

MANAGE Agricultural Extension "Evening4Learning (E4L)" Webinar Series

Topic: "Community-Based Agricultural Extension for Farmer Empowerment: Experience from Center for Sustainable Agriculture"

Schedule:
24-11-2022, 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 twelve-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 program 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. G. V. Ramanjaneyulu

Founder and Executive Director

Centre for Sustainable Agriculture

Ramanjaneyulu G V

About the Speaker

Dr. G. V. Ramanjaneyulu is the Founder and Executive Director of the Centre for Sustainable Agriculture (CSA), Hyderabad. An agricultural scientist with a Ph.D. from the Indian Agricultural Research Institute (IARI), New Delhi, he has over two decades of experience in promoting agroecology, organic and natural farming, and sustainable agricultural livelihoods. He has contributed to scaling up Non-Pesticidal Management (NPM), community-managed sustainable agriculture, Farmer Field Schools and Community Resource Person-based extension systems. His initiatives include the Kisan Mitra farmers' helpline, Sahaja Aharam Producer Company for farmer-led marketing and value addition, Kisan Business School for FPO capacity building, Farmer Service Centres, FPO Hub for digital enterprise management, and e-Krishi Pestoscopefor pest and disease diagnostics. His work also encompasses farmer collectivisation, rural enterprise development, organic certification, digital advisory services, agricultural policy research and market linkages to improve farmers' incomes and strengthen ecologically and economically sustainable farming systems

Introduction

The Centre for Sustainable Agriculture (CSA) is an organisation working to promote ecologically sustainable agriculture, strengthen farmer institutions and improve farmers' livelihoods through integrated extension and advisory services. Its initiative, Kisan Mitra, aims to provide comprehensive support to farmers in transitioning towards sustainable agricultural practices, organising themselves into collectives, establishing market linkages and improving price realisation.

CSA operates across several states in India, with a major presence in Andhra Pradesh and Telangana and additional work in Maharashtra. It collaborates with government programmes, development organisations, Farmer Producer Organisations (FPOs) and community institutions to deliver agricultural extension, input supply, market linkage and livelihood support services.

The organisation works with approximately one lakh farmers, of whom 25,000–30,000 have transitioned to fully organic farming, while around 75,000 are in the process of transition. In addition to promoting sustainable agricultural practices, CSA supports FPOs in institutional development, business management, access to resources and market integration. Its approach emphasises locally appropriate solutions, community participation and the development of sustainable service delivery systems that enable farmers to make informed decisions and improve their livelihoods.

Journey of CSA

CSA began its journey in 2004 and has evolved through nearly two decades of field experience, experimentation and institutional learning. Its work demonstrates a gradual shift from promoting individual agricultural practices to developing comprehensive, community-managed extension systems that integrate production, livelihoods, farmer collectivisation and market access.

The initial phase focused on Non-Pesticidal Management (NPM), using Farmer Field Schools (FFSs) to help farmers understand crop ecosystems and manage pests without chemical pesticides. The approach subsequently expanded to community-managed sustainable agriculture, with trained farmers serving as community resource persons to provide last-mile extension services.

As the organisation gained experience, it recognised that improved crop production alone was insufficient to enhance farm incomes. Farmers also required support in livestock management, non-farm livelihoods, input supply, credit, insurance, processing and market linkages. This led to the promotion of FPOs and the development of institutional mechanisms for aggregating produce and delivering services.

CSA further expanded its approach by establishing FPO support networks, farmer service centres, digital advisory platforms, soil testing facilities and local bio-input enterprises. The development of the FPO Hub platform represents a further step towards integrating these services and making extension systems economically viable beyond the duration of individual projects.

The journey of CSA highlights the importance of learning from field-level experiences, strengthening community institutions and combining agricultural knowledge with appropriate services, technology and market-oriented interventions.

Core Approaches of CSA

CSA follows a holistic, farmer-centred approach that recognises the diversity of agricultural production systems and the socioeconomic conditions of farming households. Rather than promoting a uniform package of practices, it identifies locally suitable solutions, tests them under field conditions and facilitates their wider adoption.

