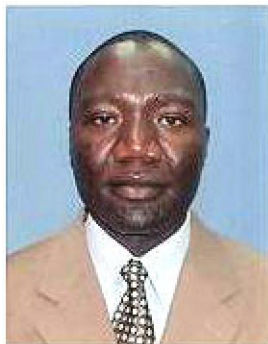


**FOOD SAFETY AND QUALITY MANAGEMENT IN KENYA: AN  
OVERVIEW OF THE ROLES PLAYED BY VARIOUS STAKEHOLDERS**

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**ABSTRACT**

This review focuses on highlighting the roles played by some stakeholders to ascertain food safety and quality from the farm to the fork in Kenya and the legislations under which they operate. Necessary recommendations to strengthen the weak links along the food supply chain have also been made. Food is considered to be safe if there is reasonable demonstrated certainty that no harm will result from its consumption under anticipated conditions of use. In Kenya, the responsibility for coordinating the multiple institutions (agencies) involved in food safety management rests on the Department of Public Health (DPH) under the Ministry of Public Health and Sanitation. The basic Kenyan laws for food safety enforced by DPH include the Food, Drugs and Substances Act, Chapter 254, the Public Health Act, Chapter 242 and the Meat Control Act, Chapter 316. Food-borne diseases are still a major problem in Kenya because of the enormous informal sector in the food industry accounting for at least 80% of the supply to the domestic markets where hygiene controls are rudimentary. Most Kenyan standards are adopted from international ones, such as International Organization for Standardization (ISO) and Codex Alimentarius Commission (CAC). In the food supply chain, farmers have to apply Good Agricultural Practices, sellers of commodities/raw materials at local or international level have to apply Good Distribution Practices, and manufacturers have to apply Good Manufacturing Practices. Food supply chain operators have to apply either national (mandatory) standards or private (voluntary) standards. Chain supporters provide the necessary impetus while chain enablers provide the control and/or regulation. Kenya Bureau of Standards is the major chain enabler. It is the National Codex Contact Point, serves as the secretariat of the National Codex Committee, and is the National Enquiry Point of the WTO. Despite the existing legal framework for food safety and quality controls, some processed food products in the Kenyan market are of sub-standard quality. The informal sector must be keenly monitored by the food safety agencies to uphold the application of HACCP and fair trade since it is the major supplier of food products to the domestic markets. Safety and quality management in the food supply chain has cost implications and income is a limiting factor for all the stakeholders and the success of food safety management system. Poverty alleviation would stimulate the purchasing power of domestic consumers, consequently promoting hygiene-based demand instead of price-based demand for food.

**Key words:** Food safety, supply chain, Kenya

## INTRODUCTION

Food quality and safety are the totality of characteristics of the food products that bear on their ability to satisfy all legal, customer and consumer requirements [1]. It is noteworthy that food safety is not synonymous with food quality, although there might be an overlap. Quality includes all product attributes that influence its value to consumers, whereas safety includes all measures intended to protect human health [2, 3]. The definitions of the terms “Food hygiene”, “Food Quality Control”, “Food Safety” and “Food Standards” used in this article have been adopted from Lasztity *et al.* [3]. Absolute safety is an unattainable goal for any food. However, food is considered to be safe if there is reasonable demonstrated certainty that no harm will result from its consumption under anticipated conditions of use [4]. The national food safety and quality system in Kenya is managed by various statutory government agencies under different ministries [5-7]. They aim at promoting public health, and protecting the consumers against health hazards, and enhancing economic development [5, 7].

