

Food Standards, Food Law and Regulation System in Ethiopia: A Review

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Abstract

It is worth recalling that regulation in the area of food quality and safety protection was emerged with the objectives of safeguarding consumers from both economic and health risks and to ensure the functioning of food markets in an orderly manner by prohibiting the production and sale of unsafe food products and fraudulent acts committed on foods. Ensuring the quality and safety of domestically produced, exported and imported food and food products constitutes one of the areas of food quality and safety protection. This is with an assumption that maintaining the quality of these foods is essential to protect public health, to satisfy the expectation of consumers, and to enhance foreign earnings and to maintain the confidence of food trading partners. Hence, governments assure the quality and safety of domestically produced, imported and exported food and food products. It has been noted that foods related laws in Ethiopia also do not meet what the supplying of safe and of good quality food so demands. In the first place, the existing laws are outdated and they focus only on the inspection of final products by overlooking the need to take proactive measures which are required by the current food quality and safety system; this proactive measure includes the need to conduct inspection from the sources, even beginning from the selection of farm lands. Secondly the existing law itself is not comprehensive and adequate in that it is scattered in different codes and legislations. As far as street foods are concerned they are becoming major dish for many persons, particularly for middle and low income persons. Similarly in Ethiopia preparing and selling of street food become the sources of employment for producers and sellers. They are produced and sold in major towns of Ethiopia. Particularly, in Addis Ababa it is a matter of fact to observe street foods vendors and consumers in every place in the city.

Keywords: street food, safety, regulation

Introduction to food standard

Food standards are “rules of measurement established by regulation or authority” (Reardon et al., 2001) and are enforced by governments, food companies and retailers. Their aim is to assure the confidence of consumers in the food systems (from farm to table), but also increase the information available to the final consumer, enabling them to make informed decisions concerning the food they purchase. On the other hand, food standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose. Product standards and code of practice assist manufacturers to produce foods that meet minimum specifications for quality and safety. Standardization is a process of ensuring uniformity in products and services by use of appropriate standards (Farina, E. et al., 2000).

There are three different kinds of standards: namely process, product or information (Caswell, 2003), but most regulations use a combination of the three to regulate food processing and marketing. Briefly stated, process standards specify how the product should be produced, a product standard requires that the final product should have specific features, and last, information standards are concerned with labelling and other communications that go with the product. The process ensures efficient utilization of resources through reduction of wastes. In any country, food standards are established by regulatory authorities and enforced by governments, food companies and retailers (Donovan, J. et.al. 2001).

Food law

Generally, Food Law may be divided in two parts: (1) a basic food act, and (2) regulations. The act itself sets out broad principles, while regulations contain detailed provisions governing the different categories of products coming under the jurisdiction of each set of regulations (Casella, A. 2001). Sometimes food standards, hygienic provisions, lists of food additives, chemical tolerances, and so on are included in basic food control law. For effective administration and enlightened compliance with the basic food law, detailed provisions are needed. In governments where there is a division between the responsibilities of the legislative and executive branches, the legislative branch enacts the basic law, while detailed regulations are elaborated and promulgated by the executive agency or agencies responsible for administering the law.

Inclusion in the law of detailed specifications about food processing, food standards hygienic practices, packaging and labelling, food additives, and pesticides may make for difficulties(Casella, A. 2001). Prompt revisions of regulations may become necessary because of new scientific knowledge, changes in food processing technology, or emergencies requiring

quick action to protect public health. Such revisions can be made much more expeditiously by executive agencies than by legislative bodies. In some countries food standards are part of the regulations, in other countries they are separate enactments (Black, J. 2002).

Food regulation

Food regulation, which subjects suppliers of goods and services to behavioural control and which penalize those who fail to perform in accordance with the specified standards are the dominant form of social regulation (Nadvi, K. and Waltring, F. 2003). In the history of social regulation, food regulation also occupies a significant place. Since ancient time producers of food products have attempted to alter their wares in an effort to obtain dear prices for cheaper goods by adding water to wine and by skimming cream from milk. This shows that adding worthless substance to food and taking valuable substance from food product was experienced in ancient society. Hence regulation governing what could or could not be added to food products and regulations that require the use of official weights and measures have been introduced to protect consumers from fraudulent and/or unsafe food products (Codex standards, 2009).

The general regulations include detailed regulations for guidance of those who enforce food law, regulations concerning official actions, such as making inspections, collecting samples, making decisions about serious infractions, and the disposition of seized lots of food (Meier KJ. et al.,

1997). To this group of general regulations also belong regulations concerning licenses (permits), if firms and/or specific foods must be registered, the regulations should specify conditions and requirements. Regulations concerning imported foods should cover all aspects of the handling of imported foods. It is impossible to make an overview of all the types of regulations, the above example hopefully will give readers an idea about fields covered by general regulations. Food regulations generally cover the following: general regulations, food standards, food hygiene, food additives, pesticides, veterinary drug residues, food advertising, food packaging and labelling (Henson, S.J. 2007).

All over the world, governments have employed various mechanisms with a view to protecting their citizens from unnecessary risks and to ensure the socio-economic development of their country (World Bank, 2005). Regulation is one of the many systems used to safeguard the public interest. It safeguards public interest both by preventing unfounded risks, to which the society would be exposed, and by enhancing markets for economic development. Every country needs laws to encourage the production of safe and wholesome foods, and to prohibit the sale of foods that are unsafe or fraudulent. The growing population has placed demands on agriculture for increased production (CAC (2008a). However, the increase of agricultural production is connected with the wider use of chemicals. Protection of food during transport and storage may require the use of chemicals too.

Regulation in the area of food quality and safety protection is one aspect of regulatory mechanisms which is emerged as the result of many problems related to food, the problems that cannot be detected by consumers using their sense of sight, smell, taste, or touch when selecting or consuming foods (CAC , 2007). Countries require that imported, exported and domestically produced goods conform to regulatory requirements provided for these purposes. With a view to achieve these objectives government employ legal instruments to compel individuals and organizations so that they can comply with the prescribed behaviour and regulatory requirements. This is to mean that regulation is provided with a view to inform what can or cannot be done with respect to the matters for which it is prescribed (Food Laws and Regulations, 2007).

As it has been stated previously quality standard which subject's suppliers of goods and services to behavioural control and which penalize those who fail to act in accordance with the specified standard is the dominant form of social regulation (CAC, 2006). Here quality regulation as a form of social regulation is provided to control, restrain or correct the producers of good and services so that they can act in a responsible manner. Domestic consumers need food that satisfy their expectation, and that do not pose risk to their health and safety. Importing countries also require imported food to conform to the technical regulations and standards that they apply to domestically produced food products for healthy, safety and consumer protection (CAC, 2008b). Imported agricultural products also have to conform to sanitary and phytosanitary measures which are applied to protect human or animal life from food borne risks and from plant carried diseases. In Ethiopia, food processing industries are playing a significant role in terms of establishment, employment, and market share. The 2007/08 statistics published by the Central Statistics Agency shows that there are about 381 food and food products manufacturing plants in the country that constitute 26.5 % of the total manufacturing establishments in the country.