The major approaches include:

- **Ecological agriculture:** Promoting soil health, moisture conservation, crop diversity, locally adapted seeds and ecologically based pest and disease management.
- **Household-centred livelihoods:** Treating the farming household as the unit of intervention by integrating crop production, livestock and non-farm income-generating activities.
- **Community-managed extension:** Training practising farmers as community resource persons (CRPs) to provide locally relevant technical guidance and strengthen last-mile service delivery.
- **Farmer collectivisation:** Organising farmers into FPOs and federations to improve input access, aggregate produce, undertake value addition and strengthen bargaining power.
- **Knowledge-based extension:** Moving beyond information dissemination towards building farmers' knowledge, analytical skills and decision-making capacities.
- **Digital integration:** Using mobile applications, pest surveillance, weather information and digital platforms to improve the accessibility and timeliness of agricultural advisory services.
- **Institutional sustainability:** Developing service enterprises and revenue-generating mechanisms to ensure continuity of extension services beyond the project period.

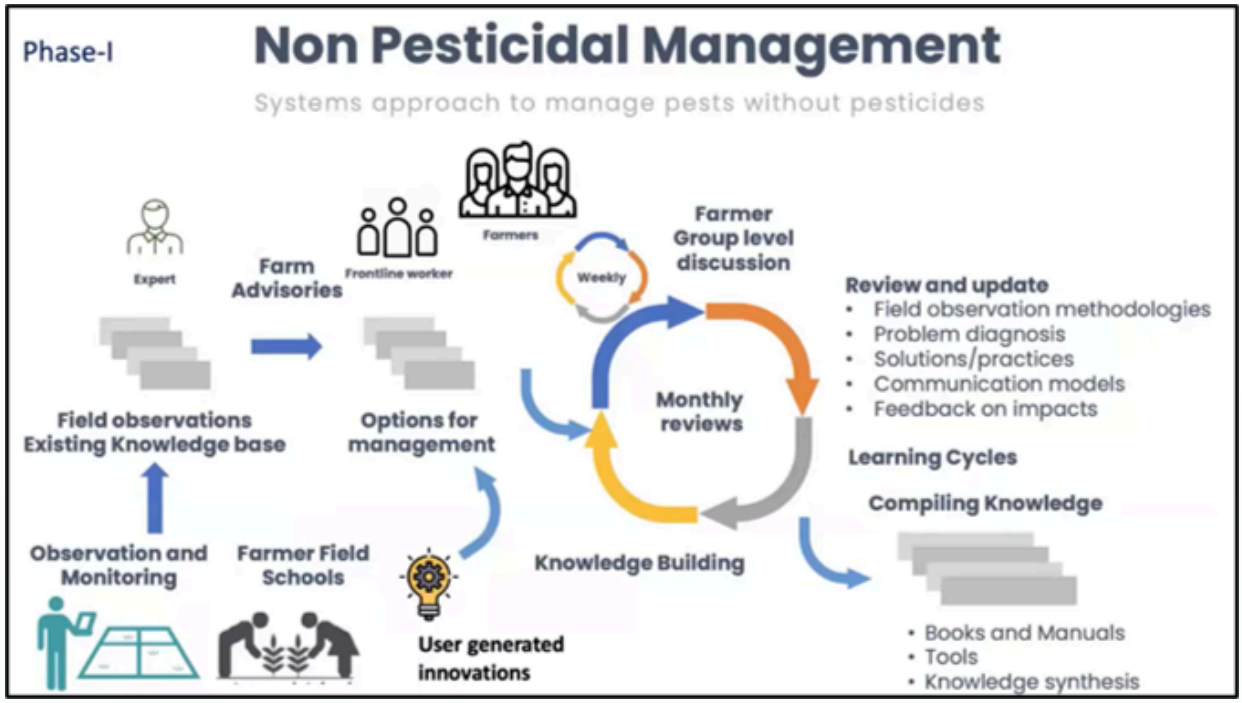
CSA emphasises that the transition towards sustainable agriculture requires continuous handholding, access to resources, diagnostic support and forward market linkages. Its approach integrates ecological sustainability with economic viability and institutional accountability.

