MANAGE Dialogue 2026

International Workshop on the Future of Agricultural Extension and Advisory Services

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About the Publication

This publication is result of the discussions held during the MANAGE Dialogue 2026, a three-day International Workshop on the Future of Agricultural Extension and Advisory Services conducted by the National Institute of Agricultural Extension Management (MANAGE), Hyderabad from February 24-26, 2026 to bring together policymakers, researchers, NGOs, FPOs, extension professionals, practitioners, students, youth, and women to reflect on emerging challenges and opportunities in agricultural extension and advisory services, and to collectively shape strategic directions for building resilient, inclusive, and future-ready extension systems.

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Disclaimer

This report has been prepared based on the sessions and interactions conducted during the workshop. The views expressed in the document are not necessarily those of MANAGE but are the workshop participants' own.

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(An Autonomous Organization of Ministry of Agriculture and Farmers Welfare, Govt. of India)

Rajendranagar, Hyderabad – 500 030, Telangana, India

Contents

Where Extension Stands Today and Where Must It Go Next ?

Agricultural extension and advisory services play a critical role in promoting sustainable farming, improving rural livelihoods, and supporting inclusive growth. In today's complex and rapidly evolving agri-food systems, extension has moved beyond the traditional role of technology transfer. It now encompasses climate-smart practices, natural resource management, nutrition, risk reduction, and social well-being, while also connecting farmers to services, innovations, and markets. This transformation calls for flexible, multifunctional approaches and new competencies among extension professionals to address diverse and dynamic challenges.

At the same time, agricultural extension stands at a point of contradiction. Despite decades of investments, innovations, and institutional expansion, farmers continue to face persistent challenges uncertain incomes, weak market linkages, and limited access to reliable support systems. This raises a fundamental question: is extension failing farmers, or has it failed to evolve with their realities?

The system today is more pluralistic than ever, with public institutions, private players, startups, and civil society all engaged in extension. Yet, this diversity has not translated into effectiveness. Instead, fragmentation, weak coordination, and a persistent gap between what is discussed and what is practiced continue to define the system. Convergence is widely spoken about, but rarely experienced on the ground.

The MANAGE Dialogue 2026 was convened against this backdrop not to repeat familiar narratives, but to question them. Bringing together diverse actors across the extension ecosystem, the dialogue challenged existing assumptions and pushed for a rethinking of extension beyond technology dissemination.

A recurring theme across discussions was clear: farmers do not lack information, they lack systems that work. Extension continues to focus on delivering advisories, while farmers struggle with markets, risks, and livelihoods. At the same time, extension systems themselves remain under-recognized, under-communicated, and often disconnected from policy priorities.

The dialogue called for a fundamental shift from fragmented efforts to coordinated systems, from input-centric approaches to livelihood outcomes, and from working for farmers to working with them. It emphasized that the future of extension lies not in more tools or technologies, but in building trust, enabling entrepreneurship, strengthening institutions, and demonstrating real impact.

This document captures these reflections, debates, and emerging directions, presenting a candid account of where extension stands today and where it must go next.

Key Guiding Questions

- Is extension still relevant, or has it failed to keep pace with farmers' realities?
- Are we solving farmers' problems, or just implementing schemes?
- Are farmers truly at the centre of extension or just at the receiving end?
- Is digital extension empowering farmers, or widening existing inequalities?

- Why do we keep talking about convergence when fragmentation is the reality?
- Are we delivering technologies, or actually improving farmer incomes?
- Is extension a solution provider or has it become part of the problem?
- Why does extension continue to seek funding without proving its impact?

Themes

- Reimagining Agricultural Extension in a Changing World
- Digital and Data-Driven Extension
- Extension Education, Capacity Building and Knowledge Linkages
- Market-Oriented and Entrepreneurship-Focused Extension
- Agri and Fisheries Startups: Innovations, Technology and Services
- Policy, Governance, and Financing of Extension Systems

An Exciting System or a Disappointing Reality?

The opening remarks set the tone by reflecting on the current state of agricultural extension systems. Despite the presence of multiple actors and an increasingly pluralistic landscape, the system continues to remain fragmented with limited coordination across stakeholders.

Since the 1990s, public extension systems have faced growing criticism, while newer approaches and technologies have added complexity without clearly translating into benefits for farmers. Persistent gaps were noted in terms of weak farmer linkages, inadequate support systems for FPOs, and the disconnect between discussions on convergence and its actual implementation.

The need for moving beyond a purely public extension approach was emphasized, highlighting the importance of involving NGOs, civil society organizations, and practitioners. The dialogue was thus envisioned as a platform to bring diverse actors together to collectively rethink and reorient extension systems.

Agricultural extension, with its diverse and pluralistic actors, is expected to be an exciting and dynamic field

Ideally, it should function as an innovation driven and well-coordinated system across contexts

However, the current state of the pluralistic system remains disappointing

Accountability, capacity, attitude and skill gaps exist among the pluralistic actors

Convergence is talked about, but not practiced

- Saravanan Raj
MANAGE

Reimagining Agricultural Extension in a Changing World

Who is a Farmer by Definition – The One Who Owns the Land?