Street foods are also flourishing in major towns of the country. These street foods, as an informal sector and, which are readily accessible to urban population also need the attention of regulatory bodies so as to get their quality and their safety ensured (CAC, 2008c). In general, to respond to the international requirements of food quality and safety in the global market and to meet the

expectations of domestic consumers as well as to safeguard the public health, there must be strong and up to date regulatory framework and well organized institutions and cooperation among all stakeholders involved in food quality regulation, production, supply and distribution (Codron, Jean. et.al., 2005).

In today's globalized world where food production is on rapid increase and movement of food products through international trade is growing, guarantying the quality and safety of imported, exported and locally produced food products become basic requirements (FAO, 2006). In Ethiopia the food control activities are scattered among various regulatory bodies such as ministry of health, ministry of agriculture and rural development and quality and standard Authority of Ethiopia. However the responsibilities and mandates given to these regulatory bodies are not adequately defined, demarcated to avoid overlap and duplication of functions (FMHACA, 2009). As a result, giving attention to ensure quality and safety does not plays a significant role in the national economic development by enhancing tourism, national and international trade for production, supply and distribution of quality and safe food and preventing avoidable losses.

Classification of food standards

Permissive or non preventive standards

Permissive standards are a type of standards that prohibits the addition of any substances other than those it specifies and is usually employed in connection with food additives, a "permitted list" containing only those additives which may be used to the exclusion of all others. In this type of standards technique, the producer is allowed to use only those food additives specified by the regulatory authority (Henson, S., & Loader, R. 2001). Voluntary standards are agreed up on procedures, systems and methods, which producers voluntarily meet to show that their products achieve a stated level of quality and/or performance. This means that the application of voluntary standard is discretionary as compliance to it by producer, distributor or any other concerned body is only optional. Standards drawn up by trade organizations (both national and international) for the guidance of their members may be the common example of voluntary standards (Reardon, T. et al., 2001). As indicated above, non compliance with the requirements of voluntary standards may be discretionary (allowed) in the market. But it is not without impact on the market, as a market share

may be negatively affected as it is likely that consumers prefer products that meet the standards they need (for example the product that meet the quality or color that meets their preference). Given this possibility, even if compliance with voluntary standards is optional, its application becomes crucial to effectively participate in today's highly competitive market and to win the confidence of customers and consumers (Caswell, J. A. (2003).

Mandatory standards

Mandatory standards provision specifies the substances to be added in food staff. It means that it imposes obligation up on the producers to add certain type or quantity of ingredients in the food stuffs. When standards are adopted or used in regulations, they are termed technical regulation, thus, their use becomes mandatory requirements that local goods and imported products must meet (CAC General Principle, 2002). This is to mean that once they are put in regulation adherence to them becomes mandatory for the producers of the product for which mandatory standards are established. In another words products which do not comply with mandatory standards (regulations) cannot be made available to consumers. As stated above in the fields connected with safety and health of the public, application of standards may be mandatory. Hence one can safely say that most of food quality standards are among those standards the application of which can be categorized under mandatory standards since food is connected with the safety and health of the public (CAC Rome, 1999). Generally, mandatory food standard is necessitated for the following reasons: to prevents the transmission or the cause of disease and to limits the sale of unfair products.

The concerned bodies set food standard to prevent the transmission or the cause of disease and to limit the sale of unfair products, and that the producers of the product are expected to observe it when producing the products offered for sale to the public. A food may cause or transmit disease through the constituents of the food itself, including food additives or through the impurities they contain (CAC Washington D.C, 2002). Therefore, food standard is established, on the one hand, to "permit no harmful substances", on the other hand, to prohibit the use of specified substances. In setting food standards, the standard setting bodies define chemical compositions, specify essential ingredients, state maximum or minimum concentration of certain ingredients, regulate food additive use, and set tolerance limits for such contaminants, like pesticide residue. What can be inferred from this is that mandatory standard prohibits the addition of certain substances in food and /or provides for the list of substances to be contained in a food product (McKone T (1996).

Prohibitory standards

Prohibitory standards on the other hand provides for list of substances not to be included in the food stuff. This is to mean that , for instance, if 'x' is prohibited from contained in certain food all that is not 'x' is permitted (CODEX STAN 1-1985, Rev. (1991). Traditionally food laws and regulation 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.

To achieve maximum consumer protection and to satisfy importing countries food quality and safety requirements, it is essential that quality and safety be built into food products from production through to consumption (Loken Joan K, 1995). This calls for comprehensive and integrated farm-to table approach in which the producer, processor, and transporter and all play vital role in ensuring food quality and food safety. This is because many food-safety hazards can enter the production chain at multiple points and can multiply or cross-contaminate other products one present. Then a farm-to-table approach allows identification of the effective points for intervention (Laurian J,et al., 1998).

Role of food regulation on food safety

Food safety implies absence or acceptable and safe level of contaminants, adulterants, or any other substances that may make food injurious to persons (WHO, 2004). This means that food safety is related with the absence or acceptable and safe level of harmful substances present in the food and concerned with whether the food has been prepared, handled, and stored under controlled and sanitary conditions in conformance with practice prescribed by government regulations. Many national governments have established the legal requirements for food quality and food safety with the objective of protecting consumers against unsafe, impure and fraudulently presented food by prohibiting the sale of food not of the nature, substance or quality demanded by the purchaser. It is to mean that regulating quality of food is necessitated with a view to protecting consumers from illness and injury as well as deceptive practices by obliging producers and distributors to provide true and reliable information on which consumers can rely to make the right choice of buying safe and of good quality food (Dawit D. 2010).

There are three recognized categories of food safety hazards: biological hazards, chemical hazards, and physical hazards. The origin of these hazards in foods can be from naturally occurring substances or agents in foods, from deterioration or decomposition of foods, or from

contamination of the foods with the hazard at various stages of their production, harvesting, storing, processing, distribution, preparation, and utilization (Enhancement of Food Safety Standards, 2003). For many hazards, government regulatory agencies have established an acceptable level of the hazard in a food; the Codex Alimentarius has also established acceptable levels of certain hazards as part of its food standards programme. For some hazards, such as pathogenic bacteria (e.g., *Salmonella* spp.), there is zero tolerance, this means that the presence or the detection of the hazard in the food is unacceptable. The strategies used to address hazards in foods include the prevention or elimination of hazards, or the reduction of hazards to acceptable levels. These strategies are employed in the HACCP system (Ensuring food quality and safety FAO, 2001).

