



RAPID Task Order 2.2 Activity

SPS Program Regional Food Safety Assessment

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LIST OF ACRONYMS AND ABBREVIATIONS

AACC – American Association of Cereal Chemists
ALOP – Acceptable Level of Sanitary Protection
APEC – Asian-Pacific Economic Cooperation
AOAC – American Organization of Analytical Chemists
Codex – Codex Alimentarius Commission
CRA – Chemical Risk Assessment
EU – European Union
EC – European Commission
FAO – Food and Agricultural Organization
FSO – Food Safety Objectives
FDA – Food and Drug Administration
GAP – Good Agricultural Practice
GHP – Good Hygiene Practice
GMP – Good Manufacturing Practice
GMO – Genetically Modified Organisms
HACCP – Hazard Analysis Critical Control Point
MRA – Microbial Risk Assessment
ICMSF- International Commission of Microbiology Specification for Foods
IDF – International Dairy federation
ISO – International Standards Organization
IAPC – Inter African Plant Convention
IPPC – International Plant Protection Convention
MERCOSUR – Southern Common Market
NAFTA – North American Free Trade Area
OIE – International Office of Epizootics
OECD – Organization of Economic Co-operation and Development
PCB - Polychlorinated
RA – Risk Assessment
SADC – Southern African Development Community
SPS – Sanitary and Phytosanitary
TQM – Total Quality Management
WTO – World Trade Organization
WHO – World Health Organization

FOOD SAFETY ASSESSMENT

1. Introduction

SADC members are facing new challenges in order to cope with new international trends in setting food regulations and standards. In fact Food Safety is an issue of growing importance due to several worldwide trends that contribute to increasing safety risks in the food systems despite advances in science and technology. Concerns of consumers have been first expressed mostly in the developed world, but improvements in communications systems have raised consumers awareness in developing world

People all over the world are enjoying a variety of foods from a continually expanding global supply. Food borne illness is still a continuing threat and the food system is becoming more and more complex. New chemical hazards in foods that could affect human health are continuously being identified.

Strengthening food safety and quality control systems, promoting good manufacturing is drawn from practices and educating main stakeholders are cardinal for health and good nutrition. Additionally to consumer protection efficient food system reduces losses and encourages international food trade.

With the expansion of food trade, food safety cannot only be considered as a local health problem. Indeed, under the WTO SPS Agreement, the standards, guidelines, recommendation and codes of practices issued by the Codex Alimentarius Commission are regarded as benchmarks for international harmonization that guarantee the trade of safe food. They need, however, to be enacted and enforced in each country's food legislation.

This report is designated to examine how far the food safety system in place in SADC countries can cope with the new requirements in terms of keys factors that compose a modern food safety system.

This report will focus on the outcome of the system in place in different SADC countries rather than giving a comprehensive review of all applied sanitary measures. It will analyze key issues that build up a modern food safety system.

2. Food Policy

The general food safety plan of action constitutes the benchmark and at the same times the vision of all food safety system of a country. It should define the national strategy, goals and objectives of food safety.

Food Safety Policy should be articulated around six main factors:

International considerations. This refers to the Codex Alimentarius Commission. The codex Alimentarius system itself is unique in that it provides an opportunity for all its member countries to join the international community in the development of standards, recommendations and guidelines. In recent years, participants at the Uruguay Round of Multilateral Trade Negotiations raised the issue that many food laws and regulations adopted by countries to protect the health and safety of their consumers could become disguised barriers to trade as well as being discriminatory. As a result, Codex standards became the international reference standards for harmonization and it became clear that deviations from Codex standards would need to be justified based on risk assessment. Other considerations beyond science, such as technological, social, economic and ethical values have also to be considered when defining Food Policy.

In most of the SADC countries, in the absence of clearly defined Food Policy most of the vision is drawn from Codex and from market forces. Countries are adopting the Codex Alimentarius norms with the hope that it will enable them to promote trade. Codex Alimentarius is an evolving process and for that SADC countries need to take into account the main changes, and that is not always the case as active participation of SADC members in main Codex activities is limited to a few countries, especially South Africa and Mauritius.