Although Kenya lacks a defined and published policy on food safety as part of a wider National Food and Nutrition Policy [8], there exists food laws designed to protect the consumers. Food safety control agencies operate under the Ministries of Trade, Industrialization, Public Health and Sanitation, Livestock, Fisheries Development, and Agriculture. A summary of the legal and policy framework of these agencies and the implementing mechanisms for the laws is documented by FAO/WHO, 2005 [5]. The agencies include Kenya Bureau of Standards (KEBS), Kenya Agricultural Research Institute (KARI), Kenya Plant Health Inspectorate Services (KEPHIS), Department of Public Health (DPH), Weights and Measures Department (WMD), Government Chemist's Department, Department of Veterinary Services (DVS), Kenya Dairy Board (KDB), and Horticultural Crops Development Authority (HCDA), among others [7, 9]. The functions of these agencies include sensitization and implementation of codes of hygiene and agricultural practices by stakeholders throughout the food chain [6]. Despite these, Kenya experiences major problems of non-compliance with basic food safety and agricultural health practices in local markets. The level of awareness of the said practices among small producers is negligible [10].

Standards for food and agricultural products are developed by technical committees, numbering about 30, with their secretariats at KEBS [9, 11]. Food standards give specifications for the compositional requirements, microbial requirements, the tolerance limits for contaminants, packaging, labeling and the hygiene conditions necessary for manufacture of products [11]. Kenyan standards are practically adopted from international ones, International Organization for Standardization (ISO) and Codex Alimentarius Commission – Codex (CAC), following the philosophy of World Trade Organization (WTO) Sanitary and Phytosanitary Standards (SPS) and Technical Barrier to Trade (TBT) agreements [10, 12]. According to WTO, food safety issues are the realm of SPS agreement while TBT considers food quality issues [2].

The full extent of the burden and cost of unsafe food is currently unknown in both the developed and developing countries [13]. Food-borne diseases remain a problem in Kenya. Approximately 70% of all episodes of diarrhea are attributable to ingestion of contaminated food and water [5]. Processed foods constitute 75% and 25% of the diets in the urban and the rural areas of Kenya, respectively [5]. The informal sector in the food industry comprises small and medium size enterprises (SME) and food vendors, which supply at least 80% of the food products to domestic markets, including meat and milk, under rudimentary hygiene controls [8, 14]. Aflatoxin poisoning during January – June 2004 in Eastern Kenya resulted in a total of 317 reported cases with 125 deaths. Maize sampled from the affected area had aflatoxin B1 concentrations of 4400ppb which is 220 times greater than the 20ppb allowed by food safety standards [15]. Fatalities linked to the consumption of meat from Rift Valley Fever infected animals have caused public health concerns in the recent past indicating the weaknesses of food safety control agencies in Kenya.

The Minister for Public Health and Sanitation is responsible for coordinating multiple agencies involved in food safety management [9] through the Department of Public Health (DPH). The DPH safeguards the health of consumers through food safety and quality control, surveillance, prevention and control of food borne diseases/illnesses [16]. The Minister constitutes the boards under DPH that oversee the enforcement of the basic laws for food safety namely: Central Board of Health – (Food, Drugs and Chemical Substances Act, Chapter 254) [17], and, Public Health Standards Board – (Public Health Act, Chapter 242) [18]. The Ministry is also the secretariat of the National Food Safety Coordination Committee established to enhance coordination and minimize overlaps in the enforcement of food safety laws by the various agencies [16]. Each agency operates independently to accomplish its mandate and complements the basic laws for food safety [19]. The Public Health Act Chapter 242 empowers the Municipal and County councils to enforce food and environmental hygiene [18]. Effective enforcement of food safety laws is necessary to minimize the frequency of food-borne diseases, social burdens of health care, enhance *per capita* revenues and productivity, food security, and, threats to tourism and foreign trade [5, 20].

The liberalization of agro-industrial markets and the worldwide integration of food supply chains have made the assurance of food quality and safety a major concern [1, 2, 5, 10]. Approximately 75% - 80% of the Kenyan population is dependent on subsistence agriculture economy [21, 22] and 20% of all the agricultural food commodities are marketed [21]. Global trading needs standardized products under the WTO's SPS and TBT agreements. Legal requirements for quality assurance systems and food safety controls along the entire food chain have increased considerably [1, 2, 10, 23]. The major prerequisite for ensuring food quality and safety is that all stakeholders in the food supply chain recognize that primary responsibility lies with those who produce, process and trade, and that public control should be based on (scientific) risk assessment.

