISHERY PRODUCTS IN MALAWI:
Key findings from Phase 2: Needs Assessment

2-3 May 2012
OUTLINE OF THIS PRESENTATION

1. Malawi College of Fisheries
   - Assessment of training capacity
   - Review of training curricula

2. Malawi Bureau of Standards
   - Assessment of audit capabilities in fisheries
   - Review of training curricula

3. Department of Fisheries
   - Institutional assessment of fish safety assurance
   - DoF training needs analysis

4. Review of Regional Legislation in Fish Safety
1.1 ASSESS MCF TRAINING CAPACITY

**FINDINGS**

- Training capacity for fishery product post-harvest and food safety is limited by a lack of facilities for these activities. There are very limited facilities for post-harvest training and none for food safety training.

- The courses provide little opportunity for practical training due to limitations imposed by the facilities and a restricted budget.

- Teaching is constrained by staff limitations as there is one full-time member of staff responsible for training on post-harvest and food safety who has limited experience in this field.
1.1 ASSESS MCF TRAINING CAPACITY (continued)

RECOMMENDATIONS

- There is a need to invest in MCF to improve the facilities to widen the scope of the training it can deliver and to insure that trainees can be trained in practical food safety inspection and monitoring.
- In view of the constraints imposed by the lack of experience and knowledge of MCF staff, it is recommended that external trainers be sought to cover the PRP and HACCP training until MCF has developed suitable capacity.
1.1 ASSESS MCF TRAINING CAPACITY

FINDINGS

- The curricula for both the Pre-Service and the Diploma courses do not cover the areas of post-harvest and food safety in sufficient detail and would not provide sufficient depth to train potential competent authority inspectors to an adequate level.

- The amount of time devoted to the PRP and HACCP in not sufficient to give trainees even a basic understanding of the topics. HACCP training is usually progressive and should be designed to give Pre-Service trainees at least an understanding of the principles of HACCP and its operation and for Diploma trainees at least a sound understanding of how a HACCP programme is put together and how it is monitored to ensure its effectiveness.
1.2 ASSESS MCF TRAINING CURRICULA (continued)

FINDINGS (continued)

- The length of the training courses does not provide for updating of the skills of existing DoF staff and does not permit specialised training to be given on particular subjects.
- The facilities and skills at MCF could be put to better use if the courses were expanded to include training targeted at the private sector.
1.2 ASSESS MCF TRAINING CURRICULA (continued)

RECOMMENDATIONS

- There is a need to expand the food safety and post-harvest training modules of both the Pre-Service and Diploma courses delivered for DoF. There is a need to ensure that both courses include complete training packages on the PRP and HACCP.

- There is a need for MCF to develop short course training capability to deliver targeted training to the private sector and to DoF to provide specific skills for key personnel and general skills to anyone working where a knowledge of food safety is required.
1.2 ASSESS MCF TRAINING CURRICULA (continued)

RECOMMENDATIONS

- In the short term, it is recommended that MCF bring in trainers with specialised skills (such as HACCP) to fill in the capacity gaps in the curricula.
2.1 MBS: Assessment of audit capabilities in fisheries

FINDINGS

- MBS develops standards, but other bodies can certify against them
- Without a Food Act, there are a number of overlapping inspection systems
- The dividing line between MBS’ standard development & auditing functions is sometimes blurred
- MBS is a self-funding parastatal
- MBS is itself not accredited, so conducts ‘non-accredited certification’.
2.1 MBS: Assessment of audit capabilities in fisheries

FINDINGS (continued)

- A wide range of stakeholders are involved in standard development
- The current fish standards are only really appropriate for commercial company operations
- The standards need updating and revision – and a new one for dried fish
- The management information systems at MBS need considerable improvement before MBS can itself be internationally accredited
2.1 MBS: Assessment of audit capabilities in fisheries