Agricultural extension has changed significantly over time. The earlier linear model of information flow from extension agents to farmers is no longer relevant. Climate has become increasingly unpredictable, livelihoods are more diversified, and the profile of farmers is changing. This raises important questions about who needs extension today, what kind of support they need, and how they access it. With men migrating due to climate-related risks, women are taking on greater responsibility in managing farms, livestock, and households.

Gender and social differentiation, climate change, and investing in people emerge as central to rethinking extension. Even though a large share of the agricultural workforce is women, they are often not recognized as farmers due to land ownership definitions, which limits their access to services and benefits.

We should stop treating gender as a targeting problem. We should stop thinking of climate as a technical problem

Farmers have more knowledge than we have; they are not empty vessels waiting to be filled,how we blend our knowledge with their knowledge is important

Co-creation and proper diagnosis are important

- Ranjitha Puskur
IRRI

Is There a Paradigm Shift in Extension, or Does the Old One Still Persist?

Agricultural extension has long been guided by the diffusion of innovation paradigm, particularly the linear model of technology transfer. Despite significant changes in the agricultural landscape, extension continues to be largely viewed as the dissemination of technologies from research to farmers.

Over time, this linear model has been increasingly challenged. Innovation is no longer seen as coming from a single source, but as a result of interactions among multiple actors. The role of extension is therefore expanding beyond technology dissemination to facilitating innovation processes, knowledge exchange, and collaboration.

The extension system today includes a wide range of actors such as the public sector, private companies, NGOs, agri-business firms, and farmer organizations. However, the contribution of these actors is not always adequately recognized within the system.

At the same time, several new challenges including climate change, market dynamics, sustainability concerns, and digital transformation require extension systems to adapt. Yet, there is limited policy-relevant research, weak documentation, and insufficient efforts to learn from emerging practices, which restricts the evolution of extension systems.

We have moved a lot beyond the earlier paradigm, but extension is still seen as dissemination of technologies. This paradigm continues to dominate extension practice

The myth of linear technology transfer still influences extension, even though many changes are happening in the field

Policy-relevant extension research and documentation are needed

- Rasheed Sulaiman
CRISP

Can Extension Truly Reach Farmers at Scale?

Farmers today face multiple and overlapping risks, including climate variability, pest and disease outbreaks, rising input costs, and volatile market prices. At the same time, access to reliable and context-specific advisory services remains limited.

The existing extension system, though important, is constrained by capacity, with a high extension agent-to-farmer ratio and slow adaptation to rapidly changing conditions. Gender gaps and the digital divide further limit access to information, especially for women and marginalized farmers.

Digital tools and AI-based solutions are emerging as opportunities to address these challenges by providing real-time, personalized, and location-specific advisory services. Approaches such as video-based extension and AI-powered platforms are reducing costs, increasing reach, and improving adoption of practices. The shift is towards making extension more accessible, interactive, and responsive to farmers' needs, while also strengthening their decision-making and agency.

The extension system is overstretched, with a high farmer-to-agent ratio

Gender gaps and digital divide continue to limit access

Digital and AI tools can provide real-time, personalized advisory

New approaches are making extension more scalable, cost-effective, and responsive

- Aniruddha Brahmachari
Digital Green India

Dialogue Insights

* *Fragmented digital ecosystem reflects a lack of system integration*
* *New systems like Bharat Vistaar may initially be static but can evolve, creating space for parallel systems and future collaboration.*
* *The proliferation of tools will lead to natural consolidation based on sustainability, not forced standardisation*
* *Accountability depends on clear roles, monitoring systems, transparency, and feedback, not just incentives*
* *Farmer feedback and system transparency are critical for strengthening accountability*
* *Convergence requires active coordination, continuous interaction, and shared goals among actors*
* *Achieving convergence depends on flexibility and alignment with farmer needs, not just discussion*

Digital and Data-Driven Extension

Can AI Replace Human Extension Advisors?

AI has the potential to provide scalable, real-time, and localized advisory support, especially in contexts where human extension systems are limited. It can offer continuous access to information and personalized recommendations to farmers.

However, agricultural advisory is not only about providing information. It involves understanding context, asking the right questions, interpreting incomplete information, and building trust through interaction. Human advisors bring social and cultural understanding, empathy, and the ability to respond to nuances that AI systems currently struggle to capture.

Extension is deeply embedded in social processes such as dialogue, observation, and relationship-building. While AI can support quick diagnosis and improve access to knowledge, it cannot fully replace the human elements of advisory services. A combined approach, where AI supports and augments human advisors, is seen as more effective.

The need for inclusivity and skill development was also evident, as digital tools may exclude certain groups if not designed carefully. Strengthening the capacity of extension professionals to work alongside AI becomes important in this evolving landscape.

Extension is a social process, not just a technical service
AI should act as an enabler, not a replacement for human advisors
A hybrid model (AI + human) is more effective

There is a need for capacity building and inclusive design in digital extension

- Kristin Davis
IFPRI

Are We Addressing Farmers' Real Needs or Just Implementing Schemes?

There is a gap between what extension systems are doing and what farmers actually need. Extension officers are largely focused on implementing schemes announced at higher levels, but this does not always address the real challenges faced by farmers on the ground.