An effective system of food safety and agricultural health controls must be judged based on effectiveness, scientific and technical relevance and access to financial, physical and human resources. Sufficient political and economic priorities are necessary for the maintenance of such controls both for trade promotion and the welfare of domestic producers and consumers [24]. A safe and good-quality product must be the result of adequate control at all stages of the supply chain rather than corrective action taken late in the process [1, 2, 10, 23].

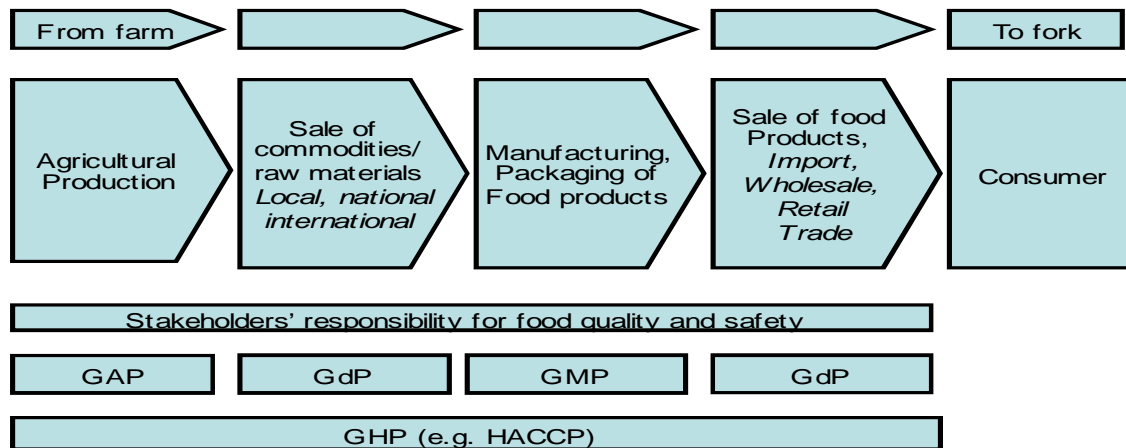
This paper aims to highlight the roles played by various players along the food supply chain to try to ascertain the food safety and quality management in Kenya, including food exports and imports.

## METHODS

A desk top review of literature was carried out. Literature search was done *online* using Google search (including Google scholar), Dublin Institute of Technology *online* library electronic journals, Catholic University of Applied Science *online* library electronic journals, Prince Leopold Institute of Tropical Medicine *online* library electronic journals, and HINARI access to research. The search strategy for the identification of literature used the following terms: Food safety in Kenya, Food Standards in Kenya, Food safety Controls in Kenya, Food safety regulations in Kenya, Food safety Laws in Kenya, and Food quality Management in Kenya. Google search generated most of the referenced articles that were relevant to this review. Articles published as from the year 1995 and later were included. These consisted of published research and literature review articles, government guidelines and reports, as well as publications and reports from Universities, international organizations and professional associations. The references of some of the selected articles further led to the search for other articles especially the relevant food laws.

This review has been structured by considering the stakeholders in the food supply chain from “farm to fork” as illustrated in Figure 1 [1]. All the relevant stakeholders have been mentioned and/or discussed under broad categories as food supply chain operators, food supply chain supporters, and, food supply chain enablers. Food standards applied in Kenya have also been discussed.

**FOOD SUPPLY CHAIN**



**Figure 1: Food Supply Chain from farm to fork. Adapted from Will and Guenther [1]**

Based on Figure 1, each player at every level has to apply good practices which ultimately contribute to food safety and quality. Farmers must apply Good Agricultural Practices (GAP). Sellers of commodities/raw materials at local or international level must apply Good Distribution Practices (GdP), and manufacturers must apply Good Manufacturing Practices (GMP). These practices are generally Good Hygiene Practices (GHP) fundamental to Hazard Analysis and Critical Control Points (HACCP) standards. Application of HACCP has been a major challenge in developing countries because of informal food markets [14]. Moreover, there is minimal awareness and application of basic hygiene practices among food handlers and consumers [8, 10].