Role of regulations on public health protection

Basically, factors which contribute to potential hazards in food include improper agricultural practice, poor hygiene at all stage of the food chain, lack of preventive control in food processing and preparation operations (stages), misuse of chemicals, contaminated raw materials, ingredients and water, as well as inadequate or improper storage (Food safety control system for Africa, 1999). This gives rise to food-borne health hazardous, and this would require intervention by regulatory mechanisms. Regulation in this case should aim at providing mechanisms in which the quality and safety of food and food products can be protected at appropriate stages. Hence maintaining safety and quality of food measure are required not only in some end point of the food chain, like manufacturing, but also in some starting point, like farm production. This is because agro-chemical residue in food is unmanageable at the point of consumption but it can be managed at the point of production by using good agricultural practice (U.S. EPA, 2007). The primary objective for which food quality and safety protection regulatory mechanisms is adopted, therefore, is safeguarding public health by ensuring safe and of good quality foods, which do not injure human health. In other words food quality regulations have the objective of minimizing unreasonable risks to which the public would be exposed, by providing safety protection mechanisms, by which food-borne health hazards could be controlled at each state of the food chain (Pillay V, Muliyl V. 2005).

Consumers cannot assure the safety of many food products. Furthermore, even producers or retailers may be unable to assure or to certify safety because food-borne diseases (photogenes) are living organization that can enter the food at any point and may grow overtime. The lack of information about safety and the

resulting consequences for public health are, therefore, the fundamental justification for public intervention to improve food safety (Yalemtsehay M. 2010).

Accordingly, food quality and safety regulatory systems are adopted to provide assurance so that consumers are provided with food suitable for human consumption. The regulatory systems play significant role in that they direct food industries to produce food which is safe and suitable for consumption by controlling the quality and safety of food from its primary source up to its final consumption (New approaches to food safety economics, 2000).

The public health proclamation of Ethiopia, No. 26/1947 provides, in its preamble, that the proclamation is enacted for the protection of the health of the people and the sanitation of the cities in Ethiopia. Legal notice No. 25/1943, which is issued under proclamation No. 26/1942, also holds the objective of protecting public health by empowering a medical officer of health to require the seizure of any food stuffs when, in the officer's opinion, such food is found to be dangerous to public health if consumed. Shortly stated, the regulation prohibits the consumption of foods that have the probability of affecting the health of the public (EASE, 1987).

Public health amendment proclamation No. 111/1950 also states that the medical officer of health is empowered to take over, prevent the sale, or drinking of any food or drink offered for sale or otherwise, when it appears dangerous to public health, and if necessary cause them to be thrown out, burned or destroyed otherwise. The legal notice No. 147/1950, which is issued with regard to food, provides that vegetables irrigated or irrigation of vegetables with water containing human excrement shall be considered as dangerous to public health and unsafe for consumption. Meat for sale, not bearing the stamp or approval of the public municipal or of the slaughter house shall be considered unsafe for human consumption, milk from animals having Tuberculosis, infectious abortion or suppurating wounds shall be considered unsafe for human consumption. Public health proclamation No. 200/2000 has also an objective of promoting the health of the society and creating health environment for the future generation thereby enabling it assumes its responsibility. In general we can say that legislations provided with regard to protecting the safety and quality of food and foodstuffs has come into force with the objective of safeguarding the health of the public from health risks arising from consumption of foods and food products (Public Health Proclamation No. 200/2000).

Role of regulations for Consumer Protection

Consumer protection is a matter of regulation between market and government. Through setting standards of production and distribution of goods and services, regulation plays a key role in consumer protection. Safety regulations, quality regulations, labelling and packaging regulations are the most important regulations that pertain to the protection of consumer rights. In safety regulations, producers are required to live up to the level that is required before their goods are delivered to the market (Stephenson, S. 1997).

In consumer market, the resolution of quality uncertainly appears to be a central issue. This is partly because, for many products, consumers do not automatically know the level of quality, nor can they be certain as to whether the information regarding a given product is true or not. In addition, quality and safety is an example of information asymmetry between sellers and buyers as, obviously, sellers know the quality and safety attributes of their product much better than buyers, and it is hardly possible for buyers to fully assess these attributes during the transaction (Stephenson, S. 1997). Food regulation, therefore, provides for a transparent system so that asymmetric information, as to the quality and safety of food, between food producers and consumers will be avoided or, at least, minimized. Thus regulation that governs as to what can or cannot be added to products, how products are labelled, and whether certain products are safely sold to consumers, can be justified in the public interest if consumers do not possess the information to accurately recognize these aspects of product quality on their own (Roberts, D. (1998).

Under Ethiopian law, the consumer protection objectives of food quality and safety regulation can be observed from the beginning of the enactment of legislations dealing with food quality and safety issues. Meat inspection proclamation No. 274/1970, clearly provides that the main reason for the issuance of the proclamation was to ensure the production and market of meat and meat products, which are sound, wholesome and otherwise of a quality totally fit for human consumption, and thus to protect foreign and domestic consumers (Ethiopian Conformity Assessment Organization, 2011).

In this regard, the Ethiopian government has enacted a proclamation that regulates the standards of production, import and distribution of food and medicine as well as the standard of health institution (Ethiopian Conformity Assessment Enterprise, 2010). As the preamble to this

proclamation shows, this regulatory law is enacted with the view to protect the public from health risks emerging out of unsafe and poor quality food and medicines. The proclamation also vows to avert health problems due to substandard health institutions and, incompetent health professionals. A subsidiary law for the implementation of this regulatory law further reinforces the objective of the law as protecting the health of consumers by ensuring food safety and quality as well as the safety, efficacy, quality and proper use of

medicines, among others. Regulation not only requires compliance to the standards of quality, safety, labelling and packaging of goods and services, but it also imposes criminal liability for the failure to comply with these standards (Roberts, D. 1998). And through imposition of such penalties, regulation ensures compliance to standards.

Moreover, regulation helps consumer to be adequately informed through disclosure rules so that they can understand the price and quality of goods that are offered to them. This would make it easy for them to translate their preferences in to the market actions. The role of regulation, in this regard, is of particular importance in countries where consumers are not as such aware of their rights. In addition to this, regulation works for the interest of consumers through the protection of competition (Consumer Protection and Competition Policy, 1997). As already discussed, in the absence of competition, the free market may fail to efficiently allocate resources in accordance with consumer preferences. When market fails, anticompetitive practices such as abuse of dominance, restriction of production and charging exorbitant prices will be the order. In such situations, regulation may be employed either generally or on an industry by industry basis to correct market failures resulting from the exercise of monopoly powers (Geraint Howells and Stephen Weatherill,

2006). Adulterations of food stuffs and medicines as well as selling of expired food items and medicines have also been major threats for consumers.

