Review

Survey on nourishment wellbeing System: Ethiopian point of view

*Negasso E. Dinka, Hailu E. Yimenu and Mikael S. W.

College of Veterinary Medicine, Faculty of Medicine, University of Gondar, Gondar, Ethiopia.

Ensuring food safety to protect public health remains a significant challenge in both developing and developed countries. In the last decade, large efforts have been made on the global level towards development and implementation of food safety management systems to assure food safety in the agri-food chain. Current and new challenges to food safety include changes in animal husbandry, food or agricultural technology, lifestyle and consumer demands and others. In Ethiopia, key stakeholders involved in food safety management include Ministry of Health , Ministry of Agriculture, Quality and Standards Authority of Ethiopia, Environmental Protection Authority, Ministry of Industry, Ministry of Trade, different Federal and Regional Governmental Bodies, Research Institutions, Ministry of Education, Food Manufacturers, Food distributors and Hotels. Even though effective food safety systems are vital to maintain consumer confidence in the food system and to provide a sound regulatory foundation for domestic and international trade in food, there are gaps in Ethiopian food safety system on legal and policy frame work, food-borne diseases surveillance, coordination of organizations involved in food safety management, and laboratory services for relevant food hazards. Lack of appropriate food safety assurance systems are problems that have become obstacles to Ethiopia's economic development and public health safety. There is no appropriate policy framework that guides food safety management. Initiating the establishment of National food safety Authority/policy, upgrading the capacity of existing public health laboratory, personnel, food-borne diseases surveillance, and legal and policy frame work are as such suggested to overcome these problems.

Key words: Ethiopia, food safety, regulatory body, policy.

INTRODUCTION

Safety is defined as the condition of being safe from undergoing or causing hurt, injury or loss (Webster"s Ninth New Collegiate Dictionary, 1990). Food safety is the assurance that food will not cause any harm to the consumer when it is prepared and/or consumed according to its intended use (FAO/WHO, 1997). Food safety is a growing global concern, not only for its continuing importance to public health, but also because of its impact on international trade (Burros, 1997). Ensuring food safety to protect public health remains a significant challenge in both developing and developed countries. Even though considerable progress to strengthen food safety systems has been achieved in many countries, highlighting the opportunities to reduce and prevent food-borne disease, up to one third of the population of developed countries is affected by food-borne diseases each year, and the problem is likely to be even more widespread in developing countries (Royal

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*Corresponding Authors. Email: dr.negdinka3@hotmail.com

Society of Chemistry, 2001). Motarjemi and Mortimore (2005) emphasized that ensuring food safety in today"s complex world is a daunting task and is possible only with a concerted effort of all sectors including government, consumer organizations and industry.

Effective food safety systems are vital to maintain consumer confidence in the food system and to provide a sound regulatory foundation for domestic and international trade in food, which supports economic development. New international trade agreements developed under the World Trade Organization (WTO) have emphasized the need for regulations governing international trade in foods to be based on scientific principles. The Sanitary and Phytosanitary Agreement (SPS) permits countries to take legitimate measures to protect the life and health of consumers, animals and plants provided such measures can be justified scientifically and do not unnecessarily impede trade (FAO and WHO, 2005).

In the last decade, large efforts have been made on the global level towards development and implementation of food safety management systems to assure food safety in the agri-food chain. This is demonstrated by multiple Codex Alimentarius guidelines and for example in European Union, illustrated by the introduction of the General Food Law (Ghent University, 2011).

This review aims to provide a brief overview of food safety system in Ethiopia and forward suggestions to bridge gaps observed in the current food safety issues in the country.

FOOD SAFETY SYSTEM

Food safety system is broadly classified in to two namely, traditional and science-based food safety systems (FAO/WHO, 2003).

Traditional food safety systems

Traditionally food safety system had defined unsafe food and has prescribed the enforcement tools for removing unsafe food from commerce and punishing responsible parties after the fact. This indicates that it has been reactive and enforcement oriented rather than preventive to reducing the risk of food borne disease. Most developing countries already have some sort of food control system in place, usually based on hygiene and adulteration/fraud inspection. While these vary considerably, they usually incorporate food laws and regulations, food control management, inspection and laboratory services, and sometimes mechanisms for information, education and communication and moni-toring of the food supply (FAO, 2009).