Stakeholders in the food supply chain can be classified as food supply chain operators, food supply chain supporters, and food supply chain enablers [1]. The chain operators include: farmers; processors; importers, wholesalers and retailers; and consumers. The chain supporters include: operational service providers subcontracted by the operators; and, support service providers such as publicly or collectively financed institutions including branch associations. The chain enablers include: public entities such as policy makers and regulatory bodies; and food control agents at boundaries.

**Food Supply Chain Operators and Supporters**

Farmers, as food supply chain operators, ensure food quality and safety through variety and seed selection, soil preparation, crop and pest control management, harvesting methods, sorting, grading, and packing, guided by GAP. The Agriculture Act Chapter 318 governs the agricultural sector, whereas Agricultural Produce (Export) Act Chapter 319 provides for the grading and inspection of agricultural

produce for export [7]. Kenyan farmers involved in the horticultural sector for export markets and some few high class local consumer markets are strictly active in applying GAP [5, 9, 25]. The Ministry of Agriculture has Agriculture Extension officers up to divisional levels to enforce GAP as stipulated in the Agriculture Act [9].

Farmers targeting the export market, predominantly Europe, are supported by organizations such as Kenya Organic Farmers Association (KOFA) and Fresh Produce Exporters Association of Kenya (FPEAK). The associations emphasize the application of GAP by administering KenyaGAP [9, 20, 26]. KenyaGAP is a private standard affiliated to the European Retailers Produce working group for Good Agricultural Practice (EurepGAP) [27, 28, 29, 30]. Food safety standards in Europe emphasize traceability, maximum pesticide residue levels (MRL) and process standards. These have become much stricter since January 2005 under EurepGAP [22, 31]. KenyaGAP certification acknowledges that exporters are meeting internationally and nationally recognized production practices and standards for fresh produce, and provides customers with a 'guarantee of confidence' [9, 25]. Internal auditing or pre-auditing among exporters is done by FPEAK, while external certification is done by internationally recognized certification bodies such as KEBS and AfriCert. AfriCert specializes in agribusiness certification.

Kenyan farmers are supported by state corporations such as Kenya Plant Health Inspectorate Services (KEPHIS) and Horticultural Crops Development Authority (HCDA). Kenya Plant Health Inspectorate Services was established in 1996 [32]. It offers inspectorate services on all matters related to plant health and quality control of agricultural inputs and produce. These are achieved by enforcing the Plant Protection Act chapter 324, the Seeds and Plant Variety Act chapter 326 of 1972, the Suppression of Noxious Weeds Act chapter 325 and the Agricultural Produce (Export) Act chapter 319. These legislations empower KEPHIS to implement regulations/procedures for importation/exportation of any form of plant materials, fertilizers, pesticides and herbicides; Plant breeding, and, registering seed merchants. Horticultural Crops Development Authority is a state corporation established under the Agricultural Act chapter 318 through a subsidiary legislation in 1967, Legal Notice number 229/1967. It is the government's regulatory agency for the horticulture sub – sector [33]. It also provides technical advisory services which include quality control, training and extension services, consultancy and engineering as well as marketing services including cold storage facilities and licensing of exporters. Kenya Plant Health Inspectorate Services and HCDA seem to play both supportive and enabling roles in the food supply chain in Kenya.

Food processors in Kenya apply good manufacturing practices (GMP) through raw material handling and control, product and process management and control including documentation of all work routines, and, human resource management. They are supported by organizations such as Kenya Association of Manufacturers (KAM), and Association of Fish Processors and Exporters of Kenya (AFIPEK) [9, 34]. The KAM exposes its members to business information on trade regimes like the East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA),

South African Development Community (SADC), African Caribbean & Pacific-European Union (ACP-EU), and WTO [35]. Such information includes safety and quality standard requirements the products must meet to be able to access these markets.