Phase I – Non-Pesticidal Management (NPM)

The initial phase of CSA's work focused on Non-Pesticidal Management (NPM), an approach that enables farmers to manage crop pests without using chemical pesticides. The intervention was implemented through Farmer Field Schools, where farmers met regularly to observe crop conditions, identify pest and disease problems, discuss field experiences and plan appropriate management practices for the following week.

The Farmer Field School approach encouraged experiential learning rather than dependence on external recommendations. Farmers developed the capacity to understand crop ecosystems, monitor pest populations and make decisions based on field observations throughout the cropping season.

Women's self-help groups played a significant role in implementing community-managed sustainable agriculture initiatives in Andhra Pradesh. Trained farmers and community resource persons facilitated learning and provided technical support to other farmers.



Phase II – Farmer Producer Organisations (FPOs)

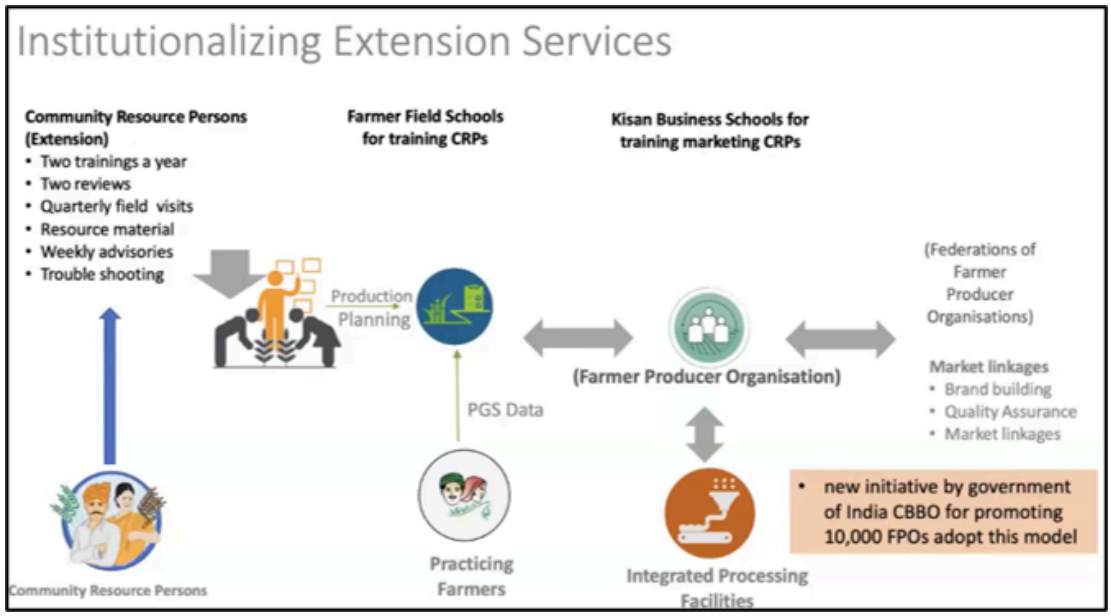
Building on the experience of community-managed extension, CSA recognised that agricultural sustainability requires both effective last-mile delivery of services and efficient first-mile aggregation of farm produce. Although farmer groups could facilitate the dissemination of knowledge, individual farmers continued to face challenges in accessing markets, obtaining quality inputs and negotiating better prices.

To address these constraints, CSA promoted Farmer Producer Organisations as institutional platforms for collective action, service delivery and market integration.

CSA directly implements programmes with approximately 65 FPOs and provides institutional and technical support to around 150 additional FPOs in Andhra Pradesh and Telangana. Its support covers institutional development, governance, extension services, input supply, market linkages and business development.

The major functions of FPOs include:

- Aggregating agricultural produce to improve market access and bargaining power.
- Facilitating access to quality seeds, bio-inputs and other agricultural inputs.
- Providing custom hiring services and access to farm machinery.
- Supporting credit, insurance and access to government entitlements.
- Facilitating processing, value addition, certification and quality assurance.
- Establishing market linkages and improving farmers' price realisation.