Market forces play an important role in defining food safety policy. However, in order to cope with it, minimum food policy defined by Codex should be adopted. Good example for modernization of food policy under market forces is given by Mozambique (in the fish and fish products) and Zambia (in minimally fresh vegetables cut).

Regulatory considerations. Food Safety Policy can also proceed from the accumulation of several decades of mainly independent efforts to address specific problems, primarily based on the concepts that equate safety with cleanliness. In general such Policy respond to obvious hazards that pose clear risks. Regulations have been defined for hazards that have straightforward technical fixes. Regulations standards are set at the performance limit of the technology. When hazards cannot be addressed with the current technologies regulations can either keep the hazardous food out of the consumers or to ensure that consumers can protect themselves. The efficiency of such approach relies on a strong control and enforcement system. It cannot however address not clearly defined risks or contemporary hazards.

Many SADC countries have based their food safety policy on regulatory approach. This regulatory paradigm is most effective in areas of clearly defined risks when broad public concern and support for government intervention exists, and public confidence in the safety technology is high. This is obviously not the case in SADC countries, with few exceptions for instance in South-Africa, Mauritius or Botswana in some food sector.

Business considerations. In modern food safety system business have the first responsibility to ensure that the food put on the market is safe for human consumption. Thus, the model of food safety policy establishment can significantly impact business. With recent movements toward preventive measures such as HACCP rather than end product testing, food safety policy should not only be addressed through the existing paradigm of regulation but should expand on the roles and responsibilities of the food production and processing industry.

Compliance requires exporters to address traditional food safety concerns that are the subject of long-standing regulations of importing nations. It also requires them to deal with a dizzying array of new problems brought to the fore at the conclusion of different food trade agreement. One such policy is the implementation of GAP, GHP, GMP and HACCP.

Some SADC countries have embarked on an extensive programme of HACCP training and implementation. However, only food sectors dealing with foreign lucrative market are concerned so far; fish and fish products, meat and meat products.

Consumer considerations. Consumer participation in food safety debate is fundamental. Consumers have the right to know and to choose what they are eating and the right to participate in the process of determination of acceptable risk. This requires that process be transparent; government and the industry cannot paternalistically decide what level of risk consumers deem acceptable.

Consumers associations seem to be inexistent in SADC countries. The bottom line for the industry and regulatory agency is to acknowledge that consumers want to be part of the market and have their preferences and requests expressed. As other stakeholders in the food system, consumers need to be informed and made aware of costs, risks, and benefits. These facts should be conveyed as part of amore comprehensive communication process.

Most lucrative markets for food products are abroad that could explain the weaknesses of consumer associations within the SADC region. Therefore, consumer's considerations do not play its role in defining Food Safety Policy by SADC member countries.

Science-based risk assessment considerations. Risk assessment is the process through which information on risks is identified, organized, and analyzed in a systematic way to get a clear, consistent presentation of data available for practical decision-making. Without going through the risk assessment process, there is no scientific basis for regulatory decision-making. A common way that Food Safety decisions are currently made is to define risk goals and apply regulatory sanitary measures at specific. When the uncertainty level is high the principle of precaution should apply.

Codex has promoted the concept of risk analysis as a framework for developing public policy with regard to the safety of the food supply. Very few have been done so far in the area of Risk Assessment. At the national level, epidemiological data on the incidence of

food borne diseases and information of the level of exposure of the population, and especially vulnerable groups, to food borne hazards are essential prerequisites for any risk assessment.

Political considerations. This has to deal with how to better coordinate food safety activities and identify the necessary changes to put in place in the existing food safety status. Three main areas should be dealt with when building a food safety policy based on science: the pressure to demonstrate results from food safety programmes, the need for enhanced harmonization and coordination of food safety activities, and the need for better understanding of how to best implement a risk-based food safety regulatory system.

In all SADC countries, the responsibility of regulatory food safety control is shared among different ministries at national and local level. The Ministry of Health, Agriculture, Fisheries, Environment, Trade and Industry, Tourism are involved in food safety activities.

This creates many problems such as duplication of regulatory activities, increased bureaucracy, fragmentation of activities as well as lack of coordination between the different bodies involved in food policy, monitoring, auditing and control of activities. For instance in some countries the regulation of milk and dairy products are separated from the food control done by the Ministry of Health. The Ministry of Agriculture and the food industry involved undertake these activities. For instance the data generated by microbiological analyses are not linked to public health and food safety monitoring programme. This results in a very poor and weak planned national food safety activities.