Due to absence of integrated consumer protection law, consumers in Ethiopia have for long been victims of irresponsible marketing of goods and services. Adulterations of products have been made by adding deleterious and poor quality ingredients. Adulterations of food stuffs and medicines as well as selling of expired food items and medicines have also been major threats for consumers (Ethiopian Conformity Assessment Enterprise, 2011). Adulteration is also made on other products through complete or partial substitution of their contents by less valuable elements which resemble as if they were of quality.

The adulteration, sometimes, goes to the extent of adding poisonous substances that are harmful to health (South African Consumer Protection Act, 2008). There have still been problems on quality and safety of imported products, as well as on imported and locally made food items that are related to the daily need of consumers. Price regulation, in case of inflation, is also important for the protection of consumers' interests. Inflation affects the consumers as it entails the decline in the purchasing power of currency. When there is inflation on consumer goods, regulators may impose a price cap as a temporary means to protect consumers' interests (South African Consumer Protection Act, 2008). However, such measure is, in most cases, taken as a temporal measure for it has adverse effect on competition and also not a reliable means of protecting consumer rights in the long run.

Role street food regulation

The issues of street food are also other areas of concern in food quality regulation. Street foods are defined as ready to eat foods prepared/or sold by vendors in street and other similar public place such as around place of work, school, rail way stations and bus terminals for immediate consumption without further processing or preparation (Mark Mahabir, 2009). Street foods are easily accessible and relatively affordable food that can satisfy a vital need of the urban population. Although the accessibility and affordability of street foods are their merits, they are perceived to be a major public health risk in view of health problems associated with food hygiene and sanitation that are closely related to improper personal hygiene, unsanitary practices and habits. Irrespective of these possible risks, in many developing countries, street foods are not subjected to formal inspection by regulatory authorities mainly because most vendors operate without license and at undesignated places (Assuring good Quality food ingredients and foods, 2010).

This indicates that the risks that might be created on consumers, because of the use of street foods, are not appreciated by regulatory bodies and that there has been no legislation that pertains to the regulation of these foods, and this creates difficulty on ensuring that these foods are free from potential contaminations that expose consumers to unnecessary risks (*Codex standards,*

2009). As regards, enforcement of street food quality regulation, there can be an inspection as well as sampling and testing by government regulatory agencies to ensure the compliance by food producers and distributors to specified standards and government regulatory requirement. (Codron, Jean. et.al. 2005).

The enforcement activities fall into two categories. First, they include inspection and audits of establishments that process, handle, and store food to ensure that the required sanitary and controlled conditions are followed. Second, they include inspection and analysis of food for harmful substances to ensure that there is conformance to established limits and tolerance. In conducting inspection activities sample and analysis are required to determine whether the food product conform to standards and prescribed regulation or not.

Export and Import Food regulation

With the advancement and development of a food consciousness amongst consumers, various countries have adopted sophisticated food law and have established food control agencies. Food importing countries, however,

may no longer accept foods and food products imported to them as they are sceptical of whether such foods are with an accepted quality. For this reason, importing countries often demand food exporting countries that food and food products they export shall meet the requirements of their food law, and with a view to assuring as to whether the imported food meets the already established requirements, they conduct inspection by their control agencies (Animal diseases Prevention and control proclamation, 2002).

Understood otherwise, countries do not allow food and food products to enter their territory unless it satisfies their food quality and safety regulatory requirements. Moreover, many importing countries require exporting countries to certify that the food products comply with their national legislation. As a result, most of the efforts and resources of exporting countries are now directed towards ensuring that food for export meet the mandatory requirements of importing countries and providing the necessary associated certification(*Codex standards, 2009*). This shows that access of countries to export markets depends and would continue to depend on their capacity to meet the regulatory requirements of importing countries, failure of which may be resulted in inviting either the detention or, at worst, rejection of food product at point of entry. Assuring the quality and safety of exported and imported food is not as such an easy task. Food export depends not only on the national food quality and safety requirements but also on the regulatory requirements prescribed by food importing country. Therefore in addition to complying with compulsory requirements of food standards established in Ethiopia. Ethiopian food exporters need to have the knowledge and understanding of the food quality and safety requirements of the country to which they want to export (Commercial Registration and Licensing Council, 1997). Importers are also required to have a good understanding of food quality requirement established in Ethiopia.

Food regulation and Conformity Assessment

Conformity assessment is another techniques employed to determine the compliance with the technical regulation (standards). Hence this section tries to explain conformity assessment and its relevance in the area of food quality and safety regulation. Conformity assessment is the process of testing compliance with standards or technical regulations. It is technical activities such as testing, inspection, certification accreditation, which confirms that products or process fulfil the requirements laid down in regulations and/or standards (UNCTAD, 2010). The above statements demonstrate that conformity assessment activities are conducted to assure that relevant requirements stipulated in standards and technical regulations are fulfilled. The purpose of conformity assessment is to provide confidence for users that requirements applicable to products process and systems have been met and then contribute to the market acceptance of those products, process. From this we can observe that conformity assessment is a technique applied to ensure that products, process or production methods are in accordance with the relevant standards and regulations and then fit for use (Geraint Howells and Stephen Weatherill, 2006).

It is also stated that conformity assessment procedures provide a means of ensuring that the products, process or systems produced or operated have the required characteristics, and that these characteristics are consistent from product to product or system to system. Conformity assessment provides assurance that the products we use won't harm us, that their components will work and that manufacturers are effectively managing the impacts of their activities on health, safety and the environment (Consumer Protection and Competition Polic, 2004). For the purpose of this review it can be said that conformity assessment is a tool that helps to assure whether foods and food products or system of production meet the requirements of the food standards and regulations and fit for use by customers and consumers.

