MANAGE Agricultural Extension "Evening4Learning (E4L)" Webinar Series

Theme: "Community Sustainable Extension Systems"

Topic: "Community Extension Approaches for Value Chain Development: Experiences from Satellite Incubation"

Schedule:
27-08-2024, 19:00-20:30 PM

MANAGE - Center for Agricultural Extension Innovations, Reforms and Agripreneurship (MANAGE- CAEIRA)
National Institute of Agricultural Extension Management (MANAGE)
Rajendranagar, Hyderabad- 500 030, INDIA

About the Program

The MANAGE Agricultural Extension "Evening4Learning" Webinar Series is aimed at enhancing knowledge and professional engagement in the field of agricultural extension. The four day series is structured with each day focusing on a distinct topic under a common theme, allowing participants to gain comprehensive insights into key areas of extension. The programme is intended for a diverse audience, including postgraduate and doctoral students, agricultural faculty, and industry professionals. It covers broad themes ranging from entrepreneurship and sustainability to emerging technologies in agriculture.

Speaker

Dr. P. Sethuraman Sivakumar
Principal Scientist
ICAR-CTCRI
pssivakumar@ctcriabi.org.in

P. Sethuraman Sivakumar

About the Speaker

Dr. P. Sethuraman Sukumar is a Principal Scientist and In-charge of Technology Commercialisation and the Agri-Business Incubator at ICAR–CTCRI, Thiruvananthapuram. His areas of expertise include technology commercialization, business incubation, agripreneurship development, nutrition-sensitive extension, and market linkage. He has led several research and development initiatives related to tuber crops, seed systems, value addition, consumer behaviour, and the scaling up of biofortified crops.

Changing Context of Indian Agriculture

Indian agriculture is undergoing a significant transition characterized by:

- A shift from food security-oriented agriculture to specialized and nutrition-sensitive agriculture
- Changing food consumption patterns, with increasing demand for nutritious and processed foods
- Climate change impacts on agriculture and livestock systems
- Persistent malnutrition despite India being a leading producer of agricultural commodities
- The need for more effective extension and facilitation systems

Agricultural extension must evolve beyond conventional advisory roles to become a facilitation-oriented and innovation-driven system.

Challenges in Agricultural Extension

The major challenges include:

- Low extension worker-to-farmer ratio
- A large number of vacant extension posts
- Low farmer share in consumer prices
- Limited efficiency of investments in agricultural extension
- Inadequate market linkage systems
- Weak convergence among institutions
- Increasing complexity arising from climate change, nutrition insecurity, and market uncertainties

Community-Based Extension

Community-Based Extension (CBE) is a participatory approach that places local communities at the centre of development initiatives with the objective of improving livelihoods, productivity, quality of life, and sustainability. In this approach, community members actively participate in the planning, implementation, and evaluation of development activities aimed at addressing local needs and challenges. The approach encompasses interventions such as infrastructure development, watershed management, local governance, and community empowerment.

CBE is commonly implemented through community-led institutions such as Self-Help Groups (SHGs), Farmer Interest Groups (FIGs), and Farmer Producer Companies (FPCs). These groups are formed, owned, and managed by the community, while external agencies such as NABARD, ATMA, and Community-Based Organizations (CBOs) provide facilitation and technical support. Regular interaction between farmers and Community-Based Extension Mechanisms (CBEMs) has been found to enhance the adoption of improved crop varieties, integrated pest management practices, soil health management, and water-saving technologies. By strengthening local capacities and encouraging collective action, CBE enables communities to take ownership of their development and promotes the sustainable adoption of innovations and improved practices.

“Three Cs” in Community-Based Extension

Competence

Emphasis is placed on developing the necessary skills and knowledge among stakeholders. This includes technological proficiency, effective communication strategies for diverse audiences, value chain networking, and facilitation skills required for successful extension activities.

Convergence

The approach encourages the integration and coordination of efforts and resources among various stakeholders, including host organizations, mentoring institutions, and farming communities. Such collaboration promotes shared ownership and collective commitment.

Consolidation

Institutionalization of extension activities is considered essential to ensure continuity and long-term sustainability. This helps community-based systems function independently beyond project periods, thereby supporting sustained community-driven development and innovation.