The establishment of a National Food Safety Authority coordinating all food safety activities can be a solution. This body should include all stakeholders and take also advice from authorized experts and expert groups and define the food safety policy.

3. Food Legislation

The protection of public health is the paramount objective of food safety regulation viewed at national, regional or global levels. Effective food safety systems require a foundation of food safety laws that are appropriate for, and responsive to “the farm to table approach”.

In many SADC country there is no separate and comprehensive food law. The food legislation more often reflects under the general public health act. This is for instance the case in Mauritius, South Africa and in Zambia.

In some countries there is an array of scattered food laws dealing with some specific food safety aspects but they do not cover the all area. This is the case for instance in Lesotho and Tanzania.

On the other hand, the existing legislation in several countries in the region is outdated. Several countries in that position are therefore revising their food legislation in line with the WTO Agreement or under some trade agreement with EU. This is the case for

Mauritius, Zambia and Tanzania for instance. It should be mentioned that very few countries of the region have issued regulations on GAP, GHP, GMP and HACCP for the all food sectors.

Regulations are still limited for example to fish and fish products like in Mozambique and Tanzania. Some reviews, like the Zambia Food and Drug Act 2000 still maintains outdated or banned chemicals.

Current trends in modern food legislation and the obligations for international trade require SADC countries to update and strengthen their legislation. Revising food law is a lengthy exercise; therefore provisions should be made to introduce subsidiary legislation and specific regulations such as codes of practices and equivalence determination.

As many countries do not have in place a comprehensive framework on Food safety Laws, the flexibility introduced with subsidiary legislations will allow SADC counties to deal with necessary frequent changes arising from global food trade. Upgrading food legislation is an ongoing process and will need the contribution of all stakeholders.

4. Enforcement System

Food safety laws, alone, will have little practical impact on a country's ability to ensure a safe food supply. There must be a corresponding regulatory and enforcement infrastructure to implement the laws.

The activities pertaining to food control in the Region vary greatly in set-up and effectiveness and do not necessary reflect all the institutions involved in food safety. In Zambia, Mozambique and Tanzania for instance one institution is responsible of all inspection activities. In South Africa the situation is rather complex where several institutions are responsible of food inspection according to the sector.

In all SADC members countries the number of qualified inspectors is limited. As a result all the activities are not efficiently undertaken.

Various institutions or various departments within the same ministries have identical or similar responsibilities regarding food inspection. Most of inspection activities focus solely on end-products analysis. Sampling and en-products is generally recognized to be unsatisfactory means of controlling the quality of the final product. However, some testing for export batches is prudent, if only to be aware of the extent of variation in some key criteria (such as heavy metals or chemical residues) and to verify the effectiveness of HACCP system.

Inspection activities are quite often reactive following reported food borne disease outbreaks or concern specific products only. Inspection bodies have to review the findings from inspections and make timely determinations as to whether regulatory action, such as seizure or recall is necessary to protect public health

In countries where HACCP have been implemented in a particular food sector, there is no reference to auditing the compliance of the system by authorized officers. Governments need to provide extension services to advice industry in the proper implementation of safety assurance system including HACCP.

Through appropriate training and experience, the responsible bodies should have to perform mandatory unannounced inspections of production and processing companies to determine whether these industries are producing food that is unsafe or inappropriately labeled that might adversely affect consumer's health.

HACCP of inspections are undertaken in South Africa and in Lesotho with the meat inspection board on a small scale especially for exported products.

Food samples should be tested to determine the identity and quantity of food contaminants, including microbial pathogens, hazards chemical, natural toxins, and harmful parasites. Some countries like Mauritius, Mozambique and South Africa do perform these activities. However, in most of the cases they are linked to meet export certificate requirements.

Very few SADC countries have adequate laboratory services, in term both capacity and capability, the list include Botswana, Mauritius, Mozambique, South Africa and Zimbabwe, however all the laboratories are not necessarily accredited.

Some countries with acceptable analytical capacity do not however perform the required number of tests. As a result, third party laboratories do also play a role in certifying food products for export; this is the case in Zambia for instance.