Kenya fish industry produce accounted for 0.3% Gross Domestic Product (GDP) for the period 1999 – 2003 and 30% of this was exported to Europe and other countries, namely Israel, Japan and Australia [36]. The industry operates under the Fisheries Act, Chapter 378 Laws of Kenya that provides for development, management, exploitation, utilization and conservation of fisheries and of connected purposes [37]. Fish export standards are based on European Union (EU) Standards such as 91/493 EU and 91/942 outlined in the Kenya Gazette Supplement No. 55 and other policy documents [9, 26, 38]. The AFIPEK enforces the stipulated standards, regulations and code of conduct, and further aims to harmonize policies on surveillance, monitoring and processing standards in the three East African countries. The Fish Inspection and Assurance Unit ensures the attainment of the standard of fish for the export market.

The Livestock sector in Kenya contributes 3.3% of GDP. Department of Veterinary Services (DVS) enforces several laws that impact livestock marketing. These include the Animal Diseases Act Chapter 314 of 1972 (revised in 1989), the Dairy Industry Act Chapter 336, the Pig Industry Act Chapter 361 [39] and the Meat Control Act Chapter 316 [5, 16, 40]. The Meat Control Act Chapter 316 is applied by both the DVS and DPH [37]. Approximately 88% of marketed milk in Kenya is sold unprocessed, outside regulated channels [14]. Among the 65 slaughter houses operational in Kenya in the year 2000, only two, namely, Hurlingham and Farmers Choice, were export standard slaughterhouses [39]. The revival of the government owned Kenya Meat Commission, the once leading meat processing facility of export standard which closed down in 1985, will boost this sector. The DVS and Kenya Dairy Board (KDB) play both the supporting and enabling roles by promoting and regulating activities in the dairy/livestock sector.

Uniform and accurate weights and measures are essential to trade with any goods [3]. Accurate weights and measures of ingredients as indicated in recipes affect the quality and safety of processed food. The WMD under the Ministry of trade enforces the Weights and Measures Act Chapter 513 and the Trade Descriptions Act Chapter 505 [41, 42]. The Weights and Measures Act Chapter 513 aims at establishing uniform systems of units of measurement; control weighing and measuring equipments in use for trade; and, control transactions in some goods [41]. The Trade Descriptions Act Cap 505 aims at protecting the public against false trade descriptions applied to goods by word of mouth, label, notice and or advertisement [42]. The false description of a product could be related to pricing, country of origin and/or manufacturer, Expiry date, and composition/ingredients.

Kenyan Importers, Wholesalers and Retailers trading in food products are responsible for the safety and quality of their merchandise. Laws that regulate players in this sector include the Public Health Act Chapter 242, the Food Drugs and Chemical



Substances Act Chapter 254, the Weight and Measures Act Chapter 513 [41], and the Trade Descriptions Act Chapter 505 [42] among others. These stakeholders are compelled to take all reasonable precautions and exercise due diligence in the avoidance of failure, whether in development, manufacture, distribution, advertising or sale of food products to the consumer [43]. Such obligation prompted the development of standards such as EurepGAP [27] and British Retail Consortium (BRC) Global [43] by retailers in Europe and Britain, respectively. Giant retail outlets such as Nakumatt, Uchumi, Naivas, Ukwala and Tuskys are presumably compliant with the basic laws for food safety. Kenyan retailers should emulate their peers in Europe by insisting on traceability, which is the foundation of EurepGAP and British Retail Consortium (BRC).

Consumers participate in the food supply chain through product selection, storage, preparation, consumption and disposal of household waste [1]. By reading the food labels they ensure that the products meet safety standards. They should demand for the 'diamond mark' of quality which indicates that the product has been certified by KEBS as safe and of the right quality. Consumer organizations in Kenya include the Kenya Consumer Organization, Consumer Information Network, and Consumer Insight, among others. They aim to protect consumers against unfair trade practices and purchase of unsafe or substandard food products [19], as well as representing consumers at the National Codex Committee [16]. Kenyan consumers are uninformed on their rights yet the fundamental duty of any consumer organization should be consumer education focusing on consumer rights [16]. Poverty with attendant food insecurity hinders effective participation by Kenyan consumers in the food supply chain.