Conformity assessment is fundamentally important and very widely used techniques at food quality and safety assurance system (Stephenson, S. 1997). The confidence of consumers in the quality and safety of their food supply depends on their perception as to the effectiveness of the food quality and safety control measures. It is, therefore, through effective conformity assessment procedures that the quality and safety of food produced is assured (Roberts, D. 1998). Conformity assessment contains the following components:

Certification: certification is the procedures by which a third party gives written assurance that a product, process, personnel, organization or systems conforms to requirements. With regard to food quality and safety assurance certification, it is provided to assure that food or food control system conform to requirements provided in food standards and food regulations. Here certification is given to show that the products, process or methods of production for which the certificate given is consistent and comply with the regulatory requirement and fit for use or consumption by customers and consumers. Certification is an asset and advantage, both for producer and for the purchaser, consumer or distributor since a person or producer who is given certificate is also provided with quality mark, it gives them an incontestable added value to the product bearing its mark. For the manufacturer, it open up market and simplifies relations and for the user, it provides assurance that the product purchased meet defined characteristics or that an organization's process meets specified requirements. In the case of food and food products certification mark represent an assurance of safety and quality of the food. Certification of food products may be based on a range of inspection activities which may include continuous on

line inspection, auditing of quality assurance system, and examination of finished products.

In Ethiopia product certification is carried out by QSAE. It is the certificate of conformity to assure that the product process and methods applied in accordance with the standards and regulations in place. Once certification is given with regard to certain Product, the owner of that certificate uses quality mark of the QSAE. When he sells the product he has to use the quality mark to assure the purchaser that his product conforms to relevant compulsory Ethiopian standards provided for that particular food product.

Inspection- Inspection is the examination of products, process, materials, and work procedures to assure that they comply with the requirements. In the food sector inspection is the examination of food or system for control of raw materials, processing, and distribution including in process and finished product testing in order to verify that they conform to requirements. The overall aim of inspection is to reduce risk to the buyer, owner, user or consumer of the item being inspected. Here inspection in the areas of foodstuff is carried out with a view to verifying that the food produced, the materials used, and the process employed is as set out in the regulations (standards).

Testing- Testing is perhaps the most common form of conformity assessment which can include activities like measurement and calibration. It is the main techniques used in product certification.

Accreditation- Accreditation, which is one of the components of conformity assessment, is a procedure by which an authoritative body gives formal recognition that a body or a person is competent to carry out specific tasks. It can be said that accreditation is attestation given to a person or an organization to assure that they are capable to undertake activities for which accreditation is given. Accreditation is a conformity assessment activity and is the internationally accepted system that recognizes the competence of testing and calibration laboratories, inspection bodies, product certification bodies and quality system certification bodies. Accreditation establishes assurance of the quality of test data and provides discipline and a sense of professionalism that is internationally accepted. This minimizes duplication of re-testing and re- certification reduces cost and eliminate non- tariff barriers to trade and market access delays. Here accreditation is used to facilitate transactions by eliminating the redundancy of certification and testing by establishing confidence between exporters and importers of foods and food products.

Generally it can be said that conformity assessment is important to protect consumers from health and safety risks by bringing together the discipline needed to assure compliance. Although Conformity assessment has many advantages for both producers and purchasers, in Ethiopia it is not well developed. This means that a certification granted by Ethiopian certification body has no acceptance abroad. Ethiopian exporters demand certification only for the purpose of obtaining license for export of their food products. Ethiopian exporters are exposed to excessive expenses to get certification from abroad.

Food regulation in Ethiopia

Food regulation in Ethiopia is a shared responsibility of Ministry of Health, Ministry of Agriculture and Rural Development, Ministry of Trade and Industry, and Quality and Standards Authority of Ethiopia. However there is no strong coordination and cooperation among these government regulatory agencies. There is also no comprehensive food law that clearly defines and streamlines the activities of each regulatory body (Mulat Abegaz, 2004). Moreover the existing laws and regulations are outdated and could not respond to contemporary food quality and safety issues. Hence for the purpose of identifying the problems and challenges associated with food quality regulation in Ethiopia, international food standards guidelines and selected countries experience serve as useful instruments.

In the last decade, large efforts have been made on the national level towards development and implementation of food regulation management systems to assure food regulation in the agrifood chain. This is demonstrated by multiple Codex Alimentarius guidelines and National Codex

Committee (NCC) (Yalemtsehay, 2010). National Codex Committee (NCC) sets Ethiopian standards through active participation of all stockholders that are meant to take part to ensure its effective implementation. In most cases, the involvement in the preparation of the Ethiopian standards is effected in two spheres/layers: by participating in attending the meeting of technical committee, and by commenting on the draft standards that are made to be available for public. Ethiopian standards are prepared by technical committees made up of experts from government, industry, use groups and other sectors of the economy (Mulat Abegaz, 2004). From this we can observe that those who are members of the technical committee can give their views and expertise opinion during their meeting. However those who are not participating in a technical committee but may be affected by the outcome of the standard can give their views and opinion through arrangements made for this purpose. This can be either through the QSAE website or through documents distributed to them.

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

However, the food control system in Ethiopia is very little developed and is not able to support the production, supply and distribution of safe food to the local community and to the export market. It is also unable to protect largely the public from possible sources of foodborne diseases that could occur even to a failure to apply the well-known principles of food safety that have been established over many years, for instance, basic hygiene practices. This has been resulted in the proliferation and in nowadays food borne diseases might most serious health problems in the country (NCC,

2010). Preliminary studies indicate that communicable diseases contribute 60-80% to the total possible causes of illness, among which foodborne diseases has been estimated to take the lion's share. Limited access to improved water source and improved sanitation facilities has aggravated the prevalence of communicable diseases. This is due to the existing law itself is inadequate and scattered in different codes and legislations and do not cover all segments of foods and food products supplied to the people.

When we see the existing laws, most of them were outdated. They do not respond to new modes of living in which the Ethiopian people is, new kinds of products evolved from time to time, new methods of manufacturing and distribution chain, and new scientific discoveries, all demanding frequently updating of the food laws to coup up with the modern methods of food quality and safety control system. Hence, in order to have comprehensive national food law and sufficient number of up to date food quality and safety regulations, it need assessing where that laws are found and bring them together in one legislation.

On the basis of the comprehensive food laws it also needs enacting sufficient regulations that are meant for effectively and efficiently implement the laws (WHO Regional Office for Africa, 2004). Implementation of Ethiopian standards is normally voluntary but for standards that have direct influence on health, safety, fair trade and related considerations compliance is often made mandatory. Accordingly from among 7414 established Ethiopian standards 389 of them are made mandatory (technical regulations) through Ethiopian standards regulations No.12/1990 from which about 174 of them are concerned with foods and food products. This means that from food standards established only about 20.5% of them made technical regulations. The remaining 79.5 are expected to be implemented voluntary.

As information obtained from QSAE reveals there are still food and food products such as meat, baby foods, bottled mineral water, whose compliance with the standards are not still made compulsory. This indicates that there is a need to revise the existing compulsory Ethiopian standards to prepare compulsory standards for those foods the absence of which may has an impact on health and safety of the public (Erkyihun T. 2010).. This indicates that in the areas of food standards much is expected to be done from the standard setting bodies on the one hand to revise the existing mandatory food standards to keep pace with current advances in foods production and distribution system, on the other hand to set compulsory standards (technical regulations) for foodstuffs which should have been made mandatory but still implemented through voluntary standards.