Not all SADC countries have the capability to analyze for heavy metals, mycotoxins, pesticides residues and veterinary drug residues and to detect GMO's except South Africa.

The absence of coherence in national food safety programmes and lack of cooperation will jeopardize the equivalence determination process. SADC countries need to pay more attention in certification for import and export for all food products including donated food, as this will also prevent the dumping of outdated products or food to close to expiry date in the region.

Most of the countries in the SADC region have organized or attended regional or international conferences/training in HACCP or food inspection. On the other hand, local training in HACCP and new inspection methods are being organized in recent in Zambia, Tanzania, Mozambique, Mauritius and South Africa for instance. HACCP is also one the subjects in the curricula for food science and technology training in some of SADC countries and this should be standardized.

5. Analytical Capability

Of all the fourteen countries of the SADC region, only one country, South Africa, has adequate laboratory services in terms of both capacity and capability covering the all food safety area, including industrial chemicals, pharmaceuticals, food additives, animal feed additives, pesticides an microbiological analyses.

Other countries have limited laboratory services regarding the number of tests to be performed and the range of analyses. Capability is seldom limited to one area, like microbiological analyses for fish and fish products in Mozambique, Mauritius and Tanzania.

All countries in the region rely on South Africa for complicated or sophisticated analyses, and as a consequence there is a relatively long delay in obtaining tests results.

In country a country like South Africa even tough the analytical capacity and capability meet the international requirements, all laboratories are not accredited.

On the other hand, recent food safety problem, such as the contamination of meat with dioxins, that require very sophisticated and expensive detection methodology for control of meat and meat products clearly necessitate a regional approach to overcome the problem. Controls are becoming more stringent in exporting lucrative markets like the requirement on the safety of water used in food processing and the quality of water used for aquaculture production. Very few SADC countries do meet these new requirements as shown by inspections done in the region.¹

Many efforts have been done in the SADC Region in order to have at least reference Laboratory (ies) in each country to be accredited. However, this is not yet fully achieved.

Some countries like South Africa and Mauritius have third party laboratories accredited, nevertheless international auditing have demonstrated that there are still some

¹ EU veterinary inspections report Tanzania, Mozambique, Angola; 1999 and 2000.

weaknesses in the accreditation system and accredited laboratories do not necessarily meet the standards. All the other SADC countries have not yet accredited laboratory in respect to food safety. Accreditation is not an administrative exercise, it is a long process and laboratories have to demonstrate experience and the ability to perform accurate and reliable analyses based on Good laboratory Practice. Management structures and operational procedures of official food control laboratories should conform to the international guidelines specified in ISO/IEC Guide 25.

Personnel qualification is a critical issue in the region. There is no official training programme for inspectors in order to enhance their analytical skills. The traditional in-house training is insufficient, formal training and laboratory schemes need to be promoted. Inter-laboratory testing schemes need to include regional and international laboratories. Inter-laboratory testing schemes should include accredited and non-accredited laboratories as this contribute to measure laboratory performance and update analytical methods.

6. Epidemiological Systems

Systematic collection of epidemiological data is necessary planning, implementation and assessment of food borne disease control.

Food borne hazards can be grouped into two categories:

- Micro biological hazards, pathogenic bacteria, viruses and parasites
- Chemical hazards: pesticides and veterinary drugs residues, additives, heavy metals, hormones, mycotoxins, biotoxins and radionuclides.

Of these hazards, microbiological intoxications are by far more important.

Reliable information on the extent and the magnitude of food microbiological contamination in the SADC countries is not available because of the absence/deficiency of food borne disease surveillance and the weaknesses of the existing programme. Underreporting is common, and food borne diseases are often perceived as mild, self-limiting diseases or as normal occurrence.

Each member state needs to develop a plan to collect and evaluate information on food borne disease and hazards associated with the food continuum. In fact food borne pathogens do not only affect the country's inhabitants but also visitors and other travelers.

The collection of food borne disease will establish and overview of food safety in the SADC region, thereby facilitating the establishment of risk management and risk communications options.