### **Food Supply Chain Enablers**

These include political, economic and legislative framework conditions that regulate the food supply chain operators, including risk based phytosanitary control, certificate of origin monitoring, and reporting [5, 11]. Government agencies that act as enablers have numerous roles. Only those played by research and training institutions and KEBS are discussed in this section.

Universities, Polytechnics and Technical Institutes train students at certificate, diploma, undergraduate and graduate levels in Food Science and Technology. Three Kenyan public Universities, namely Jomo Kenyatta University of Agriculture and Technology, University of Nairobi, and Egerton University produce a combined annual turnover of about 200 graduates in Food Science and Technology [44]. Tertiary colleges train specifically those in the food service sector. Technical institutions, for example Kenya Industrial Research Development Institute, train informal food processors in the use of appropriate agro-processing technologies and importance of GMP [19]. Ojijo [no date - n.d] [44] observes that there exists gross misplacement of personnel in the food industry despite the availability of qualified food technologists. He attributes this to lack of an active professional society that can regulate food manufacture and trade by imposing professional codes of practices and promotion of professional interaction and research on food processing and

preservation. The existing Kenya Institute of Food Science and Technologists (KIFST) is a registered society currently moribund [44]. It needs statutory empowerment like other professional bodies such as Kenya Nutritionists and Dieticians Institute, established by the Nutritionists and Dieticians Act number 18 of 2008 [45].

Research is key to evidence-based policy formulation and Universities are pacesetters in research worldwide. Food Science and Technology Research enhances food safety, reduces spoilage and develops healthier and more appealing foods that meet consumer expectation and export potential [44]. The impact of research output by Kenyan Universities on the food industry is currently unknown. All researches require clearance (approval and licensing) from the National Council for Science and Technology (NCST) under the Ministry of Higher Education Science and Technology [5, 16]. It operates under the Science and Technology Act Cap 250 (1980) laws of Kenya and hosts the National Biosafety Committee [5, 46]. The Government, through NCST, provides limited research funds for graduate Kenyan students at local universities. University – industry alliance must be strengthened to provide the needed research funds [44].

Kenya Agricultural Research Institute is a semi-autonomous national institution, established in 1979, bringing together research programmes in animal health, animal production, Food crops, seeds, biotechnology, horticultural and industrial crops, among others [47]. It mainly aims at putting research findings into practice, which ultimately increases agricultural productivity and thus contributing to national food security. Some of the research activities are done in collaboration with universities and other organizations/institutions, namely, World Bank, International Livestock Research Institute (ILRI), International Crop Research Institute for Semi-Arid Tropics (ICRISAT), The International Center for Insect Physiology Ecology (ICIPE), Forum for Agricultural Research in Africa (FARA), among others.

Kenya Bureau of Standards is a statutory Public body under the Ministry of Industrialization, operational since July 1974, and mandated by the Standards Act Chapter 496 [16]. The KEBS board of directors, the National Standards Council, is its policy-making body for supervising and controlling the administration and financial management [48]. Kenya Bureau of Standards coordinates all activities concerning the development and implementation of both local and international standards relevant to Kenya [49]. The aims and objectives of KEBS are clearly outlined in references [10, 49]. Under the Standards Act Cap 496, national standards become mandatory after publication in the Kenya Gazette [10]. To improve on efficiency and provide more effective services to clients, KEBS established a Certification Unit (CU), accredited by the Quality Systems Accreditation Committee (QSAC) that offers certification services as listed in references [9, 10, 37]. Kenya Bureau of Standards gathers information on quality concerns through industrial visits and receives private complaint samples for analysis in its laboratories as part of quality assurance and testing services components of its operations [19]. Laboratory services are also

provided by KEPHIS, KARI, DVS, Kenya Medical Research Institute (KEMRI) and International Livestock Research Institute (ILRI) [5].