Thought Ethiopian Food Medicine and Health Care Administration and Control Authority established as an autonomous government office having its own legal personality cannot bring improved food regulatory system in the country (FMHACA, 2010). The Ethiopian food inspection and control system is mainly divided between the Health sector responsible for the safety of food products to be consumed and strongly oriented to consumers and to food processing factories, and the Agriculture sector responsible for the animal and plant health. It might seem paradoxical to discuss on the subject of food control 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 regulation assurance systems are problems that have become obstacles to the Ethiopian economic development and public health regulation (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).

Services for regulating relevant food hazards

Inspection services

The federal government conducts inspection services on export animal, animal products and plants and plant products, whereas the regional Agricultural Bureaus and Zonal and Woreda Agricultural Offices are responsible to carryout inspection activities that ensure the quality and safety of locally produced animal, animal products and plants. Likewise, to ensure the quality and safety of Agricultural products and to protect animal from diseases, there are agricultural extension workers with the charge of assisting and advising farmers at the grass-root level (Solomon Hailemariam,1975). They also conduct inspection activities so as to assure the quality and safety of domestically produced agricultural product. At this juncture, it is difficult to assess all the regulatory mechanisms employed to ensure the quality and safety of plants and animals and animal products. This warrants the need to have an insight into regulations that deal with the quality and safety of meat and meat products to look into what the practice looks like.

To prevent the occurrence and the spread of disease at any time and place, the Ministry of Agriculture and Rural Development and the respective regional Bureaus are empowered to prohibit and control the movement of animal, animal products and by products from areas (regions), infected or suspected of being infected by animal disease, to other regions in the country (Codron, Jean. et.al., 2005). Stated otherwise, the health officer limits or prohibits the movement of animals infected or suspected of being infected by animal disease with a view to securing their healthy and thereby ensure the quality and safety of food (meat and meat products) derived from animals.

The quality and safety of domestically produced foods and food product is also regulated by Trade and Industry sector. The Ministry of Trade and Industry and the respective regional Bureaus have departments that carryout the registration and licensing of commercial activities. These trade and industry sectors have a role to pay in warranting the quality and safety of food and food products made available for human consumption (Meat inspection proclamation, 1970).

Quality and standards Authority of Ethiopia is also the principal government agency entrusted with the Authority to develop Ethiopian standards. Accordingly it is involved in the activities of regulating the quality and safety of domestically produced food products by promoting and assisting the establishment of appropriate quality management practices in the food processing industry through the application of food related Ethiopian standards. The authority may establish either voluntary or compulsory standards(*Criminal Code Proclamation, 2006*).

A person, who wants to engage in producing and/or trading in foods, the production or the trading of which requires compulsory Ethiopian standards, should hold quality mark and certificate of conformity to assure that the product conforms to the relevant compulsory Ethiopian standards. Accordingly, where a person is found producing or trading in food and food products, without holding quality mark, the authority may order the closure of the factory or business undertaking or for the cessation of operations and the ban of movements of the products. Hence, it can be said, QSAE plays a pivotal role in promoting and assisting the use of voluntary food standards and in assuring the proper implementation of compulsory food standard so that consumers can be provided with safe and good quality of domestically produced food and food products (*National Codex standards, 2009*).

Laboratory services

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). It is true that Ethiopia Health and Nutrition Research Institute will support analytical services for testing of public health samples. However, EHNRI, which is mainly a research institutes and heavily engaged in research activities, could not support and satisfy the current analytical service demand and requirement of the country to support the food sector, inspection activities, and export and import activities of products.

Role of FMHACA in ensuring food regulation

Ethiopian Food, Medicines and Health Care Administration and Control Authority (**FMHACA**) 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 regulation and quality of food, regulation, 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). The Authority's Core Process and sub-process Health and health related services and products quality regulation core process has four sub-processes. These are:

- Regulatory standard setting
- Inspection and licensing
- Product Quality Assessment and Regulation
- Regulatory information delivery system

The food, Medicine & Health care Administration & Control Authority (FMHACA) is undertaking various initiatives to protect the public health by ensuring the quality and safety of food products. FMHACA is mandated to regulate the manufacturing, supply and distribution of all food products that are imported and manufactured locally so that the quality & safety of food products is maintained through the implementation of GMP. Current Good Manufacturing Practices (GMP) covers all aspects including the purchase of materials, production, quality control, storage and delivery of finished food products and many other related factors to food

manufacturing and distribution activities (WHO, 2008).

Directives prepared by FMHACA

(Directives for good manufacturing practice (GMP), Directives for food industry quality control and management, Directives for quality risk management, Directives for premises, Directives for general manufacturing requirements, Directives for storage area, Directives for quality control laboratory, Directives for sanitation and hygiene, Directives for packaging materials, Directives for reagents and media used in manufacturing, Directives for food transportation and distribution, Directives for food recall and disposal of unfit foods)

Role of Quality and standards authority of Ethiopia (QSAE)

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 regulation through certification, inspection and testing (Erkyihun, 2010). It has certification, testing and metrology systems, and well-established technical committees for establishment of national standards, which should be strengthened. The authority assists and could assist the food control system by establishing food safety standards, providing calibration and analytical services, participating in inter-laboratory comparisons and assisting in the implementation of GMP, GHP and HACCP.

The objectives of the Authority shall be to protect the health of consumers by ensuring:

- i. food safety and quality,
- ii. the safety, efficacy, quality and proper use of medicines,
- iii. competence and ethics of health professionals, medical practitioners and pharmacy professionals:
- iv. the standard of health institutions, and
- v. the hygiene and environmental health protection suitability for individual and community health.

Role of research institutions

In Ethiopia research institutions have direct responsibility with regard to food regulation. Major duties and responsibilities are as follows:

- 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 regulation, 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,
- Assess food regulations and fortification of foods with micronutrients and should fully take into account the recommended international standards of the Codex Alimentarius Commission,
- Creating transparent communication in food analytical services and accreditation of laboratories regarding food regulation
- Conduct nutrient analysis and develop food composition to make use of it to control the risk inappropriate food consumption,
- Develop surveillance and monitoring programs for food-borne diseases and contaminants,
- 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).

Roles of Universities to ensure food regulation

- Assist in increasing the awareness, knowledge, and application of new and emerging technologies.
- Organize and support the development of centres, facilities, human resources, journals, and workshops that promote, coordinate, and strengthen the application of food regulation and regulation and regulation.
- Encourage Research and Development on the manufacture of production equipment to help expand small-scale and rural industries.
- Encourage the use of methods to enable the local production of industrial raw materials and other inputs.
- Support research to modernize traditional and handicraft technologies and make them more productive (Geremew et al., 2010, MoE, 2007).