Traditional Food Safety System is:

(i) Involve no structured risk analysis;
(ii) Relies on end product inspection and testing; and
(iii) Level of risk reduction not always satisfactory (FAO/WHO, 1995).

Due to the above and other reasons traditional food safety system unable to detect and resolve many current problems, and to effectively deal with the full range of complex, persistent and evolving challenges confronting different parts of the food chain (Institute of Medicine, National Research Council of National Academies, 2003).

A Science (risk)-based food safety system

As a concept, a science-based approach to food safety is not completely new. It is related to processes such as good agricultural practices, good hygienic practices, good manufacturing practices and Hazard Analysis and Critical Control Point system (HACCP), which are already used in many countries. Scientific assessment of chemicals in general has also a rather long „tradition". What is new is the use of risk analysis as a framework to view and respond to food safety problems in a systematic, structured and scientific way in order to enhance the quality of decision -making throughout the food chain (FAO/WHO, 2003).

Risk analysis

According to the Codex Alimentarius, risk analysis is a process consisting of risk assessment, risk management and risk communication (Codex Alimentarius, 1999). Risk analysis forms the framework for the interactive activities between risk managers, risk assessors, operators and other interested parties. Generally, risk assessment may be considered as a science-based part of risk analysis making risks understandable, whereas risk management is developing and carrying out actions to reduce the risk when necessary (McKone, 1996). Risk management needs to take social, economic and political aspects into consideration when risks are evaluated. All communication exchanged between risk managers, risk assessors and other interested parties is termed risk communication.

Functional separation of risk assessment from risk management has been considered an important principle in order to promote scientific risk assessment as the basis for risk management decisions, although the essence of interactive communication is recognized (Codex Alimentarius, 2007a). Risk assessment was defined as a scientific evaluation of the known or potential adverse health effects resulting from human exposure to food-

borne hazards (Codex Alimentarius, 1999). Official bodies were considered responsible for using risk analysis to determine realistic and achievable risk levels for hazards and for basing food safety policy on the results of these analyses.

HACCP

The hazard analysis critical control points (HACCP) is a common sense approach to identifying, quantifying and controlling food safety hazards. It sets up a framework allowing the detailed examination of a process to identify hazards and where the hazards can be controlled (Khandke and Mayes, 1998). HACCP system is a food safety management strategy which has been widely tested and established as an effective means of preventing food-borne diseases were correctly implemented (WHO, 1993). It is considered a scientific and systematic system for assuring food safety (Nguyen et al., 2004), which can be applied throughout the whole food chain (Domenech et al., 2008). It is a management system in which food safety is addressed through the analysis and control of biological, chemical and physical hazards from raw material production, procurement and handling to manufacturing, distribution and consumption of the finished product.

ISO 22000:2005

ISO 22000 is an international, auditable standard that specifies the requirements for food safety management system by incorporating all the elements of HACCP together with a comprehensive management system (Pillay and Muliyil, 2005). ISO 22000:2005 is a HACCP-type standard especially developed to assure food safety. ISO 22000 will dynamically combine the HACCP principles and application steps with prerequisite programmes, using the hazard analysis to determine the strategy to be used to ensure hazard control by combining the prerequisite programmes and the HACCP plan (Faergemand and Jespersen, 2004). The new standard offers an alternative to food enterprises that they do not implement ISO 9001 and they want to have an effective food safety management system (Aggelogiannopoulos et al., 2007) as it combines a series of advantages, involving quality management, external and in house communications, designating responsibility, implementing crisis management, continual improvement, and good health practices (Aggelogiannopoulos et al., 2007).

A modern science-based food safety system approach is:

(i) Preventive approach;
(ii) Addresses the farm-to-table continuum;

(iii) Use structured risk analysis and establishes priorities;
 (iv) Relies on integrated process control and shared responsibility; and
(v) Enables attainment of enhanced level of risk reduction (FAO, 2005).

CURRENT AND NEW CHALLENGES TO FOOD SAFETY

Food safety challenges differ by region, due to differences in income level, diets, local conditions, and government infrastructures (WHO, 2004). Here are some trends prevalent in both developed and developing countries that can increase food safety challenges (Rocourt et al., 2003).