The global burden of food borne diseases including mortality and morbidity data, need to be better assessed and this cannot be achieved without the participations of all countries including SADC members. Global surveillance must ultimately generate global epidemiological and incidence data on a range of food borne diseases. Without these data it will be difficult to select and implement appropriate food safety programme. Data are also required by international organizations such as FAO and WHO to support/ provide baseline information for risk assessment.

7. Interactions between Government and Food Industry

Government and industry share certain common goals, including ensuring that foods are safe and providing environment wherein consumers have confidence in the safety of the food system. However government and the food industry have specific role to play. Government meets its food safety goals by being overseer of the total food system, from production or harvesting to consumption. This involves a variety of activities such as:

- Inspections,
- Documentation the burden of food borne disease
- Identifying food safety problems through epidemiology,
- Conducting research to understand the problems,
- Enforcing regulations to prevent future problems,
- And educating food handlers at all levels in proper procedures.

The food industry meets its food safety goals by establishing policies and procedures that can ensure the safety of its products like GAP, GHP, GMP and HACCP and quality assurance system based on ISO 9000 series and 14000. This is accomplished through knowledge of the processing conditions on safety of the food. However continued adjustments are necessary to comply with changing regulations. Industry plays also a vital role in educating consumers in the safe handling and preparation of its product because this is essential for minimizing the risk of food borne illness.

Certain activities between government and industry are mutually beneficial and should continue to be encouraged, these include for instance sharing information derived from surveys on hazards and research to clarify and enhance food safety policy and practices. By sharing information experiences more effective, meaningful guidelines or regulations can be developed. Mutually developed criteria are preferred over criteria established solely by government. The reason is that each party brings a different perspective in

terms of experience, knowledge of process and expectations of what may be necessary to achieve a food safety objective and provide an appropriate level of consumer protection.

In the SADC Region except area dealing with export of food products meant for export to lucrative market overseas, EU, US or Japan, the process is very weak. Interaction is sometimes stimulate by a failure to export a certain food products or commodity like for instance in the case of milk and dairy products in Zambia. Nevertheless the impact of such occasional activity is limited.

The very traditional interaction that still occurs between government and industry in the SADC region involves especially inspection activities, regulatory compliance, interpretation on new or recently modified regulations and regulations enforcement.

New approach based on assessing each operator's food safety system for instance GHP and HACCP, and whether the system is adequate and being properly implemented is not yet operational in the all food sector within the SADC Region.

Finally risk communication should include input from both government and the affected company or industry segment. Industry has the primary responsibility to provide the information necessary for complete, full disclosure of affected products for easy identification and recall. As a matter of fact this is not efficiently done within the SADC. Very few cases have been reported and examples are limited. Most the recorded concern imported products within one of the SADC member country like in Mauritius or South Africa.

The process rarely applies to local food industry, probably by fear of economic losses.

8. Interactions Government Food Services

Food services through food handlers play an important role in the prevention of food borne disease. They may act as a source of food contamination, due to inadequate personal hygiene or cross contamination.

The traditional practice of periodic medical examination of food handlers is not an effective way of preventing such contamination. On the contrary it causes false assurance of security.

Food handlers should undergo formal training and seminars on personal hygiene as hygienic handling practices are an essential component of modern food safety system. The training should comprise principles of good hygienic practices and application of the HACCP concepts. With appropriate education and training, food services will be able to identify any step in their activities, which is critical to ensuring food safety.

The training should include professional food handlers in the food processing industry and the catering services, domestic food handlers and consumers.

Education of food handlers is relatively poor and sporadic in most the SADC Region, there no systematic training or monitoring of the training by governmental institutions except area covered by membership (ostrich in South Africa) or benefiting from international support (fish sector in Mozambique and Tanzania).

Mauritius has developed programme hygiene training for food handlers coordinated under the Ministry of Health that could be a good example for the region.

9. Relations with Consumers Associations

Government should assist consumer's to became aware of the importance of access to safe and nutritious food as well as require them and their representatives to participate in national efforts to ensure the safety and nutritious nature of food for the community.

A new area requiring close cooperation is the communication of results of risk assessments being conducted by regulatory agencies. Though the risk assessment process certain food groups may be identified as being of higher risk than others. This information must be communicated so that consumers will be informed in a positive, constructive manner without instilling fear and rejection. An appropriate balance is needed to inform consumers of the information while not undermining confidence in the food system.