RECOMMENDATIONS

- Essential need for an over-arching national Food Safety Act
- MBS develops a separate body for its inspection activities
- Fish spec’ standards need to be brought in line with recent CODEX and MS 21 (food hygiene conditions) revised specific for fisheries.
- Standards for aquaculture developed (produce, residues & feeds)
- When the fisheries standards are gazetted, suitable exemptions are made for the non-compliant artisanal sector
- New local standards or codes of ‘Good Hygienic Practice’ are developed for the artisanal & small-scale aquaculture sectors
RECOMMENDATIONS (continued)

- MBS audit tasking is revised to cover broad categories e.g. ‘food and agriculture’. A cadre of inspectors should be trained to specialise in these areas and be tasked accordingly.
- A risk-based approach might be developed for food safety audit tasking based on the risk of the product being produced and the level of compliance of the food business involved.
- MBS internal management information systems need considerable review and updating to bring them into line with appropriate international standards.
2.2 MBS: Assess MBS Training Curricula

FINDINGS

- The MBS internal training course for new recruits does not provide a sufficiently detailed knowledge to auditors in food safety controls and audit. Unless new recruits arrived with substantial training of and experience in food safety controls, the training could not provide them with adequate skills to audit to MS21.

- MBS training offered to industry offers a range of courses to cover all concerned with ensuring safe food production and quality control from workers to managers. Uptake for training courses from industry may be limited indicating a need for awareness-raising to educate enterprises of the importance of food safety and quality training.
2.2 MBS: Assess MBS Training Curricula (continued)

FINDINGS (continued)

- Despite offering relevant skills training, MBS does not currently target other government agencies such as DoF for its training courses. These could fill a gap in training from elsewhere, such as MCF.
2.2 MBS: Assess MBS Training Curricula (continued)

RECOMMENDATIONS

- Officers responsible for audits at food processing establishments should be given much more in-depth training in HACCP to audit level.

- Officers conducting sampling for quality or food safety controls at food processing establishments should be given detailed training in food sampling statistics and methodology.

- MBS should offer its short course training to key government agencies such as DoF as a means of upgrading the skills and knowledge of their inspectors.
3.1 INSTITUTIONAL ASSESSMENT OF FOOD SAFETY GOVERNANCE

IMPROVING FISHERY PRODUCTS IN MALAWI

Key findings from Phase 2: Needs Assessment
3.1 INSTITUTIONAL ASSESSMENT OF FOOD SAFETY GOVERNANCE

FINDINGS

- DoF currently lacks the mandate & capability for fish quality assurance – but the draft *Fisheries Policy (2012-2017)* changes this
- Whilst changes to fisheries legislation are urgently needed, current plans to reach EU import standards are over-ambitious
- DoF is planning a cadre of inspectors, but they will have limited legal powers so will mainly be advisory
- The Ministry of Health has a wide food inspection mandate under the Public Health Act – which is supported by a local network of EHOs. A draft *National Environmental Health Policy* has ‘food safety and hygiene’ as one of four priority areas.
3.1 INSTITUTIONAL ASSESSMENT OF FOOD SAFETY GOVERNANCE

FINDINGS (continued)

- The City Councils also have environmental health departments with byelaw-based mandates for inspection of markets & restaurants.
- Whilst both MoH and the city councils recognise MBS as the national standard development agency, they have still created their own inspection benchmarks.

- All this highlights the need for an overarching Food Safety Act. This has been drafted by MoH but this has yet to undergo stakeholder review (e.g. DoF & MBS) and is at least two fiscal years from completion.......
3.1 INSTITUTIONAL ASSESSMENT OF FOOD SAFETY GOVERNANCE

RECOMMENDATIONS

- DoF focus on national and cross-border fish quality (not EU).
- In developing DoF’s role in fish quality assurance, recognition of existing mandates covering the supply chain need to be recognised.
- We see DoF inspection activities focussing on primary production (e.g. vessels, landing centres & artisanal processing) & border imports with others (DoH & CCs) responsible for transport, markets & retail.
- Although EU exports are not expected over the medium term, the creation of a CA is recommended for early engagement with FVO. Institutional options include DoF, other Min of Ag. Dept’s and MoH.
RECOMMENDATIONS (continued)

