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Government of India

Green Innovation Centres for the Agriculture and Food Sector (GIC) - India

Promoting innovations for a sustainable future in the Indian potato, tomato, and apple value chains

Context

About half of India's population is engaged in the agriculture and food sector. Horticulture plays a pivotal role, contributing about 33% of the agriculture Gross Value Added. India is also the second-largest producer of horticultural crops globally, accounting for 17.4% of the global vegetable production and 11.3% of fruit production in 2021.

Farmers are confronted with multi-dimensional problems, such as climate change, post-harvest losses, fluctuating market prices, lack of technical knowledge on good agricultural practices, and a decline in pollinator populations. The global programme 'Green Innovation Centres for the Agriculture and Food Sector (GIC) in India' has been focusing on identifying and scaling innovations that enhance the productivity and income of smallholder farmers and small-scale farming enterprises, promoting good agricultural practices, and supporting development of Farmer Producer Organisations. In this way the project lays the groundwork that allows farmers to adopt agroecological practices and contribute to the transformation towards sustainable and climate-resilient food systems.

Our approach

GIC is part of the Special Initiative 'Transformation of Agricultural and Food Systems' (SI AGER) by the German Federal Ministry for Economic Cooperation and Development (BMZ), and implemented in 14 countries in Africa, in India and in Viet Nam.

Project name	Green Innovation Centres for the Agriculture and Food Sector – India
Commissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ)
Project region	• Himachal Pradesh: Shimla and Kullu district • Maharashtra: Aurangabad, Ahmednagar, and Pune district • Karnataka: Chitradurga, Chikmagalur, and Hassan district • Andhra Pradesh: Chittoor district
Lead executing agency	Ministry of Agriculture and Farmers' Welfare (MoA&FW), Government of India
Duration	2014 – 2025

In India, the project disseminates innovative solutions in the potato, tomato and apple value chains. It addresses common challenges such as the occurrence of pests and diseases, volatile prices, storage constraints, and promotes climate-smart sustainable agriculture practices.

The projects's approach to innovations follows four steps:

1. From idea to innovation: Viable innovations are identified in a participatory and decentralised way, e.g. in Participatory Technology Development (PTD) plots.
2. Understanding innovations: Relevant actors of the value chains are trained to implement the innovations.
3. Up-scaling innovations: Interest groups, such as Farmer Producer Organisations, actively roll out innovations.
4. From innovation to mainstream: Innovations are widely adopted by the target groups.

Left to right: GIC works with apple farmers in Himachal Pradesh, and tomato and potato farmers in Maharashtra, Karnataka, and Andhra Pradesh.

Page 2 left and centre: Trainings in canopy management and promoting indigenous bee species are some of the key activities in the apple value chain.

Page 2 right: Manje Gowda is a potato farmer in Karnataka who has benefitted from the Rooted Apical Cutting technology, promoted by GIC India.



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Our goals

The support to Farmer Producer Organisations and the promotion of Good Agricultural Practices lays the groundwork for the agri-food systems transformation and introduction of agroecological practices.

1. Training for 139,000 farmers on Good Agricultural Practices to increase productivity and income by 30%.
2. Identifying business potential along the value chains to create employment opportunities and support agri-preneurs.
3. Establishing sustainable economic relationships between farmers, and retailers/wholesalers.
4. Initiating the transformation towards sustainable food systems by incorporating agroecological principles.

Our activities

- Building the capacities of Farmer Producer Organisations.
- Sustainable capacity building on Good Agricultural Practices and anchoring through Training of Trainers.
- Development and promotion of innovation bundles in model farms to enhance farmers' climate resilience and foster the transformation towards sustainable agri-food systems.
- Promotion of pollination by indigenous bees as an ecosystem service and sustainable beekeeping activities for diversifying income opportunities for farmers.
- Training for farmers and development of innovative business models on post-harvest loss (PHL) management solutions that reduce PHL across the value chain.
- Promoting decentralised seed potato production and cold storage for economic empowerment of farmers.

Our achievements

- More than 140,000 individuals participated in trainings across all promoted value chains, of which 33% were women and 31% were young people.
- More than 2,300 additional jobs created, over 50% of them for women and youth.
- 46% of the supported enterprises operating in the value chain improved atleast three business performance indicators such as income, investments, and business relationships.
- Developed manuals on Good Agriculture Practices for potato and tomato value chains in Karnataka and Maharashtra in collaboration with government partners.
- 2,500 women entrepreneurs in Andhra Pradesh have adopted solar drying solutions which promote food processing and mitigate post-harvest losses.
- 20 FPOs across all project states have been promoted and supported with capacity development measures.
- Annually, over 20,000 tCO_2e direct mitigation and over 73,000 tCO_2e of indirect mitigation of greenhouse gas emissions achieved, benefitting 121,000 individuals with climate adaptation benefits.

Small cuttings - Big impact

"I own a nursery where I produce seedlings of various crops. Through the low-cost local seed potatoes via the innovative Rooted Apical Cuttings (RAC) technology, I was able to use four given tissue culture bottles for trials. With these few tissue culture plants, we were able to multiply 16,000 plants. Last kharif season I planted 500 'K. Himalini' RAC plants in my polyhouse and got 75–80 kg (about 6 tons/acre) seed potatoes. The crop is very good. We gave our plants also to neighbouring farmers and they are growing potatoes successfully. That's why I encourage other nursery owners to take up this activity and help more farmers. As compared to other seeds, there are fewer crop diseases with the new technology and I am expecting to double the yield. Initially, people were unsure about the new seeds. But after seeing the success, they are asking for more seeds."

- Manje Gowda (pictured top right), Hassan district, Karnataka

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