Examples of Community-Based Extension

Rural Resource Centres (RRCs) of Cameroon

These centres function as training and demonstration hubs managed by grassroots organizations operating outside the formal extension system. Established under local organizations with dedicated management teams, RRCs provide a range of services to farming communities, including access to technological inputs such as seeds and seedlings, capacity building of resource farmers, sharing of technical information and support services, and facilitating market linkages. This model demonstrates how locally managed institutions can effectively strengthen extension delivery by being farmer-oriented, participatory, and responsive to local needs.

Farmer Field Schools (FFS) and Farm Business Schools (FBS)

Both are examples of community-based extension approaches developed by FAO. These models aim to strengthen farmers’ capacities—FFS focuses on improving farming operations, while FBS emphasizes establishing and managing farm enterprises. Farmer Field Schools are field-based and follow the natural cycle of crops, livestock, soil, or other enterprises, using participatory methods such as group discussions, comparative field experiments, and agro-ecosystem analysis.

In contrast, Farm Business Schools are designed to create profitable and pro-poor farm businesses by promoting innovation in marketing, enterprise development, and pre- and post-harvest technologies. FBS also seeks to empower both men and women farmers, build trust and collaboration among value chain actors, and contribute to sustainable livelihood improvements for targeted households.

Satellite Incubation Centre (SIC)

The Satellite Incubation Centre (SIC) is a decentralized, value chain-oriented agri-business incubation model designed to address location-specific and crop-specific challenges. Unlike conventional incubators that operate from university or research campuses, SICs function directly within production and value chain locations, enabling closer engagement with farmers, rural entrepreneurs, and local institutions. SICs act as "miniature business incubators" established at the state or district level in identified crop value chains.

Their primary focus is to promote entrepreneurship by addressing value chain bottlenecks through localized incubation, mentoring, and institutional support.

Institutional Framework

The SIC operates through a formal institutional system established via Memoranda of Understanding (MoUs) among:

- Agricultural Universities
- Krishi Vigyan Kendras (KVKs)
- Non-Governmental Organizations (NGOs)
- Other local institutions involved in the crop value chain

The overall mentoring and technical guidance for SICs are provided by the ICAR–CTCRI Agri-Business Incubator, Thiruvananthapuram, which acts as the nodal mentor organization.

Purpose of Establishing SIC: Value Chain Incubation

Most Agri-Business Incubators (ABIs) in the country are campus-based, and their services are primarily oriented toward startups operating close to research institutions. However, the value chains of many important crops are geographically distant from these campuses, resulting in limited outreach and unresolved field-level challenges

Key Issues with Conventional Incubation Models

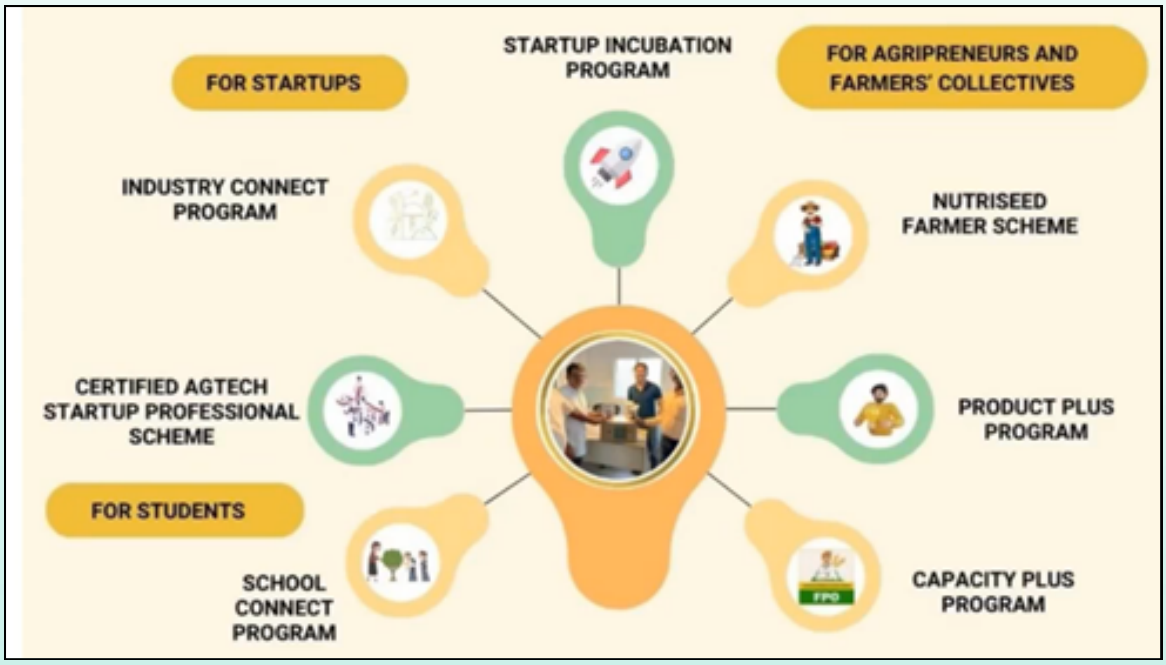
- Agri-Business Incubators are predominantly campus-based
- Crop value chains are often located far from incubators and research institutions
- Incubation services mainly focus on startups, with limited engagement at the grassroots level
- On-campus incubation is expensive, restricting scalability
- Many value chain-specific problems remain unaddressed, especially those faced by farmers and rural entrepreneurs