- Once a clear role for DoF activities in food safety has been defined, appropriate legislation will need to be developed to empower it.
- DoF will need to develop a functional unit to plan, direct and implement fish quality assurance in Malawi e.g.
  - Some form of fish safety and advisory section at central level
  - Fish quality extension at district level, and
  - Separate and strategically located inspectorate
- New local standards or codes of ‘Good Hygienic Practise’ are developed for the artisanal & small-scale aquaculture sectors
3.2 DoF TRAINING NEEDS

FINDINGS

- There are significant skill shortages in the ability of DoF staff to be able to implement the regulation of improved food hygiene and quality standards. These skill shortages will need to be addressed in order to see any significant improvements in the regulation of fishery products in Malawi.

- There are significant skill shortages in the ability of DoF to carry out a programme to improve standards of hygiene, sanitation and quality in the fisheries sector. The shortage is more critical for the commercial sector.

- There is very little capacity in training to deal with the above 2 points. The training gap is most evident in training in the PRP and HACCP.
3.2 DoF TRAINING NEEDS (continued)

FINDINGS (continued)

- Improved and expanded training will need to be delivered over a period of years and it will be necessary to enhance the range of local or regional trainers to deliver such training at the same time in order to ensure that improvements in capacity building are sustainable in the long term.

- The artisanal sector is unlikely to be able to adapt for higher standards for hygiene, sanitation and quality as easily as the commercial sector and will require much more training and extension support from DoF.
3.2 DoF TRAINING NEEDS (continued)

FINDINGS (continued)

- Meeting the requirements of the EU food safety legislation is a demanding task which will require substantial effort and expense and may reasonable be expected to take several years of capacity building in DoF (and the private sector) before exports to the EU become a possibility. This will require a significant increase in the amount of training given to DoF staff in the potential competent authority.
3.2 DoF TRAINING NEEDS (continued)

RECOMMENDATIONS

- All DoF staff should receive much more detailed and in-depth training in food safety and post-harvest issues. This training should extend to existing staff.

- Training and development plans for the anticipated FQIU should be realistic and take into account the costs and the need to develop training capacity in Malawi to ensure training is sustainable.

- The approach to improved food safety and quality should be phased to take into account the capacity of DoF staff to deliver support to the fisheries sector and the need for extensive training of DoF inspectors, trainers and extension officers.
3.2 DoF TRAINING NEEDS (continued)

RECOMMENDATIONS (continued)

- Training and capacity development for DoF should anticipate legislative developments and ensure fully trained staff are in place before the legislation comes into force.
- Training and capacity building in support of exports to the EU should be made a long term goal due to the need for considerable investment by the public and private sectors.
4. REVIEW OF REGIONAL LEGISLATION

FINDINGS

- The legal framework in Malawi is incomplete and there is very little legislation which deals with fishery products per se for either food safety or food quality issues.
- There is no identifiable administrative structure with overall responsibility for food safety and quality issues for fishery products. There are some critical gaps in the administrative responsibilities which are being covered at the moment on an ad hoc basis.
- Malawi would have great difficulty in meeting the requirements for the implementation of even a modest tightening of food safety controls for fishery products and would not be capable of meeting the standards required regionally in the immediate future.
4. REVIEW OF REGIONAL LEGISLATION (continued)

FINDINGS (continued)

- As well as considering the requirements for exports of fishery products to other COMESA states, there is also the fact that Malawi imports fish to be taken into consideration. Improved border inspection is needed to ensure the safety of these imports and this too will require a properly trained and resourced inspectorate. Plans for the harmonisation of border controls on fishery products in the region are underway and expected to be available from July 2012, although there is no fixed plan in place for adoption by Member States. As part of the plans for a nominal fish quality inspection unit at DoF, controls on imports are set to be improved through a better trained border inspection team. These would be responsible for checking fishery product imports at the border, although their exact role is yet to be determined. In order to develop a coherent fish inspection unit, a number of issues need to be resolved.
4. REVIEW OF REGIONAL LEGISLATION (continued)

FINDINGS (continued)