CSA also emphasises that FPOs require continuous professional support to operate as viable institutions. Rather than expecting each organisation to independently develop every technical and managerial capability, CSA facilitates linkages with specialised institutions and service providers.

This approach helps FPOs concentrate on farmer services and business development while accessing external expertise wherever necessary.

Kisan Business School

CSA developed the Kisan Business School approach to strengthen the business management capacities of farmers and FPOs. The initiative recognises that collective mobilisation and agricultural production knowledge alone are insufficient to ensure the commercial sustainability of producer organisations.

The programme adopts a participatory, problem-solving and experiential learning approach. Training is designed around the specific challenges faced by farmers and FPOs in a particular cluster, rather than following a uniform training package.

Participants identify the major constraints affecting their businesses, including storage, processing, dependence on intermediaries, market access and price fluctuations. They then explore possible solutions and learn how to implement them through practical exercises and field-based activities.

The approach includes season-long learning and exposure to relevant business and cooperative management practices. It helps participants understand the relationship between production decisions, market demand, business planning and profitability.

CSA also emphasises that not every farmer is necessarily an entrepreneur and that business competencies need to be developed systematically. Kisan Business School therefore supports FPOs in identifying viable business opportunities, strengthening managerial capacities and developing sustainable service delivery models.



FPO Federation: Support Services for Producer Organisations

CSA's experience indicates that individual FPOs often lack the financial and technical capacity to independently provide the full range of services required by their members. To address this limitation, CSA promotes federations, networks and shared service platforms that enable producer organisations to access specialised support.

The federation approach facilitates collective access to resources, technical expertise, infrastructure and markets. CSA undertakes backward linkages with service providers so that FPOs do not have to independently approach multiple organisations to obtain the services they require.

Major areas of support include:

- **Extension and advisory services:** Technical guidance, training and crop-specific recommendations.
- **Input services:** Access to seeds, bio-inputs and other agricultural inputs through local and external suppliers.
- **Business development:** Identification of viable crops, value addition opportunities and suitable markets.
- **Infrastructure**: Access to processing, storage, soil testing and other shared facilities.
- **Certification and quality assurance:** Assistance with appropriate certification, traceability and market requirements.
- **Institutional management:** Support for governance, legal compliance, financial management and reporting.
- **Market linkages:** Connections with buyers, processors, retailers and other producer organisations.

CSA also promotes collaboration among FPOs for seed production, input supply and value addition. For example, one FPO may supply seeds to another, creating a more integrated and locally responsive production system.

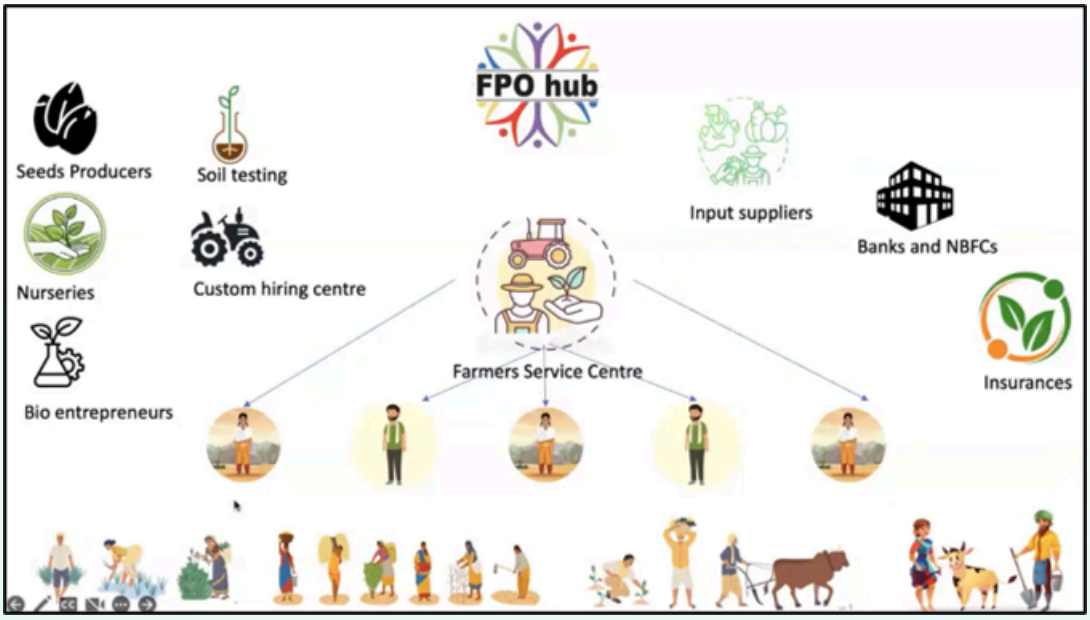
The federation model helps reduce duplication of services, improve resource utilisation and build an ecosystem in which producer organisations can access the support required for long-term sustainability.