Role of SIC in Value Chain Incubation

- The SIC model overcomes these limitations by:
- Bringing incubation services closer to the field and farming communities
- Addressing crop- and location-specific value chain constraints
- Promoting entrepreneurship among farmers, rural youth, and women's groups
- Providing cost-effective and decentralized incubation support
- Strengthening last-mile linkages among research, extension, and enterprise development

Value chains covered by SIC

Incubation services by SIC



Key Interventions and Programmes Implemented by SICs

A. Technology Development through Agricultural Innovation System Approach

Commercialization of Arrowroot Ladoo

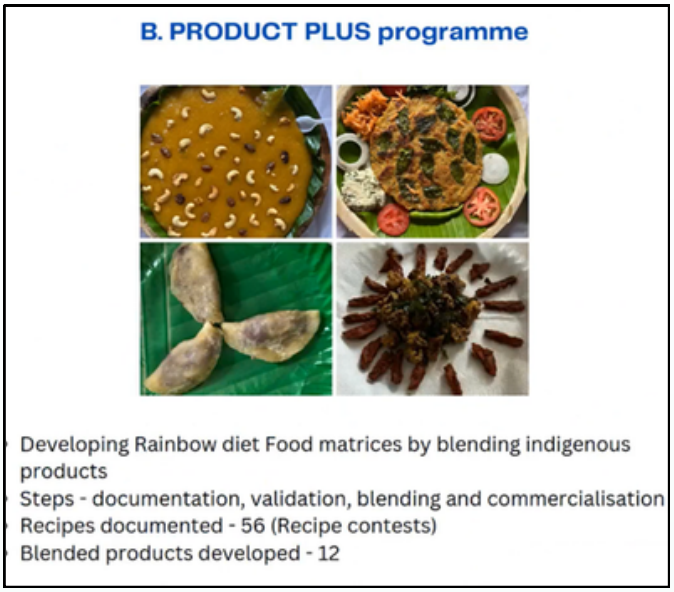
The startup Oditribe Private Limited from Odisha worked on the GI-tagged traditional product Palua Ladoo, which holds cultural importance among tribal communities in the region. Earlier, the product was prepared using low-quality methods with limited standardization. Through a formal collaboration with a research organization, the enterprise improved the product's quality, processing methods, and standardization. This initiative transformed the indigenous GI-based product into a successful business venture and facilitated its entry into international export markets.

Commercialization of Kunbi Muduli

Kunbi Muduli is a traditional taro-based food widely consumed by tribal communities in the Uttara Kannada region. Recognizing its potential, Spudnik Farms Private Limited developed a variety of value-added taro products and established a processing unit within the tribal area, creating a self-sustaining local enterprise. Through formal collaboration in product development and effective extension support, these products were successfully introduced into broader markets.

Innovative promotional activities, including tuber crop festivals in Bengaluru, a sadya-style meal prepared entirely from tribal tuber crops, and tribal diversity fairs, helped position these products among urban and upper-middle-class consumers as well as international audiences. The initiative has also secured multiple rounds of international funding, demonstrating the significance of integrating extension services with entrepreneurship and market-oriented approaches.

B. PRODUCT Plus Programme



This programme systematically documents and validates indigenous and ethnic food recipes, integrates them with modern nutrition science, and transforms them into market-ready, value-added products. Initiatives such as COOKATHON and recipe contests capture traditional tuber-based preparations and creatively blend them with biofortified and nutritionally enhanced crops, resulting in innovations such as millet-based momos filled with orange-fleshed sweet potato. The documented recipes are refined, reformulated, and positioned for commercialization.

