



## Food safety regulatory model in India



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### ABSTRACT

The changing food safety standards, stricter sanitary and phyto-sanitary requirements and improved global product norms trigger the necessity to improve legislative network of a country based on codex Hazard Analysis Critical Control Point (HACCP). Due to multiplicity of laws in a majority of developing nations processed food industry is facing a major threat for survival and growth. In India nine different ministries were involved in controlling this area. Food Safety and Standards Act was established to integrate the food safety laws in India, in-order-to systematically and scientifically re-orient food processing and manufacturing industry from regulation to self-compliance. In this study, authors' focuses on issues related to the food legislation enforced time to time based on international scenario and trade. This study brings out the fact that more holistic approach is seen in new scientific standard development and covers a wider variety of products including functional food, novel food and beverages. The basic requirements of food hygiene and Good Manufacturing Practice (GMP) practices as described by codex are important for any national food safety control. However, the study concludes that there exists a gap in infrastructure and risk-based approach in the both implementation and enforcement. The study also provides the SWOT analysis of Indian legislative model and recommendation for improvement.

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### 1. Introduction

Food safety is a concept that the food will not cause any harm when consumed according to its intended use (ISO 22000, 2005). Food hygiene can be defined as something that is clean and does not cause illness (CAC, 2003). One of the major areas of concern is to provide safe food to consumers in ever growing competitive global markets. The significant driving factor for this increased attention to food safety is food borne pathogens and chemicals resulting in food borne accidents. The impact of food borne illness associated with contamination has been neglected in most of the developing countries. As per WHO's estimates, each year there are more than 1000 million cases of acute diarrhea in children below five years in developing countries (WHO, 2008). In China, at least six babies died and another 294,000 infants suffered kidney stones and other urinary problems after drinking milk or infant formula as a result of melamine contamination in December 2008. There are incidents in India too such as children have fallen sick after eating contaminated midday meals, adulteration of Kuttu flour in festival season. Food borne illness can damage trade and tourism, and will lead to loss of earning, unemployment and

litigation. The Technical Barrier to Trade (TBT) agreement under World Trade Organization (WTO) gives equal opportunity for all countries to trade; at the same time it expects equal food standards across all members as defined by Codex Alimentarius Commission. The trade barriers are removed and it is obligatory for exporting countries to fulfill the minimum requirements. The responsibility of provision of safe food lies with signatory country. All the stakeholders of a food chain including farmers and growers; manufacturers and processors; food handlers and consumers are responsible for food safety. Contamination can occur anywhere along the food chain. National food regulatory model is an important control mechanism to achieve food safety compliance. FAO guidelines (FAO/WHO, 2003) on "Strengthening national food control systems" is focused on government agencies and food control authority self-assessment and capacity building. The assessment is based on six elements [food control management, food legislation, food inspection, official food control laboratories and food safety and quality information, education and communication]. This research focuses on evaluation of Indian food regulatory model which has seen a shift from control of food adulteration to a proactive food safety legislation based on hazards control primarily under the six elements defined by FAO (FAO/WHO, 2006). The internal strengths and weakness and external opportunities and threats are identified and a model is

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proposed based on risk assessment for effective management of national food control program.

## 2. Background

### 2.1. Literature review

HACCP is an indispensable part of food safety along with basic prerequisite programs as described by Codex Alimentarius Commission (Codex, 2003b). The HACCP term was first quoted by Pillsbury along with NASA while developing the food products for the astronauts in the 1959. In many countries across the world HACCP is now a standard for both export and the supply of food to major retailers (E. Taylor, 2008; J. Z. Taylor, 2008). The detailed literature review on HACCP is placed at Table 1. However, it also forms part of the legislation in most countries; the scope of the requirements varies in terms of industrial sector, destination of product and size of business. HACCP development is widespread in large food manufacturers its use is limited within smaller businesses, with particularly slow progress in the hospitality sector (E. Taylor, 2008; J. Z. Taylor, 2008). The European Union and many other countries around the world started implementing HACCP system in their National food control mechanism around 1990. In order to achieve food safety in a country its National Food Control System should adequately address HACCP requirements. The role of government in driving HACCP in UAE is analyzed using SWOT analysis by Al-Kandari and Jukes (2011). They suggested four elements which included government commitment and leadership, appropriate legislation and enforcement, food safety risks and strategies to facilitate and encourage implementation of HACCP through training. Alomirah et al. (2010) analyzed the current state of Kuwait legislative framework and proposed guidelines on enhancement of national food control system to protect consumer from unsafe food and fraudulent practices. The four elements covered in his study included legislative framework, the administrative structures, enforcement practices and providing education and training. They recommended a risk-based integrated framework of food control in Kuwait. Sarter, Sarter, and Gilbert (2010) conducted the SWOT analysis of the governmental setup and covered the issues in implementation of GHP and HACCP system in the country. The institutes and laboratories were identified as primarily responsible of governmental activities which included food policy, risk assessment, legislation, and public authorities. Aruoma (2006) studied the impact of food regulation on the food supply chain under WTO SPS agreement and benchmark international standards that harmonize the trade of safe food. Risk assessment criteria include appropriate level of protection (ALOP) as deemed appropriate by the member country on established sanitary and phyto-sanitary measure to protect human, animal and plant life within Food Safety Objective (FSO). Shears, Zollers, and Hurd (2004) explained the aspect of white paper on the Food Standards Agency: a force of change in January 1998 in European Union and proposed the benefits of an integrated food safety authority establishment.