Phase III – FPO Hub Platform

The FPO Hub represents CSA's effort to institutionalise agricultural support services and ensure their continuity beyond the typical three-to-five-year project period. The approach is based on the understanding that FPOs need a reliable ecosystem of technical, financial, commercial and institutional services to remain viable.

The FPO Hub integrates services provided by CSA with those of other organisations, service providers and commercial entities. It seeks to connect FPOs with a common network of resources rather than requiring each organisation to establish independent arrangements for every service.

The platform supports institutional management, member databases, quality management, financial records, inventory management, processing activities, sales, customer relationship management and e-commerce. Its enterprise resource planning (ERP) facilities also assist with accounting, tax reporting, audit documentation and donor-specific reporting.



The FPO Hub further supports the aggregation of FPOs into clusters, shared infrastructure and common facilities. This enables organisations to pool resources, access specialised services and strengthen their collective market presence.

CSA's broader objective is to develop an ecosystem in which FPOs are not merely implementing agencies for projects but become integral institutions in farmers' livelihoods. By combining institutional support, digital systems and revenue-generating services, the FPO Hub seeks to improve the operational efficiency and long-term sustainability of producer organisations.

Farmer Service Centers

Farmer Service Centers are local access points through which farmers can obtain multiple agricultural inputs and support services. They are designed to bring essential services closer to farming communities while linking village-level demand with a wider network of suppliers and technical institutions.

The centres operate through community resource persons, local entrepreneurs, FPOs and other service providers. Their activities include:

- Agricultural training and advisory services.
- Supply of seeds and locally produced bio-inputs.
- Soil testing and crop-specific recommendations.
- Access to farm machinery through custom hiring services.
- Linkages with credit, insurance and other financial services.
- Market information, produce aggregation and buyer connections.
- Facilitation of access to government schemes and entitlements.

The centres are digitally connected to the FPO Hub and other advisory systems, enabling them to access information, coordinate training and manage transactions. Farmers can also obtain inputs through the platform, with CSA reporting that members may receive discounts of approximately 20–30% on selected inputs.

An important feature of this model is its emphasis on financial sustainability. While training and advisory services may require public or institutional support, services such as input sales, custom hiring and marketing can generate revenue. CSA indicated that margins of approximately 3–5% across relevant service activities could contribute to meeting the operating costs of the service system.

The Farmer Service Center model therefore combines community-based extension with local entrepreneurship and integrated service delivery.

Soil Test-Based Organic Transition Strategies

CSA emphasises that the transition towards organic and ecological agriculture should be guided by scientific assessment rather than generalised recommendations or isolated practices. Soil testing is used to understand soil nutrient status and chemical properties and to develop appropriate strategies for improving soil health.

The soil testing facilities assess relevant soil parameters and provide recommendations for agricultural management. Based on the results, farmers and supporting organisations can identify suitable practices for improving soil fertility, correcting soil-related constraints and reducing dependence on external inputs over time.

The approach also recognises that agricultural practices must be adapted to local soil conditions, cropping systems, climatic factors and resource availability. CSA works with rural entrepreneurs to operate soil testing units and provide services to individual farmers, organisations and larger agricultural programmes.