Changes in animal husbandry

Modern intensive animal husbandry practices have been used to maximize production. This has resulted in the emergence and increased prevalence of several human pathogens, like *Salmonella* and *Campylobacter*, in flocks or herds of all the most important production animals (Global and Local, 2005). Crowding of animals has led to the increased use of antibiotics on so-called "factory farms" which in turn has been linked to the emergence of new strains of antibiotic-resistant bacteria (Global and Local, 2005).

Increases in international trade and travel

International trade allows for the rapid transfer of microorganisms and introduction of new and unfamiliar food borne hazard from one country to another. The increased time between processing and consumption of food due to long distance international travels leads to additional opportunities for contamination, time/temperature abuse, and increasing the risk of food borne illness (WHO, 2004).

Changes in food or agricultural technology

Advances in processing, preservation, packaging, ship-ping, and storage technologies bring new forms of foods to the market, and sometimes new hazards. For example, the increased use of refrigeration to prolong shelf-life of ready-to-eat foods has contributed to the emergence of *Listeria monocytogenes* (Rocourt et al., 2003).

Increases in susceptible populations

Young, old, pregnant, immunosuppressed (YOPI) stands for especially vulnerable sections of the population who

are prone to getting food borne infections because of their impaired or not fully developed immune system. Due to advances in medical treatment, people are living longer, and surviving with chronic medical conditions that used to kill them. By the year 2025, more than one billion of the world"s population will be over 60 years of age, two-thirds of whom will live in developing countries (WHO, 1998).

Changes in lifestyle and consumer demands

In developing countries, there is a general rise in urban living and street food is an important component of the daily diet. As a result, outbreaks associated with food prepared outside the home are increasing in many regions (WHO, 2004; Global and Local, 2005).

Bioterrorism

Food terrorism is defined as an act or threat of deliberate contamination of food for human consumption with biological, chemical and physical agents or radionuclear materials for the purpose of causing injury or death to civilian populations and/or disrupting social, economic or political stability. The biological agents referred to are communicable infectious or non-infectious pathogenic microorganisms, including viruses, bacteria and parasites.

The objective of terrorists in using such agents against a civilian population is essentially the same as that of their use in warfare against military targets: to cause widespread incapacitation and injury and/or to effect terror and panic (WHO, 2008). Following rising incidents of terrorist attacks in many countries in recent years, concerns about intentional adulteration of food by terrorists, criminals, or other antisocial groups have risen and led to the need for new preparedness efforts (WHO, 2002).

FOOD SAFETY IN ETHIOPIA: SITUATIONAL ANALYSIS

It might seem paradoxical to discuss on the subject of food safety when millions are suffering from lack of food and of the most inferior quality. At a national level however, both food shortage and lack of appropriate food safety assurance systems are problems that have become obstacles to the Ethiopian economic development and public health safety (FAO/WHO, 2007). Though the country is endowed with enormous potential for the production of agricultural and industrial food products, its competitiveness in the world market has been so far very low (NCC, 2010).

Exports of goods in Ethiopia are only about 7 percent of GDP, compared to an average of near 30 percent of GDP in Sub-Saharan Africa. Export levels still fall short of what is registered by other African countries with much smaller populations (Uganda and Tanzania both export more than $3 billion per year), and exports per person remain very low: only $24 in Ethiopia compared to $200 in Sub-Saharan Africa and $580 in developing Asia. Growth rates are also very modest if one makes a comparison with Asian countries over a decades-long time frame. For example, Ethiopia"s total exports were *higher* than that of Vietnam in the 1980s but are now just a tiny fraction: $2 billion in Ethiopia versus $65 billion in Vietnam. (Access Capital Research ethiopia"s export performance, 2010).

Food-borne diseases

According to patient morbidity statistics (Hospitals and Health centers) of selected food-borne and food related cases, the annual incidence of food-borne illnesses in Ethiopia ranged from 3.4 to 9.3%, the median being 5.8% for the years 1985/86 to 1989/90 (Wendafrash, 2010). The Primary Health Care Review for Ethiopia (1985) indicated that the proportion of deaths associated with diarrhea alone in different regions ranged from 22.6 to 62% with a median of 45%.

