

India's Food Systems

Approach to be Reimagined



Arjun Shanker
*Center for Study of Science, Technology and Policy
(CSTEP)*



Figure 1: Food system aspects

In food, there is hope. September's United Nations Food Systems Summit, the first of its kind, brought many international players, including farmers and agricultural experts, together to re-emphasise the need to strengthen and improve food systems (*Figure 1 shows the various aspects of food systems*) across the globe for future transformative solutions. For India to address this issue, given the climate change constraints, there is a need to introspect its food systems.

Evolving food systems

Since the Indus Valley Civilisation, India has been an epicentre of food production and subsistence agriculture. The watershed Green Revolution (the 1960s) brought agri-mechanisation for more productive cereals. However, excess machine and fertiliser use, and the absence of effective crop rotation have rendered the land infertile and depleted groundwater, adding to the farmers' woes. As a result, India is examining alternative approaches—natural and organic practices, stressing cost-effective, chemical-free processes and indigenous knowledge, and robust scientific techniques and technologies to improve product quality without adversely impacting land resources. Besides curtailing water and energy use (as reported by the United Nations Environment Programme and leading agro firms), such farming approaches have garnered sufficient popularity from a consumption standpoint (as per the India Organic Food Market Report 2021). Moreover, they have triggered a more robust post-harvest practice—better market access and timely sale of produce—curbing crop rejection and surplus losses. However, these farming approaches are niche, given that only select farmers are adopting them, and the majority of farmers continue to suffer. Small and marginal farmer base constitutes more than 80% (PIB) of India's farming system. An all-inclusive food system is attainable only by roping in this farmer base, which is unaware of the government's agri-financing and infrastructure schemes and has

limited agricultural credit access. This is further derailed by the absence of credible business plans, forcing them to rely on middlemen and non-institutional financing sources.

Role of start-ups

Climate Finance Initiative's *State of Climate Finance in India* report estimates India's climate financing requirement (for 2030) at USD 910 billion (~INR 67 trillion)—agriculture (38%) and energy (33%). It also observes that agri-start-ups in India are key to driving forth India's food systems potential. These start-ups could aid in ramping up the agribusiness potential of farmer producer organisations, involving farming communities in conceptualising sustainable business plans for strengthening and transforming their food systems. Start-ups, through engaging with the government and NABARD (National Bank for Agriculture and Rural Development), are helping farmers realise their true potential through bank loans and adequate funding. Further, they can help create buyer-seller agreements and farm-product e-commerce linkages. Small and Medium Enterprises have garnered particular focus at the UN Food Systems Summit, and initiatives similar to the government's Initiative for Development of Entrepreneurs in Agriculture (IDEA) programme can unlock agri-preneurial potential and curb various ills, including the issue of rural-to-urban migration. However, start-ups face challenges of inadequate data, financial crunches, and limited collaborative measures with the government and prominent agribusiness companies.

Cooperation is key

With COP26 just a few days away, countries are pledging to deepen the sustainably transformative aspects of food systems—in sync with Goal #2, 'Zero Hunger', and linked 2030 SDG goals. Inclusive food systems could alleviate poverty by restoring jobs, ensuring safer and more nutritious consumption, and help address climate risks of resource depletion.



The Government of India's traction towards strengthening India's food system network is evident from co-operative agreements such as the INDO-ISRAEL Agricultural Project Centres of Excellence and the UK-India joint statement on sustainable agriculture, and September being declared a Poshan Maah (nutrition month) under the flagship Poshan Abhiyaan Mission. A holistic approach to strengthening and improving the farm-to-fork system could be achieved by engaging with appropriate actors—private players and research and policy-centric organisations. They can aid the government in developing micro or miniature models suitable for specific farmer challenges, such as strengthening value addition, stable market linkages, improved post-harvest technologies, tracking supply chain bottlenecks, and addressing crop diseases, besides macro-level policy decisions. Such models help reflect the risk and contingencies specific to niche climatic vulnerabilities and estimated crop damage/losses. In addition, this provides an opportunity to involve India's extensive network

of non-governmental organisations and civil societies to educate rural segments, and enable them to evaluate their cropping portfolios, and focus on regenerative greener agriculture with a focus on nutrition. This is aligned to India's proposal to the United Nations to have 2030 as the *Year of Millets*, and recognises the necessity of a balanced and nutritious diet, as enabling farmers to cultivate traditional crops along with commercial ones to generate consistent cash flows will help realise it.

With an Agri 4.0 looking to reduce farming inefficiencies in future, the design of a comprehensive food systems roadmap can prove a potential game-changer with 'nine harvests' left till 2030 (as per the UN Sec-Gen's address) if various players and aspects of food production are given due consideration.

The author works in the area of Strategic Studies at the Center for Study of Science, Technology and Policy (CSTEP), a research-based think tank.