- A thorough review of the institutional and legislative requirements for food safety and quality controls for fishery products in Malawi is needed in order to determine the short, medium and long term objectives in terms of improved sanitary controls for improving standards in Malawi and to allow access to regional markets (and possibly international markets in the long term). Among the factors to be taken into account are:

- Institutional responsibilities for food safety and quality of fishery products for internal production and consumption and for imports and exports.
4. REVIEW OF REGIONAL LEGISLATION (continued)

FINDINGS (continued)

- The legislative framework required to put adequate safeguards in place to ensure the safety of the Malawian consumers and to allow access to export markets.
- Funding for the setting up of an institution and a mechanism for continuing, sustainable funding for its operation.
National Workshop on Food Safety in Fisheries (2-3 May 2012):
Hippo View Hotel, Liwonde

Designed and set in motion over Phase 1, this two day workshop will include initial presentations by the consultants (on the aims and objectives of the workshop, the processes involved, as well as the results of the Inception Phase), followed by a series of break-out and plenary discussions.

The purpose of the breakout sessions is to propose and agree actions to resolve the issues presented by the consultants and to agree the work programme in Phase 3. Terms of Reference (ToR) for each breakout group are given below. Where possible, each of the breakout groups will contain representation from the various groups of stakeholders (DoF, MBS, MCF, commercial sector and small-scale/artisanal sector) to ensure a wide range of views is heard from both the regulators and the operators in the fisheries sector. The three breakout groups will examine the findings relating to training capacity and training curriculum.

Breakout Group ToRs

Breakout Group 1: Needs Identification - Malawi College of Fisheries. This activity comprises two main tasks Task 2.2.1: Assess MCF training capacity and Task 2.2.2 Review MCF training curricula.

Expected outputs from working group include:

- Identification of any gaps in capacity and training curriculum not identified by the consultants. Particular attention will be paid to areas not already covered by MCF.
- Proposals on where MCF capacity needs to be developed, including improvements in technical capabilities and facilities. This will include proposals to improve stakeholder consultations on the development and implementation of new courses and course material.
- Proposals to improve awareness of training requirements for the private sector and improved awareness of the need for higher standards in food hygiene and handling.
- Agreement on where the consultants will focus their activities in Phase 3 in support of MCF.
- Agreement of priority needs for MCF including staff and infrastructure needed to present improved training, advisory and awareness services.
Breakout Group 2: Needs Identification - Malawi Bureau of Standards. This activity also comprises two main tasks Task 2.3.1 Assess MBS audit capabilities and Task 2.3.2 Review MBS training curricula.

Expected outputs from breakout group include:

- Identification of any gaps in capacity and training curriculum not identified by the consultants. Particular attention will be paid to areas not already covered by MCF.
- Proposals on where MBS capacity needs to be developed, including improvements in technical capabilities and facilities. This will include proposals to improve stakeholder consultations on the development and implementation of standards.
- Proposals to improve awareness of standards and requirements for meeting them in the private sector and improved awareness of the standards at DoF District Offices.
- Agreement on where the consultants will focus their activities in Phase 3 in support of MBS.
- Agreement of priority needs for MBS including staff and infrastructure needed to present improved training, advisory and awareness services.

Breakout Group 3: Needs Identification - Department of Fisheries. This activity comprises three main tasks Task 2.4.1 Institutional assessment of food safety governance in the fisheries sector, Task 2.4.2 Review of existing food safety guidance & standards in Malawi and Task 2.4.3 Training needs analysis for DoF staff.