Summary report on out-patient visits (1989/90) of the Ministry of Health indicates 280,458 cases of food borne diseases, which is approximately shown to be 9.39% (Wendafrash, 2010). Burden of some important food-borne diseases in Addis Ababa Administrative Region, according the survey conducted in 2003/4, show that in 1995, there were 12,568 ascariases, 3,167 typhoid, 3,106 tapeworm, 16,424 tuberculoses, 457 infectious hepatitis cases; and in 1990 in Oromia region, there were 31,867 ascariases, 12,823 typhoid, 16,119 tapeworm, 56,740 tuber-culoses, and 1,479 infectious hepatitis cases reported (Environmental Health Department/MoH, 2003/4). In 1991 in Amhara region there were 1,493 ascariases, 260 typhoid, 8,565 tuberculoses, 51 infectious hepatitis cases, and in 1995 in SNNP region there were 321 ascariases, 1,451 typhoid, 2,061 tuberculoses, 232 infectious hepatitis cases were reported. In 1995 in Gambela region there were 260 ascariases, 131 dysentery, 191 typhoid, 834 tuber-culoses, and in 1991 in Afar region there were 75 ascariases, 270 typhoid, 65 tapeworm, 1,630 tuber-culoses, and 29 infectious hepatitis cases reported (Environmental Health Department/MoH, 2003/4).

In 2007 in Oromia Region alone 1913 cases of acute watery diarrhea (AWD) and 41 deaths were reported from June 25 to July 27. In the first week of September, 2009, 13 652 cases was reported from 77" woredas "(districts) in 7 regions with case fatality rate of 2.2%. The popu-lation at risk was estimated at 8.63 million (Wendafrash,

Table 1. Food borne disease syndromes reported to MoH.

Region	Type of FBD	No.	%
Tigray		44281	10.9
Afar	Amoeba	2634	1.2
	Gastro enteritis	4167	2
Amhara	Intestinal parasites	94991	10.5
	diarrhea	48880	5.4
Oromya	Gastro enteritis/duodenitis	88442	8
Somali	Gastro-enteritis	39468	11.8
	dysentery	23568	7
Beneschangul-Gumuz	Gastro-enteritis/duodenitis	11543	8.5
	Internal parasites	5806	4.3
SNNP	Gastro-enteritis- duodenitis	1 30570	5
	Typhoid	77001	2.9
Gambella	Intestinal parasites	2765	14.6
	diarrhea	360	1.9
Harari	Gastro -enteritis	3211	9.1
	Helminthes	1738	4.9
	Dysentery	1458	4.1
Addis Ababa	Gastro-enteritis	36667	7.9
Dire Dawa	Gastro -enteritis	4 662	6.2

Source, CSA, 2008.

2010). Overall, these reports suggest the high toll on the public due to food of inferior safety (Table 1).

The role of standards, laws and regulations in ensuring food safety

There is little information about laws and regulations concerning food safety in Ethiopia. However, some provisions were given under different regulations issued by the government for MoH, MoA, MoI, MoT, QSAE and EPA to address food safety matters in one way or another. This generally shows that there is a lack of appropriate policy framework that guides food safety management in Ethiopia (Dawit, 2010).

The Federal Democratic Republic of Ethiopia issued its first proclamation on public health back in 1947 that contained the surveillance of foodstuff and beverages and also the sanitation of building and facilities. Recently two new proclamations on Trade Practice and

Consumers" Protection proclamation 685/2010 and Commercial Registration and Business license proclamation 686/2010 were announced with the aim to contribute towards achieving better results in food safety assurance (FAO, 2008).

In Ethiopia, the development of food industries and the establishment of government regulatory bodies have grown in parallel. United Nations Industrial Development Organization (UNIDO) is making efforts to implement ISO 9000 and the HACCP system in Ethiopia based on the success it has achieved in the developing world, namely, Asia, Eastern Europe, Latin America and some parts of Africa (Belete, 2010).

Codex and food safety system in Ethiopia

The Codex Alimentarius commission is the international body responsible for the execution of the joint FAO/WHO food standards program. Created in 1962 by FAO and

WHO, the program is aimed at protecting the health of customers and facilitates international trade in foods (CODEX, 1991).

The National Codex Committee (NCC) was established under the auspices of the Quality and Standards Authority of Ethiopia (QSAE) in 2003 (Yalemtsehay, 2010). The member organizations are: Addis Ababa University, Ministries of Health, Agriculture, Trade and Industry, Education, Ethiopian Health and Nutrition Research Institute, Ethiopian Institute of Agricultural Research, Chemical Society of Ethiopia, ELFORA Agro Industry, Ethiopian Manufacturing Industries Association, Ethiopian Consumers Association and Ethiopian Chamber of Commerce and QSAE (NCC, 2010).

