Chapter 8

Recommendations

Recommendation 1: Need to set-up an expert group by FSSAI to evaluate the work done so far and work out the strategy for road ahead

8.1 The core principle of the new food regime is to focus on the availability of safe and wholesome food to the consumers. With the passing of FSSA, 2006 there was a paradigm shift from adulteration to food safety, which focuses on prevention of occurrence of foodborne illnesses and raising awareness about NCDs. Having laid the foundation for food safety and undertaken a number of activities since its inception, it is now important for the Food Authority to undertake a detailed analysis. It can be as a Strength-Weakness-Opportunity-Threat (SWOT) analysis based on its first ten years of operationalization. This exercise will also help the Authority in 'connecting the dots' so far its various initiatives are concerned.

8.2 This work should be assigned to an expert group (EG) consisting of experts drawn from different fields relevant to achieve the mandate of the Authority. It is not for possible for the officials of FSSAI to undertake this activity in-house with their day to day activities, and therefore; this EG. FSSAI can provide the logistic support to the EG. EG should have consultations with all the stakeholders across the country through workshops/roundtable discussions/focus group discussions, etc. The output of this EG should be a strategic report that can guide the Food Authority in its work for the next ten years. However, once the report of the EG has been approved by the Authority then it should be institutionalized for implementation and not subject to major changes with the change of management.

Recommendation 2: Implementation of risk-based Inspection across the country

8.3 For fulfilling the mandate of the Act, data not only from multiple sources available within the food safety system would be required, but also sources outside would need to be tapped. The system would require proper capture, storage, analysis and interpretation through an IT-enabled system.

8.4 The periodical inspections and surveillance exercise carried out by State/UTs and FSSAI, to continually monitor the FBOs for various risk factors, yield a lot of data that can be fed into the system. An important concept that can be implemented in this regard is the risk-based inspection after carrying out 'market-audits'. It starts with the identification and evaluation of hazards associated with the food and a review of the control measures in place to determine if they are adequate. Nature of food determines its susceptibility to food risk. Foods like meat, egg, milk, infant foods, raw fruits and vegetables are in high-risk category as compared to low-moisture food like cereals, pulses, etc. It will also take into account size or reach of the business (international, national or micro, small and medium enterprise). The wider the reach, greater the risk it poses. Other factors like history of compliance of the FBO can also be built into the database. Another option could be to move downstream to the manufacturing plants itself to prevent/reduce the possibility of placing unsafe/adulterated food in the market.

8.5 Though Risk-Based Inspection System (RBIS) is yet to be implemented by FSSAI[94] but risk-based sampling system called Risk Management System (RMS) has been introduced under single window clearance for facilitating trade (SWFIT) of customs for imported food[95].

8.6 The risk based approach as discussed in para 8.4 above can cover both domestic and imported foods in the country. This would, however, require not only the strengthening of the physical infrastructure of the food –testing laboratories but training and capacity building of the staff. This would also necessitate effort to educate the operators of small- to medium-sized companies, as well as the agricultural, foodservice and retail sectors, and consumers.

Recommendation 3: Setting-up of Analytical Research and Validation Laboratories (ARVL)

8.7 For implementing the RBIS, there is a need to set-up or designate few laboratories as Analytical Research and Validation Laboratories (ARVL). These laboratories can be the nodal agency for developing protocols, validation, provide PT standards, etc. They can also do round robin testing of laboratory accuracy and reproducibility.

8.8 As already discussed in chapter 7, EFSA as well as CFIA already have such mechanisms in place. CFIA laboratories provide and evaluate a number of proficiency testing (PT) programs that are used as a tool in assessing the

[94] www.fssai.gov.in/dam/jcr.../Transforming_Food_Safety_Landscape_in_India.pd (pp41-42)

[95] Ibid (pp45-46)

competence of the participating laboratories and where deemed necessary provide training in mandated methods, and certification of analysts.