Although in a number of countries of the Region, consumer organizations and nongovernmental organizations are active regarding the issue of food safety, there seems to be little or no coordination in this field.

11. Research in Food Issues

The production, processing and marketing of food continues to undergo major transformations, especially in industrialized countries putting more pressure in developing countries as well. These new development require SADC countries to conduct research and studies on the exposure of their populations to chemical and microbiological hazards. These studies should be conducted in order to gather information on dietary intakes for various populations. By doing so, it will be possible to establish priorities, ranking of hazards, within risk assessment and management activities.

Countries in the SADC Region need to participate in international research activities by linking other food control institutions through network. This will foster the exchange of information on matter such as food imports supplies, nature of shipments, defects products, rejections and detentions of food products.

The international research collaboration will also address outbreaks of food borne illness, data on chemical and microbiological contamination of foods and forthcoming data for ongoing research. For the sake of efficiency a Regional Food safety body should manage the network. Research needs to include also a regional database on biological and chemical food borne hazards, which should integrate official documents and other available information on data in the scientific literature.

12. International Cooperation and New trends in Food Safety

The globalization of food trade and increasing problems world wide with emerging and re-emerging food borne diseases have increased the risk of cross-border transmission of infectious agents. Because of the global nature of food production, manufacturing and marketing, infectious agents can be disseminated from the original point of processing and packaging to locations thousands of kilometers away.

Food safety requires enhanced levels of international cooperation in setting standards and regulations. Food safety measures are not uniform around the world and such differences can lead to trade disagreements among countries. This is particularly true if the requirements are not justified scientifically.

International Cooperation

SADC member countries should maintain an active participation in international for a where recommendations, standards or guidelines concerning consumers health protection are elaborated, particularly with a view of ensuring that such recommendations, standards or guidelines have sound scientific basis.

SADC Region should agree on a mechanism of evaluation of the scientific principles upon which health standards are based. The task can be easy if a Regional Food safety Body is set-up.

Codex activities aimed at setting international recommendation are changing considerably from what they have been until now. Scientific developments in fields relating to food, changing attitudes of consumers, new approaches to food control, changing perceptions of government and food industry responsibilities and changing food

quality and safety concepts will present the SADC region with new challenges and conceivably the need for new standards.

The consumer protection elements of the Codex, which are domain of the “horizontal” committees, are currently gaining in importance, while the compositional or “recipe” elements of individual commodity standards do not appear to attract as much interest as before. At present, interest in the quality aspect of Codex standards remains, although the importance attributed to such issues in the future will depend on international attitudes and demands.

The challenges raised by all these new issues will require regional and international cooperation in terms of training in the application of risk analysis, the application of HACCP system, food inspection and food analysis.

SADC countries need at the same time to actively participate in the Codex meeting setting these new rules and regulations regarding food safety.

International assistance will also be needed to assist the Region and individual government in developing and implementation of modern food legislation, development of information systems that allow countries to monitor food contamination and conduct surveillance of food borne disease.

13. Risk Analysis

Placed in the historical context, and the new context of trade agreement, simple forms of risk analysis were used and the information passed from generation to generation. However, risk analysis as evolved in more comprehensive way to include new complex statistical calculations.

The Codex has promoted the concept of risk analysis as a framework for developing public policy with regard to the safety of the food supply. The risk analysis process comprises three parts: risk assessment, risk management, and risk communication.

Traditionally, food control measures were based on maximalistic approach in factory/cargo inspections, the collection of large number of physical samples and their laboratory analysis. These laboratory results were compared to standards and the appropriate decision was taken. The choice was limited to acceptance and rejection or acceptance with some treatment if possible.

New trends in modern food safety approach “from farm to table” coupled with high trade volumes of food products have rendered obsolete the routine inspections of end products to concentrate more on safety and quality process standards that ensure safe food production.

Risk analysis is defined as a systematic procedure comprising the scientific evaluation of hazards and the probability of their emergence a given context (risk assessment), the assessment of all measures making it possible to achieve an appropriate level of consumer protection (risk management), and the exchange of information with all the parties concerned; decision makers, inspectors, consumers and producers in order to explain the reasons and justify the management measures proposed (risk communication)².