The role of consumer associations

Consumers' Association has a vital role in educating and enabling the consumers to be more alert to food

regulation and regulation and regulation. These associations contribute to the process of formulating and implementing of national food regulation and regulation and regulation 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 regulation and regulation and regulation 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 regulation and regulation and regulation 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 regulation and regulation and regulation in Ethiopia (Endale, 2010).

Benefits of ensuring food regulation

- Improve the firm's image in the market
- Improve product quality and safety Achieve customer confidence
- Strengthen the firm's future competitive advantage
- Improve internal processes and procedures and their monitoring
- Anticipate future market trends
- Complement HACCP
- Improve efficiency
- Comply food safety legislation
- Anticipate customer demand
- Improve performance relative to competitors
- Use as a promotional or sales tool
- Enable access to certain distribution chains
- Improve productivity and consumer health

Major drawbacks of food regulation in Ethiopia

- i. lack of enforcement mechanism for existing regulation due to inadequately defined, demarcated and streamlined responsibilities and mandate given to regulatory bodies and inspection authorities,
- ii. under equipped and understaffed public health laboratories to respond to current international food regulation demands, Lack of a single central and accredited food safety analytical and microbiological laboratories to Support regulatory activities,
- iii. weak coordination among lead government agencies, the private sector and the consumer at large, Low level of integration, collaboration and cooperation among inspection authorities/regulatory bodies, support institutes, regional offices, etc,
- iv. low management capacity and knowledge of regulatory bodies to cope with fast growing science of food regulation
- v. Low level awareness of food regulation in most processing plants on HACCP, GHP, GMP, GAP, GLP and Lack of social awareness on food safety issues. The basic food hygiene education is not well addressed by the education system starting at an early age to higher teaching institutes.
- vi. Food regulation issue being taken as secondary to economic benefit
- vii. Insufficient fund allocated by the government for food inspection and control activities. The participation of donor agencies and countries, to food safety issue is not satisfactory
- viii. Low level of hygiene awareness of the public to the basic food hygiene practices
- ix. Insufficient number of inspection and satellite laboratories at regional and zonal level, inspection tools and mini laboratories and transportation both in the Health and Agriculture Sectors,
- x. Lack of technical competence in terms of trained manpower, facilities, and infrastructure, at the federal level and regional level.

Future challenges of food regulation

Food regulation 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 regulation 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 and agricultural technology

Advances in processing, preservation, packaging, shipping, 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, immune suppressed (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 radio nuclear 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).

CONCLUSION

Ensuring the quality and safety of domestically produced, exported and imported food and food products constitutes one of the areas of food quality and safety protection. This is with an assumption that maintaining the quality of these foods is essential to protect public health, to satisfy the expectation of consumers, and to enhance foreign earnings and to maintain the confidence of food trading partners. Hence, governments assure the quality and safety of domestically produced, imported and exported food and food products. To this end, they employ various controlling mechanisms with a view to protecting public health and consumers as well as to ensure fair practice in food trade. As far as the regulation of food export is concerned, it is axiomatic that importing countries do not allow food and food products to enter their territory unless it satisfies their food quality and safety regulatory requirements. However, the current practice in Ethiopia informs that the food quality control system is unable to live up to the requirements laid down by importing countries, especially by the developed ones. Likewise, many importing countries require exporting countries to have certificate which assures that the food products they export are free from health hazards and be with good quality to be consumed by their citizens. But in Ethiopia, there is no well established and internationally acceptable food quality and safety certification system that guarantees the food exported to the importing country is in compliance with their quality and safety regulatory requirements. As a result, food exporters are said to have been exposed to excessive expenses for re-inspection and recertification in the importing countries. Although most food standards can be categorized in mandatory standards because of the aforementioned reason, in Ethiopia, there are still food and food products for which compulsory standards are not yet established. Stated otherwise, there are still foods and food products which are not yet made compulsory although it has an

impact on health and safety of the public.

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REFERENCES

- Farina, E. M. M. Q., & Reardon, T. (2000, December). Agrifood grades and standards in the extended Mercosur: their role in the changing agrifood system, *American Journal of Agricultural Economic*, 82(5), 1170-1176. (Farina, E. et al., 2000).
- Donovan, J. A., Caswell, J. A., & Salay, E. (2001, Spring/Summer). The effect of stricter foreign regulations on food safety levels in developing countries: a study of Brazil. *Review of Agricultural Economics*, 23(1), 163-175. (Donovan, J. et al., 2001).
- Caswell, J. A. (2003). Food safety. In L. J. Unnevehr (Ed.), *Food Safety in Food Security and Food*.
- Reardon, T., & Farina, E. M. M. Q. (2001, December). The rise of private food quality and safety standards: illustrations from Brazil. *International Food and Agribusiness Management Review*, 4(4), 413-421. (Reardon, T. et al., 2001).
- Food, Medicine and Health Care Administration and Control Proclamation No.661/2009, Federal Negarit Gazeta, 16th year, No.9 (FMHACA, 2009).
- Casella, A. (2001). Product Standards and International Trade. Harmonization Through Private Collations? *Kyklos*, 54(2/3): 243-264. Casella, A. (2001).
- Black, J. (2002). *Critical Reflections on Regulation*. Centre for Analysis of Risk and Regulation. London School of Economics and Political Science, London.
- Nadvi, K. and Waltring, F. (2003). Making Sense of Global Standards. In: Schmitz, H. (ed.) *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*. Edward Elgar, Cheltenham. (Nadvi, K. and Waltring, F. (2003).
- Ethiopian Authority for Standardization Establishment Proclamation No. 328/1987, *Negarit Gazeta*, 46th year No. 20 (EASE, 1987).
- Public Health Proclamation No. 91/1950, *Negarit Gazeta*, 10th year No. 3 (Public Health Proclamation No. 91/1950).
- Mark Mahabir, International Food Standards, Retrieved from <http://www2.parl.gc.ca/LOP/ResearchPublication/>, (Mark Mahabir, 2009).
- World Bank (2005) *Food Safety and Agricultural Health Standards: Challenges and Opportunities for Developing Country Exports*, Report 31207, Washington D.C.: The World Bank, Poverty Reduction and Economic Management Trade Unit (World Bank (2005).
- Codex Alimentarius Commission General standards for Labeling of prepackaged Foods, retrieved from <http://www.freshquality.org/files/labeling/pdf> (CAC General standards).
- Henson, S.J. (2002) *The Current Status and Future Directions of Codex Alimentarius*, Geneva: World Health Organisation (Henson, S.J. (2002).
- CAC (2006) *Maximum Residue Limits for Veterinary Drugs in Foods: Updated as at the 29th Session of the Codex Alimentarius Commission*, Rome: Codex Alimentarius Commission (CAC 2006).
- CAC (2007) *Codex Alimentarius Commission - 17th Procedural Manual*, Rome: Codex Alimentarius Commission (CAC (2007).
- CAC (2008a) *Report of the 31st Session of the Codex Alimentarius Commission*, ALINORM 08/31/REP, Rome: Codex Alimentarius Commission (CAC (2008a).
- CAC (2008b) *Report of the 60th Session of the Executive Committee of the Codex Alimentarius Commission*, ALINORM 08/31/3, Rome: Codex Alimentarius Commission. (CAC 2008b).
- CAC (2008c) *Report of the 61st Session of the Executive Committee of the Codex Alimentarius Commission*, ALINORM 08/31/3A, Rome: Codex Alimentarius Commission. (CAC 2008c).
- Solomon Hailemariam (Dr), *A brief analysis of the activities of the Meat Inspection and Quarantine Division of Department of Veterinary science*, Ministry of Agriculture, Addis Ababa, 1975 (Solomon Hailemariam, 1975).
- Codron, Jean-Marie; Eric Giraud-Héraud; Louis-Georges Soler (2005) Minimum quality standards, premium private labels, and European meat and fresh produce retailing. *Food Policy* 30 (2005) 270–283. (Codron, Jean. Et.al., 2005).
- Commercial Registration and Licensing Council of Ministers Regulation No. 13 of 1997, *Federal Negaret Gazeta*, 3rd year No. 28 (Commercial Registration and Licensing Council, 1997).