Recommendation 4: Setting up of a robust National Food Safety Surveillance Network

8.9 Food safety surveillance systems are strong in developed countries as is reflected from case-studies given in chapter 5 of the study. In China too, as an integral component of the food safety risk analysis framework, monitoring and surveillance have developed rapidly after the promulgation of the Food Safety Law of the People's Republic of China in 2009. At present, a well-functioning national monitoring and surveillance system has been established, which is comprised of *four* networks and dietary exposure monitoring. The four networks include the foodborne disease surveillance network, the biological hazards (bacteria, virus and parasites) monitoring in foods network, chemical hazards monitoring in foods network and the microbial Pulsed-Field Gel Electrophoresis (PFGE) profile network. The system now covers all 31 provinces, major municipalities and autonomous regions in Mainland China and is carried out for the national food and exposure monitoring and foodborne disease surveillance and investigation.

8.10 While the National Health and Family Planning Commission has been overall responsibly for food monitoring and disease surveillance work, the China National Center for Food Safety Risk Assessment has been assigned overall responsibility for foodborne disease surveillance and dietary exposure monitoring through periodic national Total Diet Studies. The Center also provides technical support and guidance to other agencies implementing parts of the national monitoring and surveillance plan (Wu and Chen, 2018).

8.11 The mandate of FSSAI calls for a comprehensive and well-designed food surveillance and monitoring network for India, taking into account the country's food safety priorities as well as the geographic, agro climatic, population characteristics and global trends in food sector, to ensure availability of safe food to enhance consumer protection and improve consumer confidence in food safety system. As per the **Section 29 (3)** of the food safety and standards act, the food authority shall maintain a system of control and other activities as appropriate to the circumstances, including public communication on food safety and risk, food safety surveillance and other monitoring activities covering all stages of the food business. A national food safety surveillance and data collection network can be set-up by integrating operational as well as proposed initiatives like FSKAN, INFoLNET, NRLP, LMS, RMS, and RBIS of FSSAI with networks like AINPPR.

8.12 The surveillance network shall further be linked with disease surveillance system of Ministry of Health and Family Welfare**.** Monitoring/ analysis of data generated under surveillance network shall be done by the proposed National Food Safety Risk Assessment Centre.

Key Design Considerations for Food Surveillance Framework

- Tracking real-time information from all the networked laboratories particularly the State food testing laboratories and other designated laboratories by FSSAI

- Network all the laboratories of the universities that work in association with FSSAI for real time data
- Interface with Indian Council of Medical Research (ICMR) for data on foodborne diseases reported
- Interface with the online import clearance for real time data on food imports from various ports of entry. Such data can be vital inputs for risk management
- Interface with Indian Council of Agricultural Research (ICAR) for real-time data on residues and contaminants in food collated by them
- Interface with Ministries of Environment & Forests, Sanitation and Drinking Water Supply for data on environmental pollutants and quality of water respectively
- Interface with institutes like CFTRI, NIN & IITR for real-time information on the toxins/contaminants, etc. of food and related reports
- Interface with IDSP & HMIS Network of MOHFW(Ministry of Health & Family Welfare)

8.13 All the above considerations would help in designing a robust food surveillance network that would effectively improve the authorities monitor food safety at both domestic level and food imports coming into the country.

Recommendation 5: Integration with Health Management Systems

8.14 Access to reliable and current intelligence on the incidence of foodborne illness is critical. The laboratory facilities for this type of activity are generally situated outside the food control agencies. It is essential, however, that effective linkages are established between food control agencies and the public health systems including epidemiologists and microbiologists. In this way, information on foodborne diseases may be linked to food monitoring data, and lead to appropriate risk-based food control policies. This information includes annual incidence trends, identification of susceptible population groups, identification of hazardous foods, identification and tracking of causes of foodborne diseases, and the development of early warning systems for outbreaks and food contamination.