Expected outputs from breakout group include:

- Identification of any gaps in capacity and support services not identified by the consultants. Particular attention will be paid to areas not already covered by MCF and MBS.
- Identification of areas where there is or may be overlapping responsibilities or conflicts of interest.
- Identification of key gaps in legislation for the regulation of fishery product quality and food safety at all stages of the supply chain.
- Proposals on where DoF capacity needs to be developed, including improvements in technical capabilities and facilities. This will concentrate on the ability of DoF to deliver extension services to the small-scale/artisanal and to the commercial sectors and on developing the capacity of DoF as a regulator for fishery product quality and food safety.
- Proposals to improve awareness of food safety legislation and the requirements for meeting it in the private sector and improved awareness of the legislation at DoF District Offices.
- Identify means of delivery for improving the capacity of DoF to deliver regulatory and extension services in fish quality and food safety.
- Agreement on where the consultants will focus their activities in Phase 3 in support of DoF.
- Agreement of priority needs for DoF including staff and infrastructure needed to present improved regulatory, advisory and awareness services.
**National Workshop on Food Safety in Fisheries (2-3 May 2012): Hippo View Hotel, Liwonde**

**Break out group composition**

<table>
<thead>
<tr>
<th>Group</th>
<th>Group 1: MCF</th>
<th>Group 2: MBS</th>
<th>Group 3: DoF</th>
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<tbody>
<tr>
<td>Facilitator</td>
<td>Ian Watson</td>
<td>Ian Kumwenda</td>
<td>Tim Huntington</td>
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<tr>
<td>Chairperson</td>
<td>Wananga Sindani (MBS)</td>
<td>Fred Sikwese (MBS)</td>
<td>Samden Seunda (Blantyre City Assembly)</td>
</tr>
<tr>
<td>Rapporteur</td>
<td>Dr Wilson Jere (Bunda CoA)</td>
<td>David Ngomba (Consumers Association)</td>
<td>Young Samanyika (Min of Health)</td>
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<tr>
<td>1</td>
<td>Orton Kachinjika (DoF Lilongwe)</td>
<td>Chikondi Pasani (DoF Lilongwe)</td>
<td>Dr Steve Donda (DoF Lilongwe)</td>
</tr>
<tr>
<td>2</td>
<td>Yezgayezga Nkhwazi (Fisherman: Mangochi)</td>
<td>Anthony Nathambwe (Maldeco)</td>
<td>Prince Fachi (FISAM)</td>
</tr>
<tr>
<td>3</td>
<td>Wananga Sindani (MBS)</td>
<td>Fred Sikwese (MBS)</td>
<td>Steve Afuleni (MBS)</td>
</tr>
<tr>
<td>4</td>
<td>Mr Kuthabe (Fisherman: Zomba)</td>
<td>Mr Komba (Fisherman: Zomba)</td>
<td>Laban Silli (DoF Zomba)</td>
</tr>
<tr>
<td>5</td>
<td>Josia Chamveka (DoF Mangochi)</td>
<td>Mr Chikoko (DoF: Salima)</td>
<td>Philip Theu (Fisherman: Mangochi)</td>
</tr>
<tr>
<td>6</td>
<td>Nevarson Msusa (MCF)</td>
<td>Evance Mataka (MCF)</td>
<td>Steve Wemba (MCF)</td>
</tr>
<tr>
<td>7</td>
<td>Martin Banda (FISAM)</td>
<td>Dings Mpota (PTC)</td>
<td>Young Samanyika (Min of Health)</td>
</tr>
<tr>
<td>8</td>
<td>Mr Bheda (Chambo Fisheries)</td>
<td>Mr Chisale (Min. of Industry &amp; Trade)</td>
<td>Mr EM Khonje (Min of Local Government)</td>
</tr>
<tr>
<td>9</td>
<td>Dr Wilson Jere (Bunda CoA)</td>
<td>Mr Kazembe (Lilongwe City Assembly)</td>
<td>Samden Seunda (Blantyre City Assembly)</td>
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<tr>
<td>10</td>
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<td></td>
<td>David Ngomba (Consumers Association)</td>
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</tbody>
</table>
MCF Breakout Group

Report back to workshop 3rd May 2012
Identification of any gaps in capacity and training curriculum not identified by the consultants. Particular attention will be paid to areas not already covered by MCF.
Gaps continued

- Already post-harvest course – we do not need different course for food safety
- Need to invite fishers to take part in training at MCF
- Improve networking and linkages – MoH, Univ Malawi and Poly/Colleges
- MCF are not training fish processors – link to fish wastage
Gaps continued