Soil test-based strategies support evidence-informed decisions and help avoid the assumption that a single organic input or farming practice is suitable for every situation. They also provide a scientific foundation for monitoring changes in soil properties during the transition towards sustainable agriculture.

Biolabs

CSA promotes decentralised bio-input production through local enterprises that manufacture biofertilisers and other biological inputs for agricultural use. The objective is to improve farmers' access to affordable inputs, reduce dependence on distant suppliers and create rural livelihood opportunities.

Under this model, essential inoculums are prepared centrally and supplied to local entrepreneurs, who multiply the biofertilisers using relatively small-scale facilities. CSA reported that establishing such a basic unit could cost approximately ₹40,000–₹50,000, depending on the setup.

The local production model helps reduce transportation and distribution costs while enabling farmers to access inputs closer to their villages. CSA cited the example of certain microbial biofertilisers, including Pseudomonas, which were reportedly made available to farmers at less cost compared with market prices



The organisation also links local bio-input production with Farmer Service Centers and community resource persons, enabling farmers to access both inputs and the technical guidance needed for their use.

The Biolab initiative illustrates how agricultural extension can extend beyond technology dissemination to the development of rural enterprises. By combining technical knowledge, decentralised production and local distribution, the model aims to strengthen input accessibility, affordability and the economic sustainability of farmer support systems.

eKrishi – Simplifying Complexities in Agriculture

CSA has developed eKrishi, a digital platform intended to integrate agricultural support services and simplify access to information for farmers and FPOs. The platform connects different components of the agricultural service system, including advisory services, input access, institutional management and other support functions.

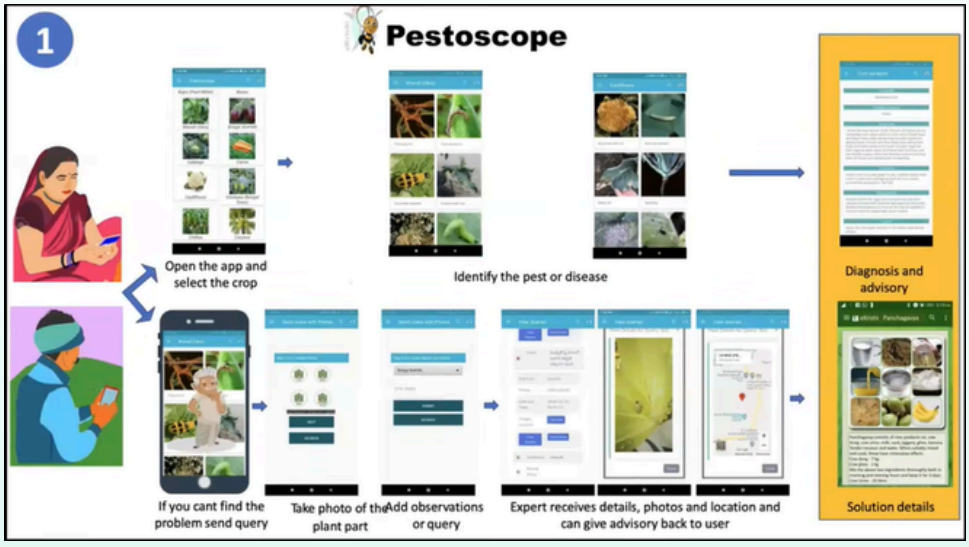
Digital tools enable farmers and extension personnel to access relevant information and coordinate services more efficiently. The platform also supports the collection and management of field-level information, which can inform agricultural planning and improve the responsiveness of advisory systems.

Through digital integration, CSA seeks to connect village-level Farmer Service Centers, community resource persons, FPOs and specialised service providers. This reduces fragmentation and enables information generated at the field level to be linked with broader knowledge and support networks.

The wider significance of eKrishi lies in its potential to combine digital infrastructure with community-based extension. Rather than treating technology as a standalone intervention, the model uses digital systems to strengthen existing institutions and improve the delivery of locally relevant agricultural services.

Pestoscope and Crowdsourcing Data

Pestoscope is a digital tool developed by CSA to support the identification and management of crop pests, diseases and weeds. It enables farmers and extension personnel to identify common field problems through crop-specific information and visual references.