- Meat inspection proclamation No.274/1970, *Negarit Gazeta*,29th year, No.15 (Meat inspection proclamation, 1970).
- The Criminal Code of The Federal Democratic Republic of Ethiopia, Proclamation No. 414/2004 (Criminal Code Proclamation, 2006).*
- Food Laws and Regulations, retrieved from <http://jifsan.umb.edu/> .
- Animal diseases Prevention and control proclamation No. 267/2002 Federal *Negarit Gazeta* 8th year No 14.
- Meier KJ, Garman ET, Keiser LR (1997). Regulation and Consumer Protection. Houston: Dame Publications. (Meier KJ. Et al., 1997).
- Black, J. (2002) *Critical Reflections on Regulation*, London: Centre for Analysis of Risk and Regulation, London School of Economics and Political Science Abbott
- FAO (2005). Food Safety Risk Analysis. Part I - An Overview and Framework Manual. Provisional Edition FAO Rome, June 2005.
- Mulat Abegaz, 2004. UNIDO Food Safety and Technology Projects Coordinator and Consultant, Gap Analysis Report, Recommendations & Proposals on Food Control System in Ethiopia, UNIDO's Regional Programme on Harmonization of Food Control System in East-Africa, December 2003, Addis Ababa, paper presented in Uganda, Kampala, for regional workshop on "Regional Harmonization of Food safety and Quality System in East Africa" 25-27 Feb. 2004.
- McKone T (1996). Overview of the risk analysis approach and terminology: the merging of science, judgement and values. *Food Control* 7:69-76.
- NCC (2010). National Conference on Food Safety and CODEX activities in Ethiopia (NCC, December 14-15, 2010).
- WHO Regional Office for Africa (2004). Developing and Maintaining Food Safety Control Systems for Africa. Current Status and Prospects for Change, Second FAO/WHO Global Forum of Food Safety Regulators, Bangkok, Thailand, 12-14 October 2004. (WHO, 2004).
- WHO (2008). Food Safety Issues, Terrorist Threats to Food, Guidance for Establishing and Strengthening Prevention and Response Systems. Department of Food Safety, Zoonoses and Foodborne Disease Cluster on Health Security and Environment, May 2008.
- Dawit D (2010). The role of Regulatory Bodies in ensuring food safety in Ethiopia - Status and Achievements of MoH.
- Erkyihun T (2010). The role of Quality and Standards Authority of Ethiopia (QSAE) in ensuring food safety.
- Fikremariam A (2010). The role of Standards in ensuring food safety in Ethiopia. Food safety and codex activities In Ethiopia, December 14-15, 2010 Addis Ababa. Enhancement of Food Safety Standards. *The World Economy*, 31(1): 1-15.
- World Bank (2005). Food Safety and Agricultural Health Standards: Challenges and Opportunities for Developing Country Exports. Washington DC, World Bank. .
- Pillay V, Muliyl V (2005). ISO 22000 Food Safety Management Systems - The One Universal Food Safety Management System Standard That Works Across All Others, SGS Systems and Certifications Services, Surrey.
- Yalemtehay M (2010). Food safety and codex activities in Ethiopia. Performance of the National Codex Committee of Ethiopia.
- WHO (2008). Food Safety Issues, Terrorist Threats to Food, Guidance for Establishing and Strengthening Prevention and Response Systems. Department of Food Safety, Zoonoses and Foodborne Disease Cluster on Health Security and Environment, May 2008.
- Food safety economics, 2000. New approaches to food safety economics: Overview and new research direction, Retrieved from <http://library.wur.nl/frontis/food-safety>.
- Loken Joan K., *The HACCP Food Safety Manual*, New York, John Wiley & Sons, 1995 (Loken Joan K, 1995).
- Laurian J. Unnevehr and Helen H. Jensen, *The Economic Implications of using HACCP as a food safety regulatory standards*, Ames, Iowa, Center for Agricultural and Rural Development Iowa State University, 1998 (Laurian J,et al., 1998).
- UNCTAD (2007a) *Food Safety and Environmental Requirements in Export Markets: Friend or Foe for Producers of fruit and Vegetables in Asian Developing Countries?* Geneva: United Nations Conference on Trade and Development. (UNCTAD 2007a).
- South African Consumer Protection Act, 2008, available at:<http://www.dti.gov.za/ccrd/cpact09.pdf>,
- Geraint Howells and Stephen Weatherill, *Consumer Protection Law*, (2nd ed), Ashgate Publishing Limited, USA, (Geraint Howells and Stephen Weatherill, 2006)
- Stephenson, S. (1997). "Standards, Conformity Assessment and Developing Countries." Working Paper No. 1826. Development Research Group. Washington, D.C.: World Bank.
- Roberts, D. (1998) 'Preliminary Assessment of the Effects of the WTO Agreement on Sanitary and Phytosanitary Trade Regulations', *Journal of International Economic Law* 1.3: 377-405 .

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