The main activities are adoption of recommend Codex standards as Ethiopian standards, represent the country"s interest on selected international Codex meetings, identify priority areas on food safety and develop fundable projects and conduct national awareness program on food safety and codex standards (Yalemtsehay, 2010).

Regulatory bodies in ensuring food safety

In Ethiopia, key stakeholders involved in food safety management include Ministry of Health (MoH), Ministry of Agriculture (MoA), Quality and Standards Authority of Ethiopia (QSAE), Environmental Protection Authority (EPA), Ministry of Industry (MoI), Ministry of Trade (MoT), different Federal and Regional Governmental Bodies, Research Institutions, Ministry of Education (MoE), Food Manufacturers, Food distributors and Hotels (Dawit, 2010; FAO and WHO, 2005).

Ethiopian Food, Medicines and Health Care Administration and Control Authority were established in accordance with Food, Medicine and Health Care Administration and Control Regulation No 189/ 2002. According to the new proclamation, the Authority is responsible for assuring safety and quality of food, safety, efficacy, quality and proper use of medicines, competence and ethical practice of health professionals, competence of health and health related institution and services (Dawit, 2010).

Quality and standards authority of Ethiopia (QSAE) in food safety

The Quality and Standards Authority of Ethiopia is the National Standards Body of Ethiopia established in 1970. The Authority, which is under the Ministry of Science and Technology. The Authority is mandated to ensure food safety through certification, inspection and testing (Erkyihun, 2010).

The Authority has accredited or internationally recognized on:

(i) System certification based on ISO/IEC 17021 Quality Management System on ten scopes, two of which are: Agriculture and fishery, and Food and beverage.
(ii) Microbiological testing based on ISO/IEC 17025 with four parameters namely; yeasts and moulds, total coliforms, fecal coliforms, and *E. coli.* (Fikremariam, 2010).

Animal and plant health regulatory directorate (APHRD) in food safety

The Animal and Plant Health Regulatory Directorate (APHRD) has been established since December 2007 under the Ministry of Agriculture and Rural Development. APHRD is entrusted with the responsibility of implementing and regulating the Sanitary and Phytosanitary measures of the country. Quality and safety of all animal and plant products and other input quality control such as the registration of pesticides, fertilizers and seeds also fall under the mandate of this Directorate.

Protecting and safeguarding the Ethiopian agriculture from the menace of trans-boundary animal diseases, migratory insect, plant pests, grain-eating birds, noxious invasive weeds and plant diseases (Gedion, 2010; MoA, APHRD, 2008).

Six quarantine stations are currently operational in the country. These are located in Adama, Dire Dawa, Jijiga, Metema, Mekelle Airport and Bahir Dar Airport and each quarantine station is staffed by 1 vet, 2 animal health assistant, 1 animal health technician and 1 laboratory technician. In addition to the aforementioned quarantine stations, 3 border check posts are also rendering quarantine service in different parts of the country.

These include the Bole International Airport check post in Addis Ababa with 3 vets and 3 animal health assistants (AHA), Moyale check post with 1 AHA, and Lafa"essa with 1 AHA are rendering border inspection services (Gedion, 2010). Export meat inspection service is rendered in seven export abattoirs. The inspection service in each abattoir is carried out by 2 veterinarians, 3 AHA meat inspectors, 1 meat technologist and 1 laboratory technician.

Concerning the local Municipal abattoir, there are over 250 abattoirs/ slaughter slabs in the major cities and towns of the country. On average 2 to 8 veterinarian meat inspectors are assigned to inspect the meat according to the size of the local abattoir (MoA, APHRD, 2008).

Role of research institutions in ensuring food safety

In Ethiopia research institutions have direct responsibility

with regard to food safety. Major duties and responsibilities are as follows:

(i) Establish measures to protect the consumer from unsafe, low quality, adulterated, misbranded or contaminated foods; the measures include provisions for minimum acceptable levels of food quality and safety, for differences in the ways in which food is produced, processed, packaged, labeled and stored, as well as for the conditions under which it is presented and purveyed,

(ii) Assess food regulations and fortification of foods with micronutrients and should fully take into account the recommended international standards of the Codex Alimentarius Commission,

(iii) Creating transparent communication in food analytical services and accreditation of laboratories regarding food safety

(iv) Conduct nutrient analysis and develop food composition to make use of it to control the risk inappropriate food consumption,

(v) Develop surveillance and monitoring programs for food-borne diseases and contaminants,

(vi) Identifying the sources of food-borne health risks and the development of procedures that reduce the magnitude and significance of food-borne hazards. They help in the assurance of a safe wholesome food supply (Dereje et al., 2010; Tekabe and Almaz, 2000).