8.15 Therefore, IDSP, HMIS, AINPPR and similar other data emerging from various sources will have to be collected and analysed centrally by setting up of a body like National Food Safety Risk Assessment Centre (NFSRAC).

Recommendation 6: Setting up of National Food Safety Risk Assessment Centre (NFSRAC)

8.16 To analyse the data emerging from surveillance network, health management systems and any other source implying food safety, FSSAI should set-up a National Food Safety Risk Assessment Centre (NFSRAC) as the nodal point for all risk related activities that shall continuously interpret data for the FSSAI for suitable action.

8.17 Few years back it was reported that FSSAI is taking action "to set up National Food Science and Risk Assessment Centre (NFSRAC) under the Food Safety and Standards Authority of India (FSSAI) for regulatory research and risk assessment, as well as to oversee surveillance on the lines of international institutions like the Centre for Disease Control (CDC) and Centre for Food Safety and Applied Nutrition in USA and other countries. The implementation of this project would be contingent upon the final approval of the 12th Plan by the National Development Council"[96].

8.18 However, no progress seems to have been made in this regard though some actions have been taken by FSSAI. It is, therefore; proposed that to strengthen the risk assessment process, NFSRAC like nodal body should be set-up.

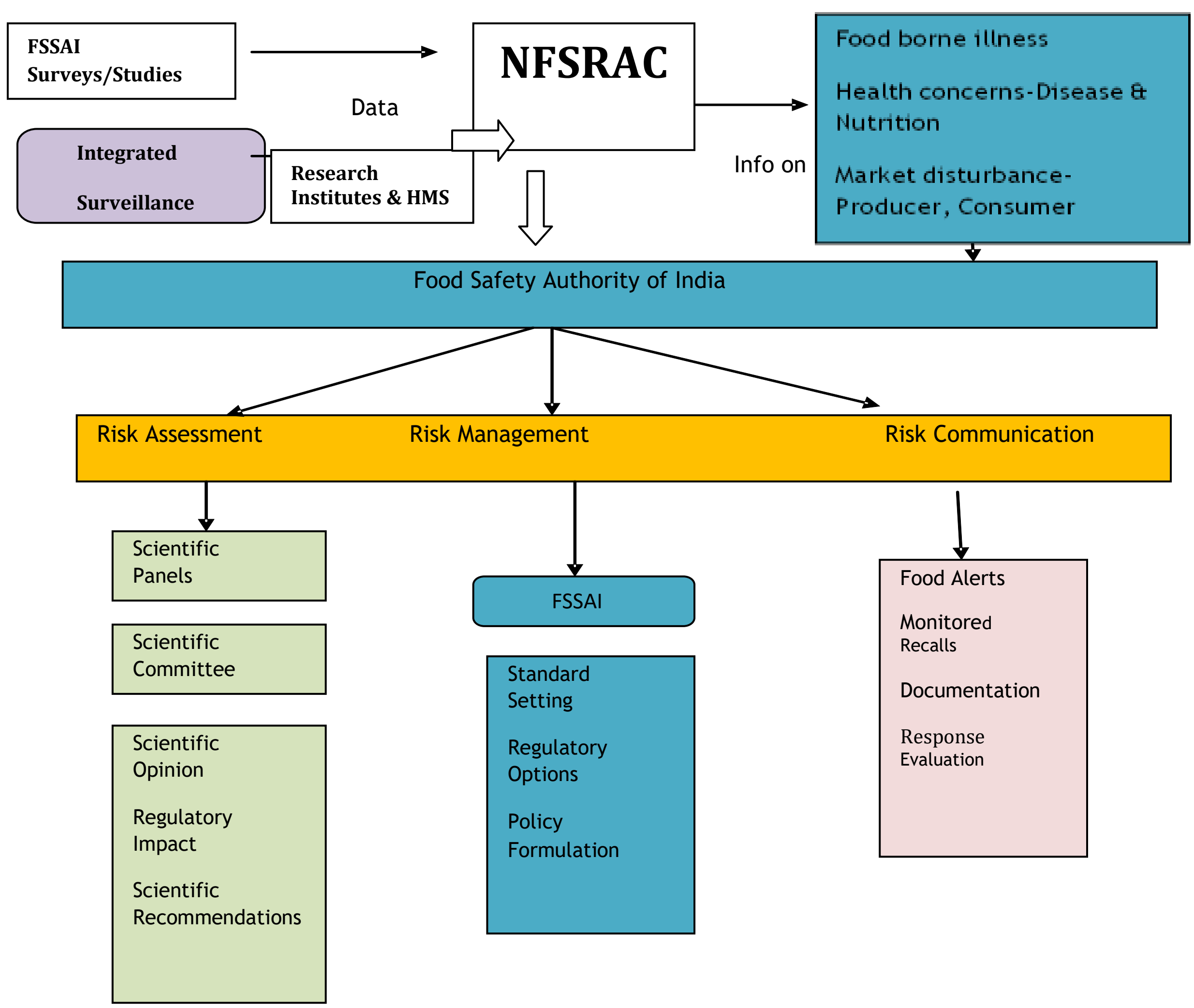
8.19 This functionally independent body can be the hub for all risk assessment activities for the Authority to help it in taking RM decisions. It receives data/information from multiple sources (surveillance, health systems, food testing as well as research laboratories working in the area of pesticides/contaminants/toxicology etc., surveys, studies), collates it, analyzes it using advanced IT techniques and presents its findings to the Authority. Quantitative data is critical for risk assessment to realize its full value, yet much of our knowledge about the incidence of pathogens or toxins in foods, dose-response knowledge, the incidence of acute food-borne illness, incidence of chronic sequelae, and cost of food-borne illness is qualitative or estimates are controversial ((Foegeding 1997). Predictive modelling should help to improve estimates and thereby allow quantitation of food safety risks and also find application for assessing prevention strategies in risk management. Activities like this can also be undertaken by a body like NFSRAC. Model of ANSES can be followed in this regard, where as an independent scientific body it is carrying out its work but it is

