

Bridging the Gap: Why On-Farm Food Safety is an Extension Imperative



In this blog, Manoj, Sreeja, and Satyapriya examine the need for on-farm food safety in India and outline how extension can respond.

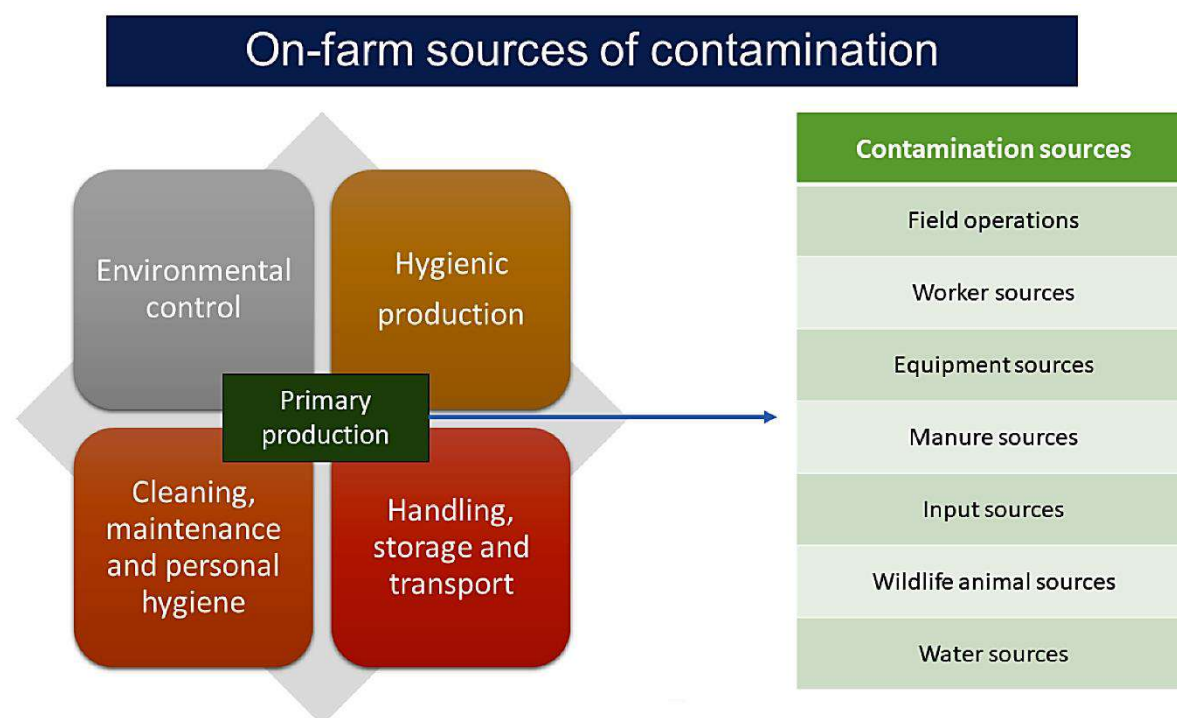
CONTEXT

Imagine a law that requires adherence to specific agricultural production standards, with legal consequences if farmers fail to do so. Is it possible for any nation to enact such a law? Yes, the USA passed the Food Safety Modernisation Act back in 2011. The law mandates actors involved in the farm-to-fork supply chain to follow safe food production practices, and at least one person from the farm must be trained, with exemptions for small-scale farmers. This law underscores the country's emphasis on food safety. However, in India, we don't have any such law or obligation for farmers to abide by the recommended practices.

WHY FOOD SAFETY?