When a farmer encounters a pest or disease that cannot be identified independently, a photograph can be submitted through the application for further assessment. The system can associate the submission with location information and relevant contextual data, including soil and weather conditions, to support more informed diagnosis and advisory services.

CSA also uses a crowdsourcing approach to collect field-level information through farmers, FPO staff, community resource persons and Farmer Field Schools. This information contributes to a broader understanding of pest and disease occurrence across locations and seasons.

The major components of this approach include:

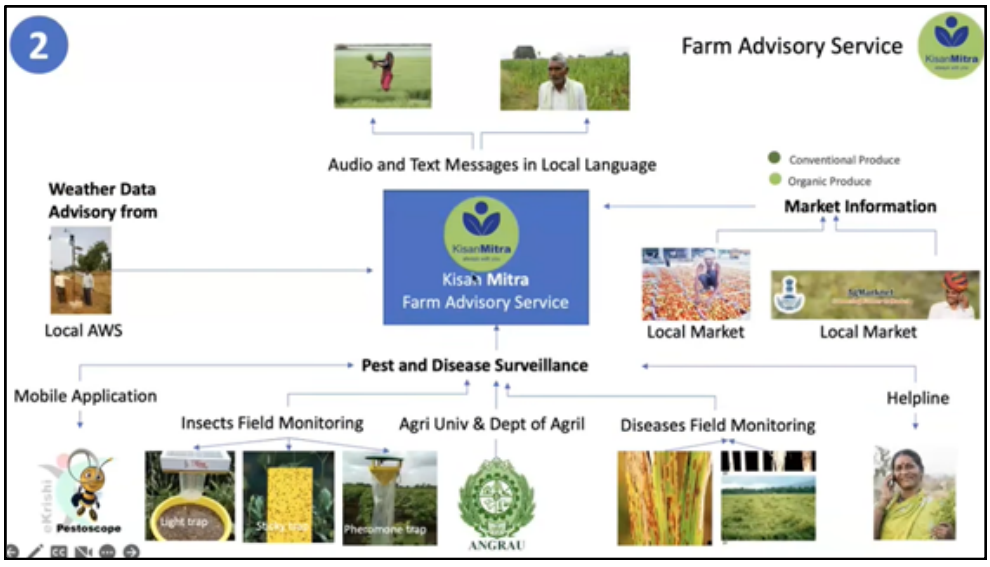
- **Field-level identification:** Helping farmers recognise pests, diseases and weeds.
- **Diagnostic support:** Enabling farmers to submit photographs when identification is difficult.
- **Village-level surveillance:** Monitoring pest and disease incidence through designated local systems.
- **Crowdsourced information**: Collecting observations from multiple locations to identify emerging patterns.
- **Predictive potential**: Combining weather records and pest incidence data to improve seasonal monitoring and develop more timely advisories.

CSA is also operating a farmer helpline from 8:00 a.m. to 8:00 p.m., providing an alternative for farmers who cannot access digital applications.

The approach demonstrates how digital technology and participatory data collection can strengthen agricultural surveillance and make extension services more responsive to field conditions.

Kisan Mitra – Farm Advisory Service

Kisan Mitra is CSA's integrated farm advisory initiative, designed to provide farmers with timely, accessible and locally relevant information and support. It brings together agricultural extension, weather information, market information, pest and disease surveillance, input access and other services required for effective farm management.



The advisory system draws on weather stations, field observations, village-level surveillance and digital platforms. Information is communicated to farmers through audio messages, text messages and other accessible channels. Advisory information is also displayed on village notice boards and walls, extending its reach beyond farmers with direct access to digital devices.

The system supports farmers in making decisions related to crop management, pest and disease control and agricultural operations. Information collected from Farmer Service Centers, community resource persons and farmers also helps CSA identify emerging field problems and develop more context-specific advisories.

Kisan Mitra further links agricultural advice with access to government schemes and entitlements. CSA compiles information on relevant programmes and assists farmers in addressing difficulties in accessing benefits. The initiative therefore extends beyond crop production to include broader livelihood support.