C. Nutri-Sensitive Extension

The scheme aims to establish a network of farmers engaged in the production of quality planting materials and tubers through formal buyback arrangements with ICAR–CTCRI and associated startups. Nutri Seed Villages function as dedicated seed production hubs for the large-scale multiplication of biofortified sweet potato, rice, millets, wheat, vegetables, and other nutrient-rich crops to address malnutrition.

Under this initiative, the Satellite Incubation Centres (SICs) selected ten Nutri Seed farmers from each village to participate in the incubation programme.

D. School Connect Programme

The programme promotes health and nutrition awareness while fostering early entrepreneurial thinking among students by engaging them in the cultivation of biofortified crops through school and home nutrition gardens. Students are empowered as “Nutrition Warriors” and advocates of healthy food choices.

Under the 3M-SP programme, each student receives three vines of biofortified sweet potato (yellow-, orange-, and purple-fleshed), cultivates them at home, and returns the harvested tubers after 100 days, thereby linking nutrition education with experiential learning and innovation.

E. E-Farm Business School on Biofortified Sweet Potato

This programme was initiated to develop a sustainable value chain for biofortified sweet potato through the integration of production, value addition, and utilization. The programme focuses on facilitating and training farmers in production practices, value addition, and household consumption of biofortified sweet potato as part of value chain development.

Implemented in a village in Attapadi, the initiative involves ten farmers cultivating orange-fleshed varieties such as Bhu Sona, Bhu Kanti, and Bhu Ja, along with the purple-fleshed variety Bhu Krishna. The programme also emphasizes market linkages through startups and other government agencies, while enrolment is facilitated through the Satellite Incubation Centre at RARS, Pattambi.

Key Highlights

- Community-Based Extension (CBE) as a participatory and farmer-centric approach that strengthens livelihoods, productivity, sustainability, and local empowerment through collective action and institutional support.
- Satellite Incubation Centres (SICs) act as “miniature business incubators” functioning directly within crop value chains to address location-specific challenges, promote agripreneurship, and strengthen last-mile linkages among research, extension, and enterprise development.
- Successful commercialization initiatives such as Arrowroot Ladoo and Kunbi Muduli demonstrated how traditional tribal foods can be transformed into value-added products through incubation support, technology intervention, and market linkage.
- Innovative interventions such as Nutri Seed Villages, PRODUCT Plus Programmes, and School Connect initiatives integrate nutrition, biofortified crops, entrepreneurship, and experiential learning.
- The SIC model focuses on mentoring farmers, rural youth, women groups, and startups through training, Entrepreneurship Development Programmes (EDPs), institutional convergence, and technical guidance from ICAR–CTCRI.

Interactive discussion

1. What is the specific role of the incubation center, and how are the Satellite Incubation Centers (SICs) operationalized in terms of staffing, service delivery, and ensuring equitable coverage for beneficiaries across categories such as General, SC, and ST?

The SICs function as miniature incubators addressing value chain challenges through entrepreneurship development. After selecting the host organization, CTCRI signs a formal agreement and supports operations through funds converged from multiple projects, including incubation, TSP, Northeast programmes, and technology commercialization.

One or two staff members from the host institution are appointed as nodal officers, and both they and local farmers receive training from CTCRI on tuber crop technologies, cultivation practices, and Entrepreneurship Development Programmes (EDPs). Schemes for specific beneficiary groups function within a broader institutional framework, where CTCRI uses a standard quarterly assessment proforma to monitor training and input distribution.

2. What role can an SIC play in supporting an agri-startup based in a completely rural area with limited major players and challenges in establishing a supply chain?

The SIC model functions effectively even in highly remote areas. Distance-related challenges are addressed through partnerships with local bodies, which support technical dissemination and coordination with the SIC Nodal Officer. Even when the Principal Investigator is based at CTCRI, programmes across states are remotely monitored and guided.

Overall, the SIC system operates as a mentoring ecosystem. Similar to a parent company supporting a franchise, it provides initial infrastructure, training, and continuous guidance, enabling the host institution to function independently, retain revenue, and access diverse funding streams.

YouTube link:
https://youtu.be/jO06RoPC5Vs?list=PL6mI4tMrzHzTHqX8i3oQ6o-B4Pfc5gPQs&t=1

E4L Report Prepared by:
Dr. Vavilala Priyanka, MANAGE Fellow
Ms. Aswathi S Nair, MANAGE Intern