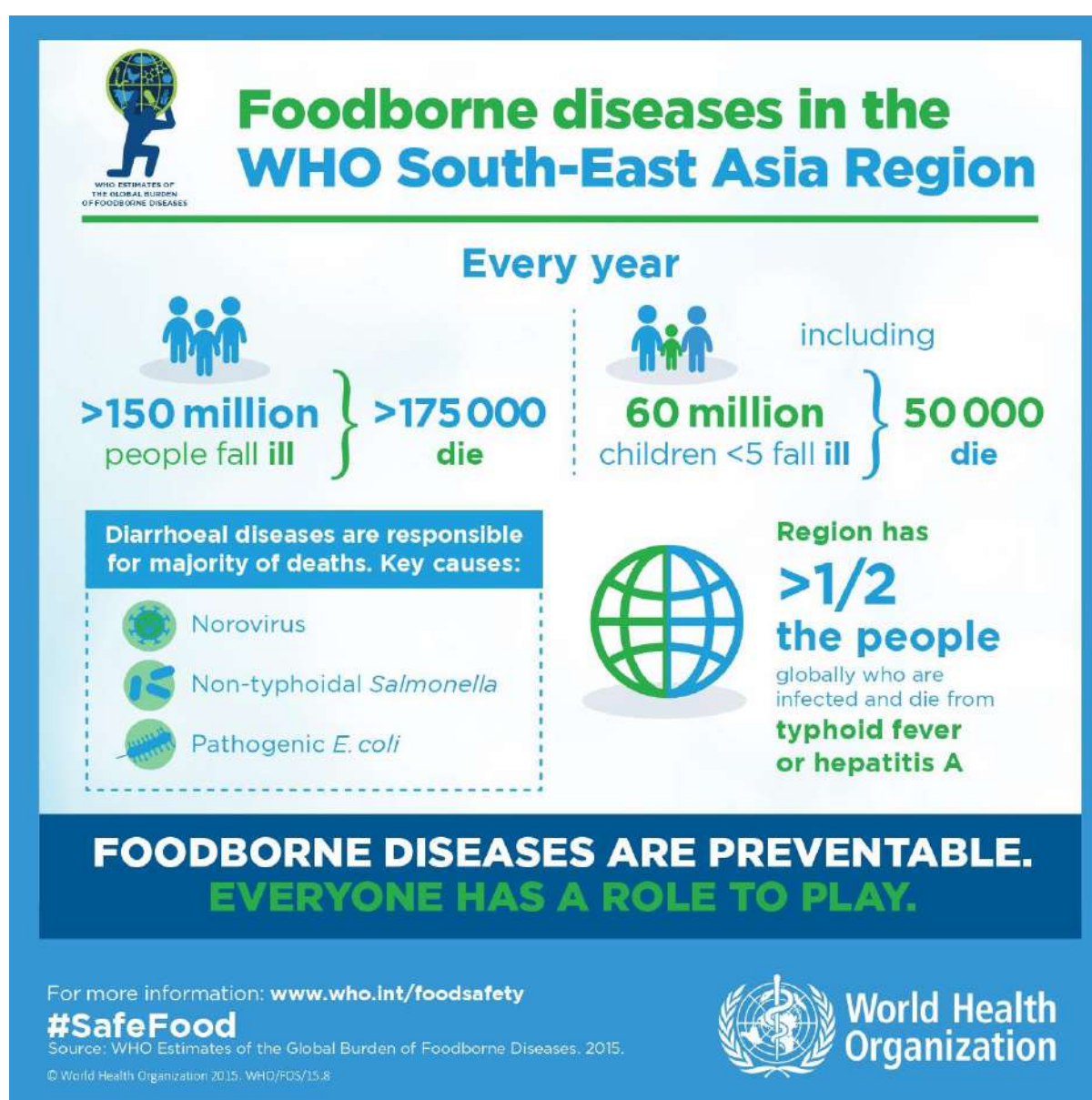
Ensuring safe food for consumers is the responsibility of actors involved in agriculture. Given the rising exports and shifting consumer preferences toward safe and nutritious food worldwide, it is essential to ensure that Indian farms produce safe food. However, the socio-economic landscape of Indian farmers, comprising mainly small and marginal landholding, makes it difficult to ensure food safety at the farm level.

Food safety in India is regulated by the [Food Safety and Standards Authority of India \(FSSAI\)](#) through the [FSSAI Act, 2006](#). However, the Act excludes primary producers, i.e., farmers. On searching the FSSAI rules 2011, we found that the words "farmer" and "agriculture" were given less emphasis. While explicit reasons for keeping farmers out were not discussed, a large farming population, fragmented



land holdings, low output produced per unit, and associated enforcement challenges could be the reasons. A farmer needs to comply with the act only if he/she is involved in activities such as processing, distribution, and selling. Due to this, presently, we cannot assure that the food produced by a farmer is safe.

Several instances of people getting ill because of the consumption of fresh food, i.e., any food with minimal or no processing and cooking, are reported. According to the Integrated Disease Surveillance Project of India, food-related outbreaks account for 16 per cent of total disease outbreaks in India. From 2009 to 2018, more than 150,000 people got ill, resulting in the death of 572 people due to foodborne illness. Grains and beans, fruits and vegetables, and dairy products are among the various categories that are the major sources of foodborne illness in the country.



The WHO South-East Asia Region has 10 Member States - Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Timor-Leste.

Under such a context, where the FSSAI's role in primary production is minimal, the onus falls on the agricultural department. However, currently, the role of extension personnel is limited to promoting government schemes and initiatives.

ROLES FOR EXTENSION PERSONNEL

Extension researchers and practitioners can play even higher roles in ensuring food safety. Some are indicated below.

Research – Availability of social science research on on-farm food safety (OFFS) practices is very scant in India, as revealed by our keyword searches on different databases. However, before the implementation of any strategies, it is necessary to get a baseline understanding of farmers' knowledge, attitudes, and skills (KAS) on safe food production practices. Also, multidisciplinary research on the risk assessment of food on the farm and risk communication strategies is necessary to provide evidence for policymaking.