The service illustrates CSA's emphasis on integrating information, knowledge, diagnostic support and institutional linkages. By connecting digital advisory mechanisms with community-level service delivery, Kisan Mitra aims to strengthen farmers' decision-making capacities and support the transition towards sustainable agriculture.

Key Highlights

- **Evolution of Community-Managed Extension:** The Centre for Sustainable Agriculture (CSA), established in 2004, evolved from promoting Non-Pesticidal Management (NPM) through Farmer Field Schools to an integrated extension system combining sustainable agriculture, livelihoods and market access.
- **Promotion of Ecologically Sustainable Agriculture:** CSA promotes soil health, crop diversity, locally adapted seeds and ecological pest management. Its community-based approach supports farmers in adopting sustainable practices through experiential learning and continuous technical guidance.
- **Strengthening Farmer Producer Organisations (FPOs):** CSA directly implements programmes with approximately 65 FPOs and provides institutional and technical support to around 150 additional FPOs, focusing on governance, business development, input supply, value addition and market linkages.
- **Capacity Building through Kisan Business School:** The initiative adopts participatory and experiential learning to strengthen the business management skills of farmers and FPOs, enabling them to identify viable business opportunities, improve profitability and develop sustainable service delivery models.
- **Integration of Digital Technologies in Extension:** Platforms such as eKrishi and Pestoscope facilitate digital advisory services, pest and disease identification, crowdsourced field information and timely agricultural recommendations. Kisan Mitra integrates weather, market and crop advisory services with community-level support.
- **Decentralised Agricultural Service Delivery:** Farmer Service Centres and local biolabs improve access to agricultural inputs, soil testing, farm machinery and technical advice while creating rural entrepreneurship opportunities and reducing farmers' dependence on distant suppliers.
- **Financial and Institutional Sustainability of Extension:** Through the FPO Hub, FPO federations and revenue-generating service models, CSA seeks to ensure the continuity of agricultural extension beyond project periods by integrating technical expertise, digital systems, shared infrastructure and market-oriented services.

Interactive Session

1. What key lessons did CSA learn from its initial extension approaches, and how did these experiences lead to changes in its service delivery model?

CSA initially found that while the first 10–20% of farmers could adopt sustainable agricultural practices relatively easily, extending adoption to the entire village was challenging. The organisation realised that farmers differ in their willingness to take risks and adopt innovations, and that training alone was insufficient to achieve large-scale adoption. To address this challenge, CSA developed a comprehensive support system that included local enterprises, accessible agricultural inputs, mobile-based advisory services and market linkages. This approach helped increase the proportion of farmers transitioning to sustainable agriculture from around 15% to nearly 85–95% in some villages. Another important lesson was that extension services often discontinue when project funding ends, even though farmers continue to require technical support. Since individual FPOs cannot afford to employ multiple specialists, CSA adopted a hub-based model in which experts, including soil scientists and extension professionals, provide shared services to multiple FPOs. These experiences led CSA to move from a training-centred approach towards an integrated, service-oriented extension model that promotes wider adoption, continuous technical support and institutional sustainability.

2. Why has chemical-based agriculture achieved widespread adoption, while sustainable and organic farming practices often face challenges in reaching a larger proportion of farmers?

The widespread adoption of chemical-based agriculture and the limited expansion of sustainable farming practices need to be understood from the perspective of both input sales and farmers' adoption behaviour. According to CSA, if the focus is primarily on selling agricultural inputs, it may be relatively easy to expand market reach. However, achieving a complete transition in farming practices is more challenging because farmers differ in their willingness and ability to adopt innovations.

Even in conventional agriculture, only around 10–15% of farmers may follow recommended practices efficiently, while others use selected inputs, sometimes without assessing their suitability or economic viability. CSA's experience highlights that promoting sustainable agriculture requires more than making inputs available; it requires continuous support, appropriate advisory services and a comprehensive approach that enables farmers to adopt and sustain improved practices.

YouTube Link:
https://youtu.be/C8NjUqmpxXE?t=1

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