people

food future foundation

Strengthen Traceability

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Actionable Area

Develop and implement a food tracing system in normal circumstances too for consumers to know the origin of the food product.

Issue

- Today's health & wellness-conscious consumers demand information on food freshness, storage & transportation conditions, food additives, etc. This puts an added responsibility on food businesses to provide easy access to trusted product information to consumers.

- Consumers' concerns about the methods of food production (organic, inorganic, genetically modified) have also increased now, which is primarily motivated by foodborne disease outbreaks and chemical contaminants. Hence, implementing 'farm to fork' traceability is an essential requirement under food safety. This is also mandated by FSS (Food Recall Procedure) Regulation 2017 for food businesses in India.

- Worldwide, the role of traceability as a means of enabling food safety is being increasingly acknowledged by industry and regulatory bodies. Vendor-neutral technologies & open standards that allow track & trace across food supply chains must be adopted by food businesses.

- A comprehensive study in India revealed that most businesses don't have an effective traceability system across their food supply chains. This could be attributed to the perceived cost of the infrastructure requirement, inadequate knowledge/awareness, and general apathy towards food safety. At best, most FBOs had only implemented a track & trace system up to one level down in their supply chain. Beyond this, no credible system existed till the food was sold/consumed.

According to a food regulator analyses during the year 2018-19

$30 billion - $40 billion
is annual estimated cost of food fraud

106,459
samples across India were tested out of which,

- **15.8%** food samples were sub-standard
- **3.7%** were unsafe,
- **9%** were mislabeled

Source: Report by Authentication Solution Providers' Association (ASPA) in 2020

- Supply chains today are incredibly complex and have evolved into worldwide inter-connected supply-and-demand networks with profound interdependencies. This leads to problems concerning food safety and quality, including food spoilage and wastage.

- A modern, coordinated approach to traceability reduces foodborne illness, builds consumer trust, and avoids overly broad recalls. Well-functioning traceability systems allow both public and private sector actors to verify that products meet market and/or regulatory requirements and to respond swiftly in the event of food safety breaches.

- Traceability technologies are essential for smallholder farmers, where they will help deliver the missing personalised farm advisory services based on farm input purchase and use. Tracing farm inputs from the factory floor to the farm will help reduce the chemical footprint in food production and antibiotic use in livestock.

- New technologies, such as blockchain and satellite imaging can strengthen traceability programmes and lead to better transparency and value across the supply chain. The application of such technologies comes with risks if common protocols and policies are not put in place.

- Traceability helps make much of what is currently “invisible” within our food systems “visible.” It could potentially facilitate comprehensive tracking of the environmental, economic, health, and social consequences of different agricultural production processes, even making it possible to calculate the “true cost of food.”

Status

- In recent years the Indian government has started engaging with private entities, state, and central government agencies like Food Safety and Standards Authority of India (FSSAI), Agricultural and Processed Food Products Export Development Authority (APEDA), Spices Board, GS1 India, ITC’s e-Chaupal, and Reliance industry, etc. for developing the traceability system within the Indian food supply chain. The GS1 standards facilitate unique and universal identification, capture, and share information on products and services, from point-of-origin to point-of-sale or dispensation. These standards are used in the barcoding of consumer items.

- APEDA had initiated the new electronics traceability system for Agro-food safety and emphasized applying the information technology in the traceability system for various farm produces. But currently, it is not mandatory for all farmers unless there is a requirement from export countries. APEDA provides laboratory testing and certification for export and helps track and trace information through its internet-based traceability software system. The e-Spice Bazaar is a unique project of the Spices Board to ensure traceability of Indian spice farmers in international markets and determine the quality and price of their products for export purposes. Traceability Project seeks to incorporate all commercial spices grown in the country, bring spice farmers in the global supply chain with identification of traceability at source, and generate direct linkage with exports to get a premium price. Started in the Prakasam and Guntur districts of Andhra Pradesh and Warangal and Khammam districts in Telangana, the project currently (2021) covers 52,000 chilli and turmeric farmers in these four districts.

Private Sector Initiatives

- Backward food traceability is useful in identifying suppliers and processes that have contributed to producing a particular product. The private sector is the main driver of traceability, and investments are typically motivated by consumer demands, risk mitigation, standards compliance, efficiency gains, or some combination of these incentives.

- TC has initiated Integrated Agri Extension Platform (IAEP) interventions for chilli in Andhra Pradesh. The intervention included digital crop and post-harvest advisory to farmers, technology intervention, and a market linkage for chilli. This has resulted in a 13% increase in chilli productivity, 8% improvement in grade out turns, thus, an additional realisation of Rs 23000/acre. OlamAgro traceability intervention in rice value chain in Haryana done for 500farmers. This has increased farmers' income by 12-15%, reducing cost by 15%, and increasing yield by 10%. In India, the food traceability market is increasing with the growing understanding of food safety among consumers and government authorities.

Vision 2030

- **A multipronged approach focused on applying emerging technology platforms on traceability across food-system & integration is needed to support transformation.**

- **Harmonised standards, ongoing technological development to drive down costs, a continued focus on robust economic models, and effective communication and training programmes are fundamental to scaling traceability.**

- **Introduce & scale-up of Technology-Driven Traceability system and supply chain transparency which would reduce food loss by 1-4%.**

Pathways

POLICY

Leveraging Farmer Producer Organisations (FPOs) to build incentives around training through policy and legislation to enable implementation.

Incentivise traceability and support adoption through policy incentives.

IMPLEMENTATION

Helping small-scale farmers/producers/primary producers at the farm side and Mandis to make the appropriate operational changes for complying with traceability requirements.

Retailers should ensure that their suppliers have systems and software in place for forward and backward tracing.

Align traceability system to real-time food safety & quality parameters.

Value-chain players will need to align on standards, including what data needs to be collected, how it must be collected, how it will be governed, and how it will be shared.

Conduct consumer education programmes on labelling & awareness programmes on traceability for all stakeholders.

Pathways

TECHNOLOGY

Integrate efforts like technology development/digitisation at farm level regarding digital infrastructure, data collection methodology, Internet of Things (IoT), Block-Chain, and others with initiatives of Ministry of Agriculture, which is working on the architecture of a national digital agristack.

Find solutions to overcome infrastructure gaps like electricity, internet facilities, etc. Simple mobile phones are much more widespread, and solutions adapting to this type of technology could be instrumental in overcoming near-term gaps.

Technology companies should develop clear, consistent, and globally harmonised standards for data collection, governance. Sharing them can potentially develop the transformative traceability technologies needed to reduce costs, improve delivery and maximise efficacy.