Policy advocacy – Following the World Health Organisation's global strategy for food safety 2022-2030, extension personnel should advocate for policies that specifically address on-farm food safety. Inclusion of OFFS aspects under FSSAI provisions will provide the required impetus for further regulation and research.

Information, education, and communication (IEC) materials – Farmers require specific training on OFFS practices such as reading chemical labels, checking water quality, using personal protection equipment, and using the recommended dose of chemicals, etc. Research institutes, agricultural universities, NGOs, private companies, and KVKs can produce IEC materials on food safety to effectively communicate food safety-related information to farmers in local languages to address KAS gaps.

Farmers' needs assessment – Extension officers can assess the existing capacities and any discrepancies that are hindering farmers from following safe food production practices. The Bharat Good Agricultural Practices ([BharatGAP](#)) and India Good Agriculture Practices (IndGAP) manuals, which provide broad guidelines of GAPs for the majority of the crops, can be used for needs assessment by extension personnel. Academic studies assessing the knowledge and skills of farmers on such benchmark GAPs will reveal their needs.



Roles of extension personnel in enhancing on-farm food safety (Source: Authors' compilation)

Connecting farmers with premium markets – In India, certification schemes, BharatGAP and IndGAP, provide certification to farmers upon compliance with certain production practices. Given the voluntary nature of the scheme and farmers' lack of awareness, their adoption remains minimal. Extension officers can leverage the FPOs and FPCs to train farmers and enable certification. Extension officers can conduct market analysis and connect FPOs to wholesalers (business-to-business) and consumers (business-to-consumer) via the Open Network for Digital Commerce (ONDC).

Stakeholder consultations – Extension professionals can facilitate stakeholder consultations involving farmers, producers, traders, input suppliers, government agencies, civil societies, etc., in the farm-to-fork continuum. It should focus on various food control priorities, contaminants, and their health effects by creating a conducive platform for communication.

ENHANCING CAPACITIES OF EXTENSION PERSONNEL

Refresher training for extension personnel on safe food production practices will be very useful. One staff member in every KVK can be trained on OFFS practices so that they can inform and train other field-level extension functionaries and farmers in their respective areas.

Various educational resources to be well-informed on food safety priorities are available online (Box 1).

Box 1: Online resources on food safety

Codex Alimentarius standards – CODEX standards, principles, and guidelines published by FAO and WHO provide essential information on hygienic crop production practices.

WHO Global Environment Monitoring System – Food Contamination Monitoring and Assessment Programme (GEMS-Food) – Provides region-wise data on various food types and their contaminants based on random sample analysis. This information can be used to communicate to farmers the contaminants of great concern for specific crops grown in the region and strategies to prevent them.

FAO/WHO International Food Safety Authorities Network (INFOSAN) – The platform established by WHO in collaboration with FAO provides for rapid information sharing among member countries related to food safety crises. India is also a member country of INFOSAN with limited participation in the network. The platform provides information that can be of great use for extension personnel to advocate for policy changes.

FAO/WHO Food Control System Assessment Tool – The tool provides various indicators to assess a country's food control system and develop strategic plans to upgrade it.

International Code of Conduct on Pesticide Management: Guidance on Options for Reducing Risk when Phasing out Pesticides – This guidance document outlines strategies that can be used for strategically phasing out pesticides.

WAYS FORWARD

Extension personnel can thereby play roles in ensuring safe food from our farms. By fulfilling the above-mentioned roles, extension personnel can build a foundation for a safe food system that aligns with the WHO Global Strategy for Food Safety 2022-2030.

In conclusion, the role of extension personnel is pivotal in bridging the gap between scientific food safety principles and their practical application on farms, thereby safeguarding the food supply chain. Some of the specific recommendations for enhancing the role of extension personnel in the area of on-farm food safety are as follows:

1. Governments (both union and state) should consider involving extension professionals along with FSSAI in INFOSAN and the implementation of national food control systems.
2. MANAGE, as a trainer of trainers, can provide training for senior and middle-level extension functionaries of Extension Education Institutes (EElS), State Agricultural Management and Extension Training Institutes (SAMETIs), and Agricultural Technology Application Research Institutes (ATARIs) on food safety-related aspects. These EElS, SAMETIs, and ATARIs can further build the capacities of KVK staff and other state-level staff under their respective regions.
3. MANAGE and EElS can develop leaflets and audio-visual materials on safe production practices for farmers and manuals on farm food safety for extension functionaries.
4. We can seek technical assistance from international organisations such as CODEX Alimentarius and FAO for developing standards that are suitable for India.

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