- Extend existing courses
- MCF should do research and disseminate results
- Fish processing and handling a priority – including for research
Proposals on where MCF capacity needs to be developed, including improvements in technical capabilities and facilities. This will include proposals to improve stakeholder consultations on the development and implementation of new courses and course material.
Proposals on capacity continued

- Extension limited by funding
- Lack of facilities to deliver post-harvest training especially
- Only one trainer – need more
- Need microbiology training – maybe contamination in general
- Pre-harvest course for aquaculture – raise awareness of how pre-harvest treatment e.g. vet meds affect fish safety
Proposals capacity continued

- Need equipment to be able to demonstrate post-harvest, fish processing, etc
- Need more than one person involved in course delivery – maybe problems from other teaching requirements so another trainer would be useful.
- Short course training.
- Need a lot of equipment and books. Need to start on board vessel for fish handling so maybe need boat.
Proposals to improve awareness of training requirements for the private sector and improved awareness of the need for higher standards in food hygiene and handling.
Awareness raising continued

- Need for hygiene and good handling across the board but technology varies from small scale to commercial
- Need to target consumers to raise their awareness of quality/safety and demand higher quality fish.
- How to reach consumers?
- Have to target producers to get them to improve quality/safety
Awareness raising continued

- Target whole supply chain
- Good practice code for private sector to follow. Have some material but it is outdated
- Make consumers aware of specific problems
- Use posters for villages. Do we have enough extension workers?
- MCF and DoF extension workers always work together. Actually a part of DoF extension service
Focus of activities in Phase 3

- Develop new curricula
- Fish handling and processing manual
- Identify equipment and facilities needed
- Library resources
Agreement of priority needs for MCF including staff and infrastructure needed to present improved training, advisory and awareness services.
Priority needs MCF

- Staff need to be adequately trained to be able to deliver courses needed - ToT
- Development of new curricula
- Equipment and infrastructure
- Means to deliver awareness raising
Priority needs MCF

- Better marketing of training capability and services – marketing, business development department, website?
- Need funds for development
- Target donors
Group Two

Needs Identification – MBS
Main Tasks

a) Assess Audit capabilities and task

b) Review MBS training curricula
Gaps identified in capacity and training curricula as per task (a)

- There is lack of engagement of MBS on fish products- collaboration is required by the two institutions: MBS & DoFs

- Artisan sector lack associations as a starting point for implementation

- The lack of the food safety Act which deals with deals with issues of overlaps among stakeholders in this sector
Gaps contd...

- MBS accreditation is required to improving food safety standards on both the local scene and the international market
gaps in training of MBS training curricula

- Low uptake of courses offered by the Bureau
- There is need for training in food safety management system because it is comprehensive not only HACCP
- The self-funding aspect can not sustain the institutions: there is need for exploring other avenues
Proposals on where capacity needs to be developed as per task (a)

Non engagement of MBS on fish products by DoFs compounded with the lack of facilities like testing labs

Issuance of certificates by DoFs to traders & consumers should be based on objective evidence – verification exercises carried/approved by MBS
Proposals contd...

Artisan sector not organised such that enforcement of standards at this level is a big challenge.

Artisan sector should have Associations which can be used as vehicles for implementing and enforcing standards at this level.

There is need for collaboration between MBS and DoFs to streamline food safety at this level.
Proposals contd...

Need for the Food Safety Act

The process for finalising the development of the Food Safety Act has to be fast tracked so that issues on overlaps of jurisdiction, processes & requirements in food chain supply be put to rest.

The nature of the consultative process to involve all relevant stakeholders.
Proposals contd...

Need for Accreditation of MBS

Proposals have to be made for infrastructure development (of course Govt is already committed to build this & EU is also ready to bring facilities)

Training of staff in standardisation which is used in accreditation ISO 17025
- training of staff to build competence in testing and calibration and also in development of a system based on the same standard
Establish minimum qualifications for all food handlers in the industry.

Standards should stress or have a clause that stresses the need for training for all personnel that deal with food in industries – when employed and on a regular basis.

Carry out awareness campaigns to create demand for training in industries to increase uptake.