Although heavily promoted by Codex and other international institutions like ILSI, EPA, and ANZFA, the necessary infrastructure needed to conduct risk analysis are still missing within the SADC Regions. Some countries like South Africa have few people with basics knowledge on how to conduct the process.

With few exceptions, risk analysis is not yet introduced in Food Science and Technology curricula in the SADC Region.

13.1 Risk Assessment

The establishment of a comprehensive approach to food safety policy that can provide the appropriate level of protection is the basis of risk assessment. The primary objective of food safety policy is to protect consumer’s health in the society in the food continuum.

Thus, risk assessment is regarded as the foundation of scientific advice with regards to consumer health. Scientific risk assessment offers a sound basis for proposals and measures in the field of consumer health and food safety. Risk assessment should be done in accordance with internationally agreed procedures.

Two kind of exposure assessment, chemical and microbiological need to be undertaken in order to quantify the risk and determine the ALOP.

Chemical compounds, pesticides and veterinary drugs, contaminants, food additives find their way in food.

There is need to conduct dietary survey or assessment based on food composition data, food balance sheet, household budget and household compositions. In the case where a

² Consumer Health and Food safety, EU Communication, 1997.

staple food is concerned survey should be done countrywide. Calculations should take into account corrective factors like, processing, cooking, edible portion, and storage. As mentioned earlier all the stakeholders should participate in this exercise.

Due to the particular situation of the SADC Region, with some countries being net importers of food and feed, and the intensive crop production system, chemical contamination of water, fruits and vegetables, meat and meat products, milk, cereals are the main products of concern.

Chemical exposures assessments are however hampered in the region by the inexistence, the limitation or the inadequacy of consumption and residue contamination data. In fact the region, except South Africa, has very limited capacity and capability to undertake concerned chemical analyses.

Model of microbiological risk assessment have been published in recent year. The first models addressed drinking water contamination. Other studies are now dealing with pathogenic microorganisms in food products.

Microbiological intoxications are important in the SADC Region however reliable information to conduct the exposure assessment is missing, as there is no systematic food borne disease surveillance.

Different techniques can be used to conduct quantitative microbiological risk assessment exposures assessment, dose-response data from human oral studies and predictive microbiology.

Implementing quantitative microbial risk assessment is critical for the SADC countries as this form the basis for defense of their legislation based on such risk assessments in the event that this is challenged under the World Trade Organization (WTO) rules.

13. 2 Risk Management

Risk management considers different options available to mitigate the risk in order to achieve the appropriate level of consumer protection in light of the results of risk assessment and how to manage the risk.

The implementation of a risk management decision focuses on all aspects relevant to ensuring the implementation along the food continuum, including production, processing and distribution. It also focus on all levels of control and enforcement and on the

appropriate reporting and feed back in respect to the measures taken as a result of the chosen risk management option. Risk management is a continuous process.

When addressing import and export of food products, the following aspects have to be dealt with, the existence of information systems on food borne outbreaks, the networking and exchange of information in the country and between trading partners, consignment of foods and results from surveys on food contamination, the quality control of exports, the implementation of HACCP systems and the education and communication on risks potentially originating from foods.

In most countries of the SADC Region a separate legislation covering food does not exist. Issues related to food safety are often covered in more general legislation related to public health. Quite often, the existing food legislation is not fully updated neither upgraded.

In many countries responsibilities for food safety and control are assigned to many ministries and their different departments. In these cases, the decision making process may become very difficult or there is no decision taken at all like in Zambia in the case of raw milk.

Difficulties are experienced in the information flow between the different decision makers in the food safety and control system, for instance in Zambia between the Ministry of health and Ministry of Agriculture in the raw milk issue.

None of the SADC countries do operate efficiently the coordination of food safety issues resulting in an inappropriate exchange/absence of information between ministries, control institutions and existing laboratories. Some hazards are never reported.

13.3 Risk Communication

Risk communication is the exchange of information and opinions concerning risks and risk related factors among risk assessors, risk managers, consumers and other interested parties. Risk communication must be as transparent as possible. To achieve this, there should be a wider access possible to scientific advice and information to all interested parties including consumers.

Risk communication may originate from various sources on the local, national, regional or internal level.