Kenya Bureau of Standards is the National Codex Contact Point, serves as the secretariat of the National Codex Committee (NCC) [50, 51], and is the National Enquiry Point of the WTO [35]. As the Codex Contact Point, KEBS acts as a link between Codex Secretariat and Kenya. It coordinates all relevant Codex activities countrywide; and receives and maintains a library of all Codex texts [51]. National Codex Committee is under the Ministry of Trade [16] and comprises Government ministries, industry, consumers, KEBS and other Stakeholders [50]. Functions of NCC as listed by FAO/WHO [51] include: formulation of responses to CAC; advising the Government on the best possible decisions regarding Codex Standards; and, appointment of Technical Sub-committees whenever necessary. It also implements Codex texts adopted by CAC including the July 2003 text on safety assessments of foods derived from genetically modified organisms (GMO) [4, 52]. It is reported in GAIN (2005) [7] that although there is no current requirement to label GMO foods, importation of GMO requires authorization by the National Biosafety Committee which issues Import permit.

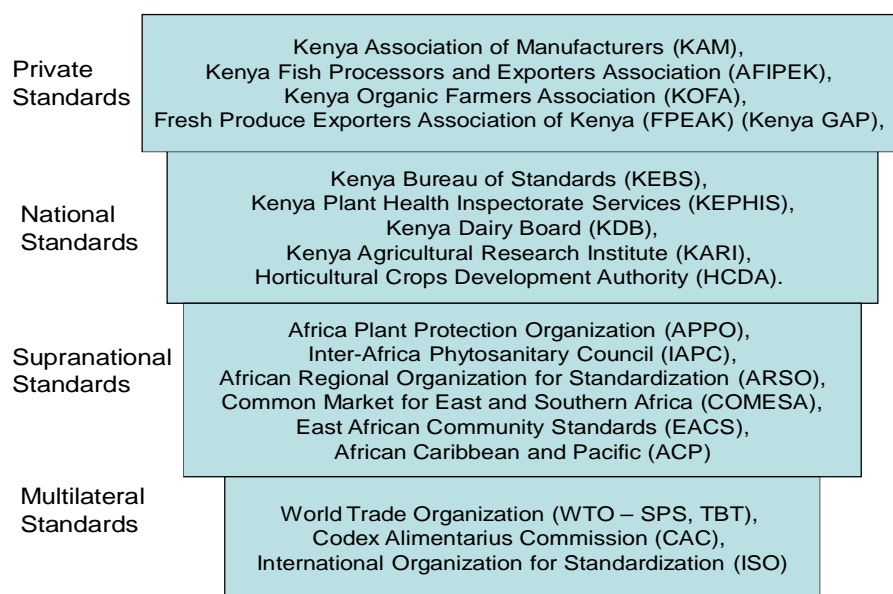
Kenya Bureau of Standards implemented the Pre-Export Verification of Conformity (PVoC) to Standards Programme beginning September 29, 2005 [49]. This is conformity assessment and verification procedure applied to specific Goods/Products at the respective exporting countries, to ensure their compliance with the applicable Kenyan Technical Regulations and Mandatory Standards or approved equivalents. The required minimum shelf-life of imported food items is 75% remaining upon arrival in Kenya [7, 49]. KEBS appointed Société Générale de Surveillance S.A. (SGS) and Intertek to operate the PVoC program on its behalf depending on the country of origin [53].

## **FOOD STANDARDS APPLIED IN KENYA**

Food standards applied in Kenya can be categorized as either mandatory or voluntary according to Will and Guenther [1], and Aloui and Kenny [54]. Mandatory standards are set by Governments in the form of regulations, which include technical requirements such as testing, certification and, labeling. They are enforced by liability rules of non-compliance. A detailed account on the various government agencies and the laws they are responsible for enforcing are documented by FAO/WHO [5]. Voluntary standards are set through formal coordinated approaches of key stakeholders in the supply chain (business associations, NGO initiatives or are developed and monitored by individual companies). These include some of the standards observed by associations, namely FPEAK, KOFA, KAM, and AFIPEK. Will and Guenther [1], and Aloui and Kenny [54] stated that voluntary standards are not legally mandatory but some (ISO 9000 standards for quality management) have become *de-facto* mandatory standards. They are required when producers want to compete in international markets. Observance of voluntary standards such as BRC

Global and Tesco Nature’s Choice (TNC) becomes a precondition for establishing long-term supplier-customer relationships.