Role of higher education on food safety issues

Among the thirty-three Universities, eight have launched Food Science and Technology and related fields of study in the last five years. These include Mekele University, Wellega University, Gondar University, Addis Ababa University, Haramaya University, Bahir Dar University, Jimma and Hawassa University (Geremew et al., 2010).

Specific roles of Universities to address food safety

(i) Assist in increasing the awareness, knowledge, and application of new and emerging technologies.

(ii) Organize and support the development of centers, facilities, human resources, journals, and workshops that promote, coordinate, and strengthen the application of food safety.

(iii) Encourage Research and Development on the manufacture of production equipment to help expand small-scale and rural industries.

(iv) Encourage the use of methods to enable the local production of industrial raw materials and other inputs.

(v) Support research to modernize traditional and handicraft technologies and make them more productive (Geremew et al., 2010; MoE, 2007).

The role of consumers' associations in ensuring food safety

Consumers" Association has a vital role in educating and enabling the consumers to be more alert to food safety. These associations contribute to the process of formulating and implementing of national food safety policy, proclamation, regulation in accordance with the satisfaction of consumers and producers (NCC, 2010).

The presence of strong Associations in a country enables the society to get the true facts and figures towards independent conduct of national food safety surveillance and delivery of product testing service. Once the food products are recognized by these associations, there will be little breach in trust in manipulation and food safety fear for consumption (Meier et al., 1997). There are no physically powerful adequate numbers of

Consumers" Association that are engaged on the activities to raise consumers" consciousness on food safety in Ethiopia (Endale, 2010).

Environment and food safety challenges

Pesticides have enabled farmers to produce some crops profitably in otherwise unsuitable locations, extend growing seasons, maintain product quality and extend shelf life. Nevertheless, these chemicals also pose some risks if used improperly or too frequently (US EPA, 2007). In Ethiopia, before a pesticide may be used on a food commodity, it must be approved for that use by an authorized government entity. During the approval process, tests have to be performed to determine that the product or its residues on foods will not present unreasonable risks to people, wildlife, fish, and plants. However, practically there are no sufficient studies undertaken on pesticide residue analysis in Ethiopia (FEPA, 2004).

GAPS ON ETHIOPIAN FOOD SAFETY SYSTEM

The food system in Ethiopia is not always as organized and developed as in other developed countries. Moreover, problems of growing population, urbanization, lack of resources to deal with pre-and post-harvest losses in food, and environment and food hygiene issues mean that food systems in the country continue to be stressed, adversely affecting the quality and safety of food supplies (Wendafrash, 2010; Alock, 1992; FAO/WHO, 2005). Gaps that hinder the evolution of food safety system in Ethiopia:

Legal and policy frame work

There is no comprehensive food safety policy in the

country, safeguarding the public from communicable and an infectious disease which equally applies to food safety is addressed in different policies such as the National Health Policy. The Codex texts are the basic reference materials for standard settings, and serve as enforcing tools to those items such as food additives, pesticide residues, and others where there are no developed Ethiopian standards (Dawit, 2010; FAO and WHO, 2005).

Food-borne diseases surveillance

Due to weak structural organization, underdeveloped human resource and insufficient resource allocated to food-borne surveillance, there is no systematic surveillance system in place. Occurrences of zoonoses are rarely reported and exchange of information between the two regulatory bodies is virtually absent as a result, the prevalence and magnitude of the problem inflicted by food-borne illnesses is not known (FAO and WHO, 2005).

Coordination of all organizations involved in food safety management

The lead government institutions responsible for food safety collaborate work together in organizing training workshops, standard setting, and drafting regulations include the Ministry of Health, Ministry of Agriculture and Rural Development, Quality and Standards Authority of Ethiopia, Ministry of Trade and Industry, Ethiopian Manufacturing Industries Association. Since 2002, these bodies have established a Technical Committee that implements a Food Safety Assurance System in accordance with the international market requirements supported by the United Nations Industrial Development (UNIDO). However coordination of activities at the lower level of the hierarchy remains weak. There is a lack of clearly defined, demarcated, and streamlined responsibilities and mandates, defragmented activities, duplication of effort misuse of human resource and wastage of meager resource allocated to the sectors (FAO/WHO, 2007).