[96] http://pib.nic.in/newsite/erelcontent.aspx?relid=90138 (Dec 7,2012)

responsible to the concerned Ministries when they carry out risk management activities.

8.20 The data exchange and the functional flow between the FSSAI and the proposed NFSRAC are depicted in the figure given below:

Figure 23: Information flow in the proposed NFSRAC



Recommendation 7: Keeping abreast of new challenges and use of technology for ensuring food safety

8.21 Crowdsourcing initiative is potentially a very useful tool as a part of the big data by utilizing the crowd's data in shelf-life monitoring, inventory control, foodborne illness surveillance, identification of contaminated products and to improve food businesses' hygiene, enhance food safety, communication and allergen management and minimizing risk. The limitations include the number of reports and data generated may overwhelm the food industry or authority due to lack of internal resources i.e. time and technical expert to process the information. There is also risk of lack of crowd participation and loss of control(Soon and Saguy 2017). However, if a mechanism to facilitate, evaluate and process the data can be put in place, it can be a very good source of data for FSSAI.

8.22 Global megatrends including climate change, a growing and aging population, urbanisation, and increased affluence will create food safety challenges and place new demands on producers, manufacturers, marketers, retailers and regulators. Advances in science and technology such as whole genome sequencing, active packaging, developments in tracing and tracking technologies, information computing technology and big data analysis has the potential to help mitigate the challenges and meet demands, but will also create new challenges(King, Cole et al. 2017).

8.23 The management of food safety risks has been undergoing a quiet revolution as it adopts risk analysis approaches. This is stimulating a dramatic shift from qualitative, often non-transparent decision criteria to quantitative, fully transparent consideration of the science underlying food safety decisions and FSSAI should be at the forefront of this change.