### 2.2. Integrated authority

European Food Safety Authority (EFSA) was the first integrated approach to control the food legislation in European Union. The white paper on food safety was published and approved in the year 2000. EFSA was set up in 2002 as an independent European agency funded by EU budget that helps to improve food safety in EU and ensure high level of consumer protection. The ownership and responsibilities for both suppliers and producers were strengthened across the supply chain for effective food safety. European Food

Safety Authority worked in collaboration of national authorities and provided scientific advice and technical support on emerging risks in all areas impacting food safety across the supply chain. It constitutes an independent source of information and advice on all matters in food and feed safety. EFSA collaborates with national authorities of the Member States and experts or groups who feel that they may contribute to the Authority's work. There exists a set of horizontal (93/43/EEC) regulations applicable to all food products along with vertical regulations specific to product type in European Union e.g. feed manufacturers (90/667/EEC), meat products (92/5/EEC), marine products (91/493/EEC), etc. The HACCP was made mandatory for seafood industry including importers, meat and poultry industry, fruit juice manufacturers.

In the similar lines, Food Standards Agency is responsible for food safety and food hygiene in United Kingdom. The Agency works in close coordination with local authorities and also commission research related to food safety. Department of Health is responsible for nutrition policy, including nutrition labeling in England. Department of Environment Food and Rural Affairs (DEFRA), along with other activities, were also responsible for food labeling, animal welfare. The laws, regulation, codes of practice and guidance govern the production, processing, distribution, packaging and labeling of food stuffs. General food law primarily Food Standards Act 1999 gave powers to establish integrated Food Standards Agency. The FSA was established in the year 2001. The main objective of the Agency was to protect public health in relation to the food and its related activities. It is an independent government department managed by the board, rather than ministers with an independent outlook.

The food law in US was known as United States Food and Drug Act primarily responsible for controlling the drug and food in entire country in the year 1906. There were several amendments released thereafter and the act was renamed to cover cosmetics as Food Drug and Cosmetics Act in the year 1938. In the year 1962, the food and drug regulation exercised stricter controls related to standards and enforcement. HACCP standard was mandated for high risk items like seafood, meat, dairy, retail, fruits and vegetables juices manufacturer, etc. The food manufacturer and distributors are required to ensure due diligence approach across the food chain. The biggest reform in US food safety laws was achieved by signing the FDA Food Safety Modernization Act (FSMA) in 2011. It aims to ensure that US food supply is safe by shifting the focus from responding to contamination to preventing it. It also requires FDA to make science based standards for safe production and distribution of food products.

### 2.3. Indian legislation: history

India was a food deficit country till its green revolution in year 1970. The focus of food regulation in supply chain was on availability rather than strict quality and safety standards. The key problem during this phase was intentional contamination of food articles with its lower grade look-alike substances going into supply chain for meeting the growing demand. There were cases with look-alike substance in key staple food items like wheat, rice, pulses (PFA cases of adulteration 1980–1984). There were many reported and unreported cases of brick powder in red chillies, lead chromate in turmeric, and vegetable oil contamination with milk fat. The first milestone in Indian food regulation was formulation of Prevention of Food Adulteration Act in the year 1954 and related rule in the year 1956. The act was exhaustive covering in detail the Indian food products and possible sources of contamination, followed by Fruit Product Order released in the year 1955 under the Essential Commodity Act (1955) section 3. It covered the basic hygiene requirements for an establishment which included open and clean

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