Standards can also be categorized as private, national, supranational, and multilateral standards [1, 54] as indicated in Figure 2 below.



**Figure 2: Food Standards Applied in Kenya. Adapted from Will and Guenther [1]**

Private standards are voluntary and are observed by Kenyan associations as indicated in Figure 2. They originate from foreign markets targeted by the associations. Such standards include KenyaGAP, Integrated Crop Management (ICM), TNC, and BRC. Bureau Veritas and SGS are accredited to perform BRC certification and audit in Kenya [10]. Supranational standards originate from regional organizations and are mandatory just as national standards. There are trade restrictions/barriers due to nonconformance to them. Multilateral standards are voluntary but act as benchmarks for national standards [55]. In formulating national standards, priority for reference is given to relevant Codex and other international standards (texts) to provide the platform on which national standards may be adopted or adapted to suit the national food safety situation [5]. Other reference materials include regional and other national standards (of other countries), laws and regulations. Such references help harmonize national standards with other standards and technical regulations ultimately to protect consumers and promote fair trade.

## FOOD SAFETY SITUATION

The food safety situation in Kenya can be described in terms of strengths, weaknesses and the way forward as reported in reference [5].

### Strengths

- Food safety regulators distributed at all levels of the food supply chain.
- Legislations in place for enforcement of the food laws.
- Standards and regulations in place.
- Human resource with relevant professional orientation in place.
- Promotion of quality assurance in the food supply chain.
- Certification services in place.
- Recognition of need to improve coordination of food safety and control activities.

### Weaknesses

- Uncoordinated food safety and control activities.
- Poor harmonization of standards and regulations.
- Inadequate protection of local consumers.
- Inadequate capacity building in food safety principles.
- Inadequate laboratory services.
- Inadequate surveillance system.
- Lack of consumer awareness programmes.

### Way Forward

- Collaborative training efforts among food safety agencies.
- Training of trainers in food safety issues.
- Refresher courses for food safety personnel.

## CONCLUSION

There are well defined food laws that regulate the players in the food chain from “farm to fork” in Kenya. The food chain operators and supporters targeting the export market are stricter with the application of the private standards. Most government corporations act as food chain enablers due to the regulatory powers bestowed on them by the laws under which they are established. Some state corporations seem to act as both food chain supporters and food chain enablers.

The informal sector (SME and food vendors) in Kenya is the major supplier of food products to the domestic markets, yet they operate in disregard of food safety and quality controls. This is because the SME and food vendors, in contrast to the formal sector in the food industry, lack qualified personnel, infrastructure and equipment necessary for hygienic storage and handling of food products during production, distribution and retailing. Some unscrupulous stakeholders in this sector have been reported in the local media to trade in counterfeit and sub-standard products. The informal sector needs keen attention by the food safety agencies to uphold the application of HACCP and fair trade. Despite the existing legal framework for food

safety and quality controls, some processed food products in the Kenyan market are of sub-standard quality as revealed in a study on processed fruit products by Olielo and Rombo [56]. Well coordinated food safety management system in Kenya is found among the stakeholders that target the export market and the medium to high-income domestic market [5].

Universities and Technical institutions should continuously monitor and evaluate the food safety and quality control situation through research because they have the necessary expertise. This requires Food Industry syndicate – University consortium collaboration. A universities consortium being a pool of top expertise should push for the statutory empowerment of KIFST and publishing of a food safety policy. The DPH in collaboration with other agencies, consumer associations and professional associations must actively educate the general public on food safety and quality controls. This will enlighten them on safety and quality requirements of various food products in the food supply chain. Safety and quality management in the food supply chain has cost implications. Income is a limiting factor for all the stakeholders and the success of food safety management systems. Poverty alleviation would stimulate the purchasing power of domestic consumers, consequently promoting hygiene-based demand instead of price-based demand for food.

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