Training of Food Handlers should be another component included in the Food Safety Act.
On the need for specialised training inclined towards HAASP

Need for training in Food Safety Management System because it is comprehensive not only HACCP

Establishment of ToTs in necessary stakeholder institution to help fill the capacity gaps in a sustainable way
Proposals contd...

Need for exploring other avenues for funding

For improved service delivery by the Stds Bureau, effort should be made to explore other avenues for fundraising

- there should be concerted efforts (collaboration) in fundraising activities with Ministries of Health & Agriculture to win donor confidence
Proposals to improve awareness of Stds & requirements

- Malawi Standards have to be translated into local languages for easy communication with the main stakeholders who are not well conversant with English.

- Development of special IEC materials like posters & brochures highlighting key issues in the standards for easy uptake.

- Use of the mass media for cost effective coverage/mass awareness.

- MBS has to collaborate with DoFs in their awareness campaigns to benefit from the use of their resources.
Focus of consultants in phase 3

- Training of inspectors in
  - Food safety management systems
  - Codex code of hygiene

- Training of inspectors in ISO 17025: understanding the std & system development in order to achieve accreditation

- Training of inspectors in sampling techniques & procedures
On priority needs

- Development of a management information system
Other capacity needs

- Build capacity to test for infrastructure to test for polychlorinated biphenols (PCBs), antibiotics, histamine and methyl mercury in the fish - Equipment and training of analysts
Thank you!
IMPROVING FISHERY PRODUCTS IN MALAWI:
Breakout Group 3 Findings (DoF Needs Assessment)

2-3 May 2012
1. Identification of any gaps in capacity and support services not identified by the consultants. Particular attention will be paid to areas not already covered by MCF and MBS

- Artisanal fish processors not aware of MBS or any other standards
- Fishing associations e.g. FISAM could be certified as a group.
- Consumers are not aware of the role of certification, and the choice of buying a certified product. Needs awareness building.
- But there is some doubt whether consumers will pay extra for certified fish, even if it is a better quality.
- Need different standards or GHPs for different processing techniques of fish products.
- Standards must be clearly harmonised, at whatever level
- Import standards should be the same export standards.
2. Identification of areas where there is, or may be, overlapping responsibilities or conflicts of interest for fish safety

- Suggestion that DoF is responsible for primary production to processing; MBS should look after commercial processing; and EHOs the rest of the supply chain.
- District-level EHOs look after landing centre sales points and charge fees. Some blur over what is a ‘landing centre’ (DoF) and a beach market (EHO).
- New DoF designated landing areas would also be sales points as well, so who is responsible, DoF or EHOs? Maybe both through agreement.
- Need easy quality / safety assessment benchmarks, especially at artisanal level.
### 3. Identification of key gaps in legislation for the regulation of fishery product quality & food safety over all the supply chain

- **Consultants covered most aspects.**
- **Public Health Act. Is very old (1948).** Includes fish, but there are no regulations to back this act.
- **City Councils do have food byelaws.**
- **Nothing under the current fisheries legislation to empower DoF with fish quality inspection, but this may change with new policy (currently under draft)**
4. Proposals on where DoF capacity needs to be developed, including improvements in technical capabilities and facilities. This will concentrate on the ability of DoF to deliver extension services to the small-scale/artisanal and to the commercial sectors and on developing the capacity of DoF as a regulator for fishery product quality and food safety.

- We need to ask ourselves a question - at a District level, will fish quality control be under the control of the DC or the line ministry?
- The DC can request a DFO to address specific public health issues related to fisheries, so it is very important to address District Level capacity for management and inspection tasking.
- Agriculture Development Divisions (ADD) may have a role in this on a supervisory basis, so may also need capacity-building support.
5. Proposals to improve awareness of food safety legislation and the requirements for meeting it in the private sector and improved awareness of the legislation at DoF District Offices