Risk communication provides the meaningful, relevant and accurate information in clear and understandable terms. Its ultimate goal is to foster public trust in the food safety

system by providing a scientific basis for understanding of proposed and implemented risk management decisions.

Some of the principles of effective risk communication include the good knowledge of the audience, the involvement of the scientific experts, the clear differentiation between science and value judgment, the demonstration of sharing responsibilities and being a credible source of information, the assurance of transparency and the placing of risks under consideration into perspective with other encountered risks.

As communication is an expertise in itself there is a need to establish a specific expertise on communication in the field of risk communication.

Food safety issues are not always objectively presented in the media, thus the communication with the education of interested parties such as, food producers, food handlers, inspectors and consumers about food safety and food risks is needed.

For historical and structural reasons, many countries in the Region still operate a dual qualitative and functional system of control of imported products and locally produced products.

Although most of the countries are aware about the Codex recommendation concerning the implementation of HACCP systems, countries face difficulties in changing from traditional procedures to HACCP. Despite the limited resources available, sampling of import products may account in some cases up to 100% of imports. Risk analysis approaches are rarely applied.

SADC countries need to set up a system of exchange of information and surveillance of biological and chemical hazards in food.

14. GMO's

Research and development activity continues to unearth new technologies for enhancing our food supply, improving food quality and safety, and extending the shelf life of foods³. There remain sound reasons for the ongoing evaluation of these technologies to ensure they pose no threat to public health and the environment.

The presence in a new foodstuff of substance which are not present in the equivalent existing food stuff and which is likely to raise ethical issues or which may affect the health or certain categories of the population (for instance the presence of substances which could have allergic effects) must be indicated clearly.

³ Developing an Food safety Strategy, WHO, 2001

The joint FAO/WHO consultations of Foods derived from Biotechnology have developed policy guidance for assessment food products derived from biotechnology. The methods used to evaluate genetic modified organisms may set operational parameters for evaluating the use of new technologies.

In order to protect public health, new food stuffs and new food ingredients must be tested to ascertain their innocuity according to already established international guidelines procedures before there are released onto the market. The environmental risks which could result from these new foodstuffs or these new ingredients containing GMO's. In such cases, the evaluation of risk to the environment must be carried out in order to ensure the security to the environment.

15. Conclusion

Food safety in the SADC Region requires strong impetus to enable countries to cope with new challenges facing them. Efforts should be made in the area of review of national food safety programmes, including legislation and regulations, strengthening of the food inspection capability and capacity in all aspects, strengthening the analytical capability on national and regional food control laboratories and the establishment of sound preventive approaches such as HACCP.

Based on modern approach, principle of food law should be included in one single regulation, the food law should provide a high level of health protection, and that only safe food may be permitted onto the market.

The proposed regulation shall make mandatory the installation of a comprehensive Traceability system at all stage of the food continuum.

16. Recommendations

1. Member states need to develop and strengthen their national food safety programmes based on the “farm to table approach”.
2. When national legislation and laws on food safety are reviewed, approaches of risk analysis should be taken into account and should include the industry and consumer organizations.
3. All sanitary measures related to food safety and consumer protection, including street vended foods and food aids, should be based on risk analysis.
4. Mandatory regulations and standards should be based on science and in order to foster harmonization as requested in the SPS agreement, based on Codex standards.
5. Countries of the Region should make available appropriate resources for risk assessment and risk management activities. Specific attention should be paid to activities of risk assessment and inspection.
6. Countries within the SADC Region should set up appropriate national risk management structures, and reorganize the food control system under one institution. The risk management structure should be under the direct authority of this national Food Authority.
7. Countries of the region need to establish a national risk assessment body, which should host the needed scientific committees, collect and analyze information related to food safety and quality and which should organize the availability of expert advice.
8. Countries of the region should foster the communication on risks related to food safety and quality, which should include communication between risk assessors, risk managers and all other stakeholders. Risk communication should be undertaken on the national, regional and international level.
9. Countries should make full use of available scientific expertise and scientific structures both at the regional and international level, which are involved in risk assessments on food safety and consumer protection.
10. The implementation of the Codex General Principles of Hygiene should be actively pursued, including the application of food safety management systems based on HACCP along the food continuum.
11. Member states must continue to monitor and evaluate their food safety activities.