Farmer-to-farmer learning was presented as an effective and proven approach, where knowledge is shared through experience, local context, and peer networks. Such approaches are more demand-driven and relevant to farmers' realities. Strengthening these horizontal learning systems requires linking farmers with institutions and creating platforms that support knowledge exchange. Digital tools can play a role in enabling this process, but they need to be integrated with community-based systems and local institutions to be effective.

Agricultural extension officers are implementing schemes announced in the budget, but are not addressing the actual problems in the system or what farmers really need
Farmer-to-farmer learning is a strong and proven approach
Farmers need to be empowered with knowledge and skills, not just information

Linking farmers with institutions is critical for effective extension

- Rengalakshmi Raj
MSSRF

Are We Really Listening to the Last Mile?

Digital tools, particularly AI-based methods, can help capture real-time feedback from farmers and frontline workers, making advisory services more responsive and context-specific.

The use of AI-enabled interviews and feedback systems showed that when farmers and community workers are given space to share their experiences, it leads to better understanding of constraints, improved planning, and more responsive implementation. Feedback loops, where information is collected, analysed, and shared back with communities, help in refining interventions.

At the same time, challenges such as institutional delays, lack of coordination, gender constraints, and limited support systems affect participation and effectiveness. Strengthening advisory systems requires not just technology, but continuous engagement, trust-building, and integration with local institutions.

There is a gap between policy and ground realities due to weak coherence
Digital tools can help capture real-time feedback from the last mile
Listening to farmers and frontline workers improves planning and implementation

Feedback loops can lead to more responsive and adaptive systems

- Suchiradipta Bhattacharjee
IWMI

Why Do Digital Innovations Remain Pilots Instead of Systems?

There are many digital innovations and pilot initiatives in agricultural extension, but they are not being effectively mainstreamed or scaled. Instead of repeatedly creating new pilots, there is a need to rethink the role of public and academic institutions.

Supporting agri-entrepreneurs and startups can help in scaling innovations and adding value to the extension system, creating a more sustainable and effective approach. There is a visible shift in extension, with agri-startups playing a significant role by providing diverse services and not just transferring technologies but also generating solutions. However, we are not celebrating this visible shift.

Many digital innovations exist, but they are not being scaled or mainstreamed
Extension continues to rely on repeated pilot approaches
Supporting agri-startups and entrepreneurs can strengthen the system
There is a shift in extension, but it is not being recognized enough

Startups are not just business entities but also innovating in technology, market linkage and services

- Saravanan Raj
MANAGE

Dialogue Insights

* *Digital extension is not limited by technology, but by its ability to integrate with human systems and farmer realities*
* *Fragmented digital innovations reflect a lack of system-level integration and scalability*
* *Startups are emerging as key actors, but their success depends on solving real, context-specific problems*
* *Agriculture's diversity limits one-size solutions, requiring localized and adaptive approaches*
* *Academic systems continue to prioritize employment over entrepreneurship, constraining innovation ecosystems*
* *Building innovation requires experiential learning, risk-taking, and acceptance of failure*
* *Learning from failure remains under-documented, limiting collective learning and system improvement*

Extension Education, Capacity Building and Knowledge Linkages

Are We Valuing the Knowledge of Extension Practitioners?

There is a clear gap between theory and practice in agricultural extension. Extension practitioners deal with complex, real-time challenges and generate valuable insights through their experience, yet much of this knowledge remains undocumented and unrecognised.

A mismatch exists between how practitioners generate knowledge through field experience and how institutions recognize knowledge through formal research and publications. As a result, practical insights are often overlooked, while academic research may remain disconnected from field realities.

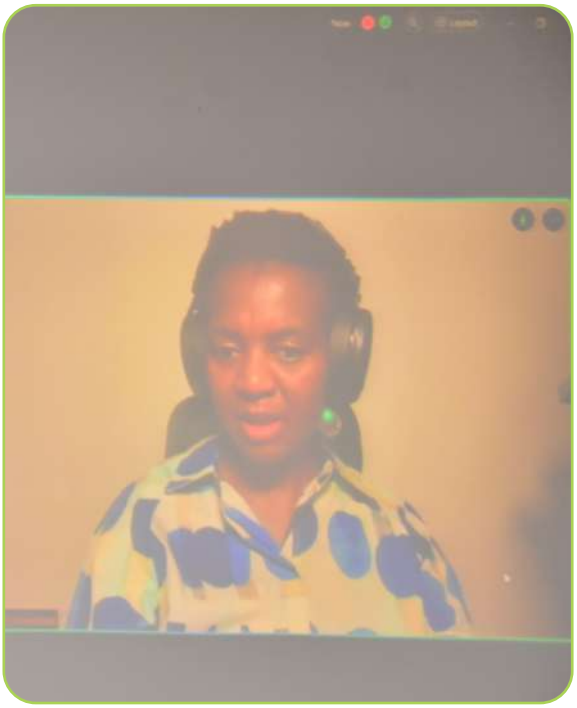
Much of the knowledge created during implementation through experimentation, adaptation, and decision-making remains invisible within systems that are largely driven by compliance and reporting. There is limited space for reflection, learning, and capturing process knowledge.

The idea of "wearing scientific goggles" presents a way for practitioners to see their everyday work as a source of knowledge, encouraging reflection, documentation, and stronger linkages between practice and academia.

Extension practitioners generate valuable knowledge through experience, but it remains unrecognized
There is a gap between practice-based knowledge and academic validation
Much of the implementation knowledge remains invisible and undocumented
Systems are driven by compliance rather than learning
There is a need to capture process knowledge, not just outcomes

Practitioners should be seen as knowledge creators, not just implementers

- Hlamani Ngwenya
University of Free State



Are Women Farmers Being Recognized and Empowered?

Women form a major part of the agricultural workforce, yet they continue to face structural and social barriers. Limited land ownership, lack of recognition as farmers, and restricted access to credit, markets, and extension services affect their ability to benefit from agriculture.

They play a central role in farming, household nutrition, and livelihoods, but their contributions often remain invisible within formal systems. Agriculture continues to be a low-income and vulnerable sector despite their continuous efforts.

The SEWA model approaches farming as an enterprise and treats farmers as entrepreneurs. It works with 3.7 million members across 20 states. The model is built on four pillars: organizing and capacity building, access to inputs, financial services, and market linkages with value addition. It includes training in sustainable farming practices, digital financial literacy, enterprise management, and use of ICT tools for advisories.

Initiatives such as the RUDI network enable women to engage in procurement, processing, and marketing, strengthening their control over income. The approach emphasizes a holistic, long-term, and women-centered extension system, with strong linkages across institutions and continuous feedback from the community. It reflects a shift from technology transfer towards livelihood transformation.

Women feed the family first, yet eat last
Women do not need charity, they need opportunity
Women are central to agriculture, but remain unrecognized as farmers
Organizing women and building collectives strengthens their voice and access

Farming should be seen as an enterprise, not just subsistence

- Meenakshi Choudhary
SEWA

Do Extension Interventions Translate into Real Livelihood Gains?

The central question emerging from the ground is simple yet powerful whether extension interventions actually improve farmers' lives. Despite advancements in technologies, advisories, and inputs, there remains a significant gap between technology adoption and livelihood transformation.

Extension systems continue to focus on improving yields, but this does not necessarily translate into improved incomes or better livelihoods. The approach remains largely input-centric, prioritizing products over people's realities, while risks faced by farmers are often overlooked. Women, who form a major part of the agricultural workforce, remain largely invisible in the design of extension systems, with their time constraints, risks, and roles not adequately considered.

There is a need to shift towards co-designing solutions with farmers at the first mile, ensuring that interventions are based on real needs, continuous feedback, and iterative learning. Extension systems must move towards outcome-based approaches rather than input delivery.

The future of extension lies in building ecosystem-based models that integrate advisory, finance, and market linkages, supported by hybrid institutional arrangements involving public systems, civil society, and enterprises. Data and digital tools can support scale, but trust, transparency, and farmer agency remain central to adoption.

Extension remains input-centric while neglecting livelihoods; real impact begins when farmer realities, risk reduction, and local institutions drive interventions instead of one-size solutions.

Women remain invisible in extension design, and transformation requires a shift from top-down delivery to co-creation.

Success is measured by livelihood outcomes and by truly understanding farmers rather than pushing technologies.

- Krishna Gopal GV
Access Livelihoods

Dialogue Insights

* *Extension systems undervalue field-based knowledge, reflecting a structural bias towards formal research over practice*
* *Lack of mechanisms for documentation, reflection, and learning limits the use of experiential knowledge in system improvement*
* *Extension systems remain compliance-driven, with limited emphasis on learning, adaptation, and knowledge exchange*
* *Gender exclusion in extension is systemic, rooted in institutional norms, access barriers, and recognition frameworks*
* *Women's empowerment requires shifting from participation to economic agency through enterprise-based approaches*
* *Extension continues to prioritize production over livelihoods, limiting its impact on farmer incomes and resilience*
* *There is a need to move from top-down delivery models to co-created, context-specific solutions*
* *Future extension systems require integrated, ecosystem-based approaches linking advisory, finance, markets, and institutions*

Market-Oriented and Entrepreneurship-Focused Extension

Is Farmer-to-Farmer Learning the Future of Extension?

Agricultural extension in India continues to face major gaps in access and effectiveness. A large proportion of farmers do not receive extension or technical advice, and reliance on public extension systems has declined over time. Farmers increasingly depend on progressive farmers, input dealers, and mass media for information, while a majority of smallholders remain disconnected from new technologies and guidance.

The system is constrained by low investment, limited manpower, poor extension professional to-farmer ratios, and weak coordination among institutions. There is also a disconnect between research and field realities due to inadequate feedback mechanisms.

In this context, Farmer-to-Farmer (F2F) extension emerges as an important approach, where progressive and entrepreneurial farmers act as local mentors and knowledge providers. Knowledge flows within communities through peer learning, making it more relatable and trustworthy. Farmers tend to adopt innovations more easily from successful peers operating under similar conditions. F2F extension supports agripreneurship by building risk-taking ability, market understanding, and business skills. It helps reduce information gaps, perceived risks, and social barriers. Successful agripreneurs demonstrate viable models, inspire others, and create pathways for farmers to move from subsistence to market-oriented farming.

Strengthening such models requires facilitating farmer networks, engaging progressive farmers as mentors, and building institutional support systems. Extension needs to evolve from a technology dissemination approach to one that promotes entrepreneurship and livelihood transformation.

Are we really staying and working with farmers?
Poor collaboration in extension leads to loss of resources
Professor of Practice is promoted under NEP 2020, but still not realized in extension

We are not here to discuss problems, but to find solutions

- Mahesh Chander
ICAR -IVRI

Is Extension Moving Beyond Production to Markets and Entrepreneurship?

Extension must shift from traditional production-oriented extension towards market-oriented and entrepreneurship-focused approaches. Earlier extension systems mainly emphasized yield and technology transfer, but there is a growing need to support farmers beyond production.

Market intelligence, value addition, branding, and institutional linkages are becoming central to extension. Supporting farmers as entrepreneurs through skill development, business planning, and mentoring plays an important role in improving incomes.

Experiences from KVK showed that linking farmers with institutions, markets, and financial systems, along with forming collectives such as FPOs, helps in strengthening market access and reducing dependency on intermediaries. At the same time, challenges such as lack of mentoring, weak networking, and limited access to market information continue to affect the growth of agri-entrepreneurship.

Extension is shifting from production-focused to market-oriented approaches
Farmers need support not just in production but in value addition, branding, and markets
Extension should create entrepreneurs, not just producers

Income-centric extension is the future

- Alagesan P
ICAR-KVK, MYRADA

Can Youth-Led Digital Models Transform Last-Mile Agricultural Extension?

Agricultural extension faces multiple challenges, including climate change, biodiversity loss, and limited reach of face-to-face methods. Solutions are increasingly knowledge-intensive, yet access to relevant, local-language learning tools remains limited. At the same time, there is growing disinterest among youth in agriculture due to its perception as a low-status and unprofitable occupation, leading to a silent migration from rural to urban areas.

Access Agriculture presents an alternative through its Entrepreneurs for Rural Access (ERA) model, which enables rural youth, especially women, to act as local service providers. The model combines digital tools, training, and entrepreneurship to deliver agroecological knowledge at the last mile. Young entrepreneurs use videos in local languages to engage farmers, making learning more accessible and relatable.

The model focuses on building local capacity by training youth not only in technical knowledge but also in business, facilitation, and marketing skills. Equipped with tools such as

mobile apps and solar-powered projectors, they are able to reach remote areas without internet or electricity. This creates opportunities for youth to establish enterprises while providing advisory services to farmers.

The approach also enables diversified livelihood opportunities, where entrepreneurs combine advisory services with small businesses such as bio-input production, food processing, livestock rearing, and organic farming. With a growing network of trained entrepreneurs across countries, the model demonstrates how youth-led, digitally enabled extension systems can improve outreach, promote agroecology, and support sustainable and inclusive food systems.

Solutions are knowledge-intensive, but access to local-language learning is limited.

Digital tools and local-language videos can bridge the last-mile gap.

Young people can act as private extension service providers.

Extension can be combined with entrepreneurship and service delivery.

One solution cannot fit all; localized learning is essential.

Extension should move towards business models, not just advisory roles

- Savitri Mohapatra
Access Agriculture

Can Market-Linked Livelihoods Transform Women Farmers' Realities?

Women are deeply involved in farming activities, yet they are often seen as labourers rather than farmers, with decision-making and income largely controlled by men.

The approach focuses on building women's economic empowerment by enabling them to move from labour participation to becoming producers, economic actors, and eventually entrepreneurs with decision-making power. This transition is supported through strengthening collectives, building livelihood assets, improving access to credit and services, and creating market linkages.

The model emphasizes removing entry barriers for women, creating livelihood opportunities close to their homes, and promoting women-friendly tools and practices. Co-created planning enhances ownership and improves implementation. Productive assets play a critical role in income enhancement, acting as a pull factor for sustained engagement. The approach highlights that extension should not be seen in isolation but as part of a larger system that includes production, investment, services, institutions, and markets.

Learning is continuous and experiential, driven by farmer-to-farmer exchange, co-creation of knowledge, and long-term handholding support.

Removing entry barriers is key to women's participation.

Livelihoods near home increase women's involvement.

Co-created planning improves ownership and implementation.

Extension should not be seen in isolation. It requires end-to-end support systems.

One centralized solution will not work. A decentralised, context-specific extension is needed

- Rajeev Ranjan
PRADAN

Dialogue Insights

* *A large proportion of farmers remain outside formal extension systems, highlighting structural gaps in access and outreach*
* *Informal and peer-based systems are filling this gap, indicating a shift away from institution-centric extension models*
* *Extension systems are transitioning towards market-integrated approaches, where value chains and enterprise development are central*
* *Income generation, rather than production, is emerging as the primary measure of extension effectiveness*
* *The emergence of decentralized, actor-driven models reflects the limitations of centralized extension systems*
* *Youth and private actors are reshaping last-mile delivery through hybrid service and business models*
* *Structural barriers continue to limit women's participation, requiring systemic interventions beyond program-level inclusion*
* *Empowerment depends on access to assets, markets, and decision-making, not just participation*
* *One-size extension models are increasingly ineffective, reinforcing the need for localized, context-specific, and adaptive approaches*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Agri and Fisheries Startups: Innovations, Technology and Services

Is Extension 4.0 About Technology or About Enterprise?

Agricultural extension is evolving from a technology transfer approach to a more enterprise-driven system. Earlier phases focused on dissemination and adoption, but the current shift emphasizes building market-ready solutions and creating enterprises. The focus is moving from counting demonstrations to enabling the creation of viable agri-enterprises.

Extension 4.0 integrates technology, entrepreneurship, market intelligence, and institutional systems. It promotes a market-backward approach, where production is guided by consumer demand, quality standards, and market requirements rather than supply-driven models.

The approach highlights the importance of incubation and mentoring to support agri-startups, along with mechanisms such as intellectual property support, revenue models, and business incubation systems. It also emphasizes value chain integration, covering production, processing, packaging, branding, logistics, and export, moving beyond a narrow focus on yield.

The success of extension is linked to multiple factors including technology readiness, entrepreneurial capacity, market access, and institutional reliability. If any of these elements are missing, enterprise outcomes are affected.

Farmers should be seen as entrepreneurs, not just adopters.

Extension success should be measured by revenue, jobs, and startups not just trainings.

Research must convert into scalable businesses, not remain as outputs.

Digital and data-driven advisory strengthens market intelligence and decision-making.

Extension 4.0 creates higher farmer income, jobs, and export competitiveness.

- Sethuraman Sivakumar
ICAR- CTCRI

Can Extension Work Without Continuous Engagement and Trust?

Eco Agripreneurs works through an integrated model combining advisory, input services, soil testing, and enterprise development. Agri-input shops function not just as sales points but as knowledge centres, where farmers receive both inputs and technical guidance. Field experiences indicate that advisory alone is not sufficient farmers require access to reliable inputs and continuous handholding to adopt practices effectively

Initiatives such as residue-free rice and carbon farming demonstrate how extension can be linked with market opportunities, environmental sustainability, and farmer income enhancement. Large-scale farmer engagement, training, and institutional collaboration have supported adoption across multiple regions.

The approach emphasizes continuous engagement, practical learning, and farmer-centric solutions. It reflects a shift from conventional advisory to enterprise-based extension, where knowledge, services, and market linkages are integrated to create sustainable agricultural livelihoods.

Extension becomes effective only through continuous engagement and trust, where farmers receive season-long support rather than one-time advice

Sustainable and residue-free farming linked with market opportunities, along with models like carbon farming, can simultaneously improve income, health, and the environment

Real transformation happens when professionals work closely with farmers, building trust and enabling new income opportunities rather than operating from a distance

- Nagan Gouda Malkaji
Eco Agripreneurs Pvt Ltd

Can Data Without Understanding Improve Farmer Decisions?

Agricultural interventions over the years have introduced multiple technologies, advisories, and schemes, yet fundamental challenges at the farmer level remain largely unchanged. A critical gap lies in the absence of structured financial understanding. Farmers often record expenses informally, but without calculating totals, profits, or losses, limiting their ability to make informed decisions.

Data fragmentation, lack of real-time intelligence, and high crop losses due to unpredictable conditions continue to affect smallholder farmers. Many efforts by different stakeholders operate in isolation, with limited visible impact at the field level.

A simplified, farmer-centric digital approach uses widely accessible platforms such as

WhatsApp to enable farmers to record transactions, track income and expenditure, and access need-based advisories. The focus is on usability and relevance, ensuring that farmers can engage with digital tools without additional complexity.

The approach moves from generic advisories to data-driven decision-making, enabling farmers to understand their own costs, returns, and timing of market decisions. It reflects a shift from guess-based farming to evidence-based practices rooted in individual farm data. The real transformation in agriculture lies not in adding more technologies, but in addressing foundational gaps such as financial literacy, usability, and meaningful use of data in farmers' everyday decisions.

Despite decades of interventions, farmers continue to struggle because data is neither understood nor used, highlighting that the real issue is not lack of technology, but lack of usable, farmer-centric systems

The shift to simple, accessible tools like **WhatsApp is enabling farmers to move from recording expenses without insight to making personalised, data-driven decisions, transforming guesswork into evidence-based farming**

- Sachin Farfad Patil
GramIQ

Can OTT Platforms Sustain Agricultural Extension While Delivering Real Value?

The use of OTT platforms in agricultural extension has enabled wider outreach and strong engagement with farmers, creating a trusted space for continuous interaction. However, sustaining such platforms remains a major challenge, as advertisement-based models are no longer viable in the current digital ecosystem.

To address this, the approach has shifted towards integrating extension with business models such as input supply, nurseries, and advisory-linked services. Field experiences reveal significant gaps in basic agricultural knowledge among farmers, including limited understanding of soil health, nutrient management, and scientific practices. Input markets often fail to provide proper guidance, influenced by commercial incentives rather than farmer needs. This creates a disconnect between advisory and actual practices on the ground.

The Shramajeevi Television Pvt. Ltd model highlights that extension cannot function as information delivery alone; it must be supported by reliable services, quality inputs, and accountability. Building credibility through consistent, science-based guidance and ensuring access to genuine resources are critical for long-term impact. The experience

also points to emerging opportunities where gaps in extension systems can be addressed through entrepreneurial approaches, particularly in areas such as quality planting material and crop-specific solutions.

Popularity does not guarantee sustainability; extension platforms cannot survive on advertisements alone.

Extension must integrate with viable business models to sustain itself

Advisory without access to genuine inputs breaks farmer trust

Farmers still lack basic scientific understanding of soil and nutrients

Misinformation and unscientific practices are damaging farming systems

Extension must move from information sharing to end-to-end support

- Venkatramana Hegde
Shramajeevi Television Pvt. Ltd

Who Captures the Value: Farmers or the Market System?

Tribal agriculture faces multiple challenges including low incomes, migration, dependence on intermediaries, and limited value addition, reflecting a significant extension gap in these regions.

The core issue lies not in production, but in the absence of value-chain support. Farmers often sell raw produce at low prices, while the larger share of value remains outside the village economy. This results in production without value leading to poverty, and value without ownership leading to exploitation.

The Tribe Grown enterprises approach shifts extension from advisory to enterprise by focusing on processing, branding, and direct market linkages. It promotes entrepreneurship within communities, enabling farmers to move beyond production and engage in higher-value activities. A structured model connects community groups with training, procurement, packaging, branding, and direct customer delivery, ensuring end-to-end support. This reduces dependence on intermediaries and strengthens local ownership. The model also emphasizes fair trade and direct supply chains, ensuring better prices for producers while delivering quality and traceability to consumers. Digital integration supports transparency and expands market access.

Farmers remain poor not because they produce less, but because they capture very little value from what they produce, with most of the value being taken outside the village economy

Extension remains incomplete when it focuses only on production, as real impact comes from connecting farmers to markets, value addition, and ownership within the value chain

True empowerment happens when farmers move from being participants in the system to becoming owners of enterprises, capturing both value and decision-making power

- Bhavesh Wankhade
Tribe Grown enterprises

Can Collective Systems Unlock Real Value in Aquaculture?

Aquaculture presents strong potential for income generation, but fragmented production systems, lack of coordination, and weak market linkages often limit farmer returns. Small-scale farmers operate individually, facing challenges in accessing quality inputs, technical guidance, and reliable markets.

The Uday Aqua Connects cluster-based approach brings farmers together, enabling aggregation of production, shared access to inputs and services, and improved bargaining power. This model strengthens coordination across the value chain, making it easier to standardise practices, ensure quality, and reduce costs. Market linkages play a critical role in this system by connecting farmers directly with buyers, reducing dependence on intermediaries and improving price realisation. Collective marketing and better planning help farmers align production with market demand, enhancing profitability.

The model also enables continuous technical support, capacity building, and monitoring, ensuring that farmers adopt better practices and manage risks effectively. By integrating production, services, and markets, the approach creates a more stable and efficient ecosystem for aquaculture.

Fragmented production limits farmer income; clustering creates scale, power, and better market access

Real value in aquaculture comes not from production alone, but from collective systems that connect farmers directly to markets

- Bhagya Lakshmi
Uday Aqua Connects

Can AI and IoT Unlock Real Value in Aquaculture?

Aquaculture faces challenges such as poor water management, disease risks, and lack of timely decision-making, which often affect productivity and farmer incomes. Eruvaka Technologies is leveraging advanced technologies such as Artificial Intelligence (AI) and the Internet of Things (IoT) to transform aquaculture into a more efficient, data-driven, and sustainable enterprise. The approach focuses on real-time monitoring and intelligent decision-making to improve productivity, reduce risks, and enhance farmer incomes.

Through IoT-enabled sensors, the system continuously tracks critical water quality parameters such as temperature, dissolved oxygen, pH, and salinity. These data are analysed using AI-driven platforms to generate timely insights and advisories for farmers. This enables proactive management of ponds, helping farmers prevent disease outbreaks, optimize feeding practices, and reduce input costs.

The integration of AI and IoT shifts aquaculture from reactive management to predictive and preventive systems. Farmers are empowered to make informed decisions based on real-time data rather than relying on guesswork or delayed observations. This not only improves production efficiency but also reduces losses caused by environmental fluctuations and poor water management.

Real-time monitoring of water quality using IoT sensors

AI-driven insights for better pond management and feeding practices

Reduces risks such as disease outbreaks and crop losses

Enables data-driven decision-making instead of guesswork

Improves productivity, efficiency, and farmer incomes

- Twisha Upadhyay
Eruvaka Technologies

Dialogue Insights

* *Extension effectiveness is driven more by trust, credibility, and continuous engagement than by delivery channels or platforms*
* *Sustainable extension models require integration of advisory with viable business systems and service delivery*
* *The gap between advisory and actual practice reflects weak linkages between knowledge, inputs, and market systems*
* *Value chain constraints continue to limit scaling of innovations, despite successful field-level adoption*

* *Many extension failures are rooted in weak ground-level understanding and lack of context-specific solutions*

* *Effective systems are built through close engagement with farmers, not distant or fragmented approaches*

* *The future of extension lies in integrated, enterprise-driven models that combine knowledge, services, and market linkages*

Policy, Governance, and Financing of Extension Systems

Who Should Drive Extension? Public Systems, Private Actors, or Both?

Agricultural extension today operates as a pluralistic system involving public, private, and civil society actors, each contributing through different roles, approaches, and financing mechanisms. This complexity brings both opportunities and challenges, particularly in terms of coordination, accountability, and system effectiveness.

Different countries follow varied models based on their economic context. High-income countries operate hybrid systems with strong private sector roles, while emerging economies balance public and private contributions. In lower-income contexts, extension continues to rely heavily on public systems and donor support. There is a growing need to move from fragmented pluralistic systems to more integrated hybrid systems.

Future extension systems require new competencies including facilitation, systems thinking, climate advisory, market orientation, and digital capabilities. Innovative financing models such as blended finance, climate finance, and results-based approaches are emerging as key enablers. Extension is positioned as a strategic investment within national systems, with a clear recognition that scaling impact and achieving sustainable outcomes is not possible without strong extension systems.

Extension is not one system but many actors working together yet without coordination, pluralism becomes fragmentation

Public investment remains essential, as extension delivers not just services, but public goods like food security, climate resilience, and social inclusion

The future of extension lies in hybrid systems, where governments steer, multiple actors collaborate, and impact is driven through coordinated, outcome-focused approaches

No impact without extension, and no scaling without investing in it

- Carl Erik Schou Larsen
GFRAS

Dialogue Insights

* *Extension policy remains weak due to the absence of a dedicated framework, with extension treated as a sub-component within broader agricultural policies*
* *Lack of focused policy attention results in fragmented efforts, weak planning, and limited institutional support*
* *Extension systems are burdened with administrative and implementation roles, diluting their core advisory function*
* *Despite these constraints, extension continues to be held responsible for broader agricultural outcomes*
* *Stronger extension innovations in other countries are driven by higher political commitment and sustained financial investment*
* *Consistent funding and donor support enable experimentation, scaling, and institutional strengthening*
* *Limited prioritization and funding constrain innovation and system transformation in India*

NextGen Research and Review Insights

The NextGen Research sessions highlighted emerging directions in agricultural extension, with a strong focus on digital technologies, climate resilience, and system-level approaches. Tools such as AI, big data, and mobile-based advisory are improving access and efficiency, but their impact depends on usability and integration with existing systems.
Climate-smart practices, carbon farming, and sustainability-oriented models reflect a shift towards risk management and long-term resilience. At the same time, studies emphasized persistent gaps in inclusion, particularly for women and marginalized groups, as well as challenges in scaling agri-startups and innovations.

A key concern remains the disconnect between data generation and its meaningful use by farmers, along with weak linkages between research and field realities. the insights point towards the need for extension systems that are integrated, inclusive, and focused on delivering real livelihood outcomes.

Core Takeaways from Dialogue

* *Extension is not failing because of lack of innovation; it is failing because it refuses to change.*
* *We don't have an extension gap; we have a relevance gap.*
* *Farmers don't need more advice; they need systems that actually work for them.*
* *Extension talks about farmers, but rarely listens to them.*
* *We celebrate technologies, but ignore whether they improve farmer incomes.*
* *More apps won't fix agriculture, better systems will.*
* *Extension is busy delivering messages, while farmers are struggling to make livelihoods.*
* *If extension continues to remain fragmented, it will remain irrelevant.*
* *Extension is running out of policies, not apps.*
* *Convergence is talked about, but not practiced.*
* *Public extension does the work, but fails to tell the story and in silence, its impact dis-appears.*
* *Impact not told is impact not recognized.*

The Next Steps for Extension

* *Move from fragmented efforts to integrated extension systems that connect advisory, inputs, finance, and markets*
* *Shift extension from scheme implementation to problem-solving, driven by real farmer needs*
* *Redefine success metrics from outputs to income, resilience, and livelihood outcomes*
* *Build trust-based, continuous engagement models instead of one-time advisory delivery*
* *Strengthen last-mile systems through farmer networks, local institutions, and decentralized approaches*
* *Promote farmer-to-farmer and community-led extension models for scale and relevance*
* *Use digital and AI tools to support human extension, ensuring inclusivity, usability, and real-time feedback systems*
* *Move beyond pilots by scaling proven models through institutional support and partnerships*
* *Enable farmers to transition scaling proven models through institutional support and partnerships from producers to entrepreneurs, with support for value addition, branding, and market linkages*
* *Strengthen value chains and market systems to ensure farmers capture a larger share of value*
* *Invest in youth, startups, and innovation ecosystems, focusing on solving real grassroots problems*

* *Recognize and empower women as central actors through access to assets, credit, and markets*
* *Reform extension policy with clear frameworks, defined roles, and sustained public investment*
* *Build systems to measure, demonstrate, and communicate impact to strengthen credibility and support*

Way Forward

"If extension does not reinvent itself now, it risks becoming irrelevant in the very system it was meant to transform"

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The MANAGE Dialogue 2026: International Workshop on the Future of Agricultural Extension and Advisory Services was organized by the National Institute of Agricultural Extension Management (MANAGE), Hyderabad, from February 24–26, 2026. The Dialogue aimed to bring together policymakers, researchers, NGOs, FPOs, extension professionals, practitioners, students, youth, and women to reflect on emerging