- Not fully developed as most programming is still central via line ministry (should be restricted to policy).
- Need to separate out inspection and awareness building / extension at District level.
- Need to build capacity across District level e.g. EHOs need to have an awareness of fisheries issues to broaden the inspection base.
- In City Councils it may be more difficult to have cross-sectoral support. But Mzuzu and Zomba have a DEC (District Executive Committee) which allows cross-sectoral coordination. DHOs operate across both city and rural district boundaries. So can co-opt district expertise into the city management.
6. Identify means of delivery for improving the capacity of DoF to provide regulatory & extension in fish quality & food safety

- MCF cannot manage the capacity-building by itself – needs to include other organisations e.g. Malawi Polytechnic has a fish inspection component to its EH curriculum.
- TEVETA does vocational training for fishermen. Could be accredited to MCF and other institutions.
- Need to coordinate curriculum delivery and training capacity amongst different institutions to reduce overlaps.
7. Agreement on where the consultants will focus their activities in Phase 3 in support of DoF.

- MCF training might include District & City level, non-DoF staff.
- Maybe possible to get some district level funding, but maybe too late and budgets are already submitted.
- DoF and others can apply for financial support for this training but should be done in good time.
- Professional development is very important, but resources are limited.
8. Agreement of priority needs for DoF including staff and infrastructure needed to present improved regulatory, advisory and awareness services

- Is rather dependent upon area.
- Lack of labs / equipment is the key problem.
- MoH has clinical labs in every District, but only 1 public health lab in Lilongwe.
- Blantyre City has a public health lab, but is poorly equipped.
- DoF have 2 labs – one in Monkey Bay and Senga Bay but also very poorly equipped.
SUMMARY OF FEEDBACK FROM PRESENTATIONS AND BREAKOUT GROUPS

Presentation 1: Background and Introduction
- No significant feedback

Presentation 2: Key findings from Phase 1 – Inception Mission
- No significant feedback

Presentation 3: Key findings from Phase 2 – Needs Assessment
- Which recommended texts should be used for the various MCF courses?
  * These will be detailed in the Phase 2 Report
- There should be more emphasis on the difference in which city councils and District Assemblies work.
  * Good point – this will be done in the Phase 2 Report.
- The presentation laid little emphasis on consumer views and issues – this needs to be emphasised.
  * Good point – this will be done in the Phase 2 Report.
- Need to look at inspection structures underneath the MoAIWD (e.g. other departments than DoF).
  * Good point – this will be done in the Phase 2 Report.

Breakout Group 1: MCF Needs Analysis Presentation
- Discussion about whether post harvest and food safety should be a combined or separate course at MCF. Main feeling was that they are separate but linked subjects, but need to be taught in an integrated set of courses.
- MCF already does community training, but this needs to over food quality and safety issues much better.
- We recognised that some training will be done in Phase 3, but much more is needed – what is the strategy to ensure this happens.
- Phase 4 of the project includes an exit strategy, including a final workshop. We will make sure we invite other donors and related projects to this.

Breakout Group 2: MBS Needs Analysis Presentation
- The group says there is no coordination between MBS and DoF. This is not true, especially in standard development where the Technical Committees include DoF and other fisheries-related stakeholders.
- Long discussion about whether all food handlers should have a minimum food hygiene qualification as suggested by the breakout group. It was agreed that this qualification might simply be attendance at an extension course. Furthermore it would be mainly supervisors and above who would require some form of certified training, even if this simply attendance at a relevant course or workshop.
- MoH has an informal training course for low level food handlers, based on demonstration and simple pictorial guidance.
Breakout Group 3: DoF Needs Analysis Presentation

- Need to have a management information system, especially at District level, to allow different departments to see who has been trained and in what, and what inspections have been made.
- The Department of Veterinary Services inputs meat producers, based on a mandate in the Meat Products Act. This inspection is at two levels – (1) DoVS inspectors only and (2) DoVS inspectors, EHOs and other equivalent officers. This could be a model for DoF.
- Need for more involvement of DoF officers in the food supply chain e.g. DoF officers work together with EHOs.
- EHOs should get some specialist fisheries training, possibly through a short course from MCF.
- The Milk and Milk Products Act also overlaps with MBS standards.