Laboratory services for all relevant food hazards

Laboratory testing of food is carried at the Ethiopian Health and Nutrition Research Institute (EHNRI), which is mainly established for research purposes. There are six regional public health laboratories, which are under staffed and poorly equipped to perform food tests. The capacity of EHNRI to perform complex tests such as pesticide residues, aflatoxins, and certain pathogenic micro organisms is lacking and unable to cope with demands for several types of test requested by importing

countries as well as suspected imported foods. There is no veterinary public health laboratory which deals with bacteriological, toxicological, chemical and residue analysis of products of animal origin (FAO/WHO, 2005; FAO/WHO, 2007).

Public/Private partnership

Even though Consumers" Associations can play substantial role in ensuring food safety, there is no strong Consumers" Association movement in Ethiopia. The major constraints are as follows:

(i) Misperception of their objective by other parties;
(ii) Lack of promotional activities which can increase their entity at national level;
(iii) Limiting factors related to finance;
(iv) Inadequate linkage with different relevant stakeholders;
(v) Poor support from the governmental bodies; and
(vi) Lack of educated manpower… etc (Endale, 2010).

BENEFITS OF A STRENGETHENED FOOD SAFETY SYSTEM

Food safety plays a significant role in the national economic and health development by safe guarding the health of the nation, enhancing tourism, national and international trade for production, distribution and consumption of safe food, preventing avoidable losses and conserving natural resources. Countries with well established food safety assurance systems could export and trade their products without any barriers and become competitive in the global trade (FAO and WHO, 2005).

Food safety problems create an enormous burden on the country"s economy such as consumer costs include medical, legal, and other expenses, as well as absenteeism at work and school. For many consumers who live at a subsistence level, the loss of income due to foodborne illness can perpetuate the cycle of poverty (WHO, 2002). Chronic diseases caused by contaminated food, like reactive arthritis or temporary paralysis, can be even more damaging than the initial disease and add dramatically to the medical costs and lost wages (WHO, 1998). Costs to national governments stem from increased medical expenses, outbreak investigations, food recalls, and loss of consumer confidence in the products. Also it leads to increased demands on already overburdened and poorly funded healthcare systems in the countries.

Food safety system plays a great role also in food security by:

(i) Contributing to improved nutrition and health status of

the population there by increasing productivity and livelihoods.

(ii) Reducing public health costs through a decrease in food borne illness among vulnerable population and related social and economic implication.

(iii) Reducing food losses (per/post harvest), resulting in increased availability, stability and utilization (food chain).

(iv) Increasing national and international market access, increasing purchasing power and resulting in beneficial effects on farmers, food businesses and consumers (FAO, 2011).

CONCLUSION AND RECOMMENDATION

Effective food safety systems are vital to maintain consumer confidence in the food system and to provide a sound regulatory foundation for domestic and international trade in food, which supports economic development. Ensuring food safety to protect public health remains a significant challenge in both developing and developed countries, even though considerable progress to strengthen food safety systems has been achieved in many countries.

Food safety system in Ethiopia is not always as organized and developed as in other developed countries. Moreover, problems of growing population, urbanization, lack of resources to deal with pre-and post-harvest losses in food, and environment and food hygiene issues mean that food systems in the country continue to be stressed, adversely affecting the quality and safety of food supplies.

As such, the following points are suggested to overcome these problems:

(i) Initiate the establishment of National Food Safety Policy as well as Safety Council (Erkyihun, 2010);

(ii) Upgrade the capacity of existing public health laboratory, personnel, food-borne diseases surveillance system and legal and policy frame work (NCC, 2010);

(iii) Approach embassies, agencies and others to support the national food safety programmes through fund mobilization (FAO/WHO, 2005).

(iv) Disseminate food hygiene information through mass media (FAO/WHO, 2005).

(v) Finally it would have been good to establish a separate regulatory body the so called food safety authority at national level. This will change unorganized efforts of the different ministries into organized way and also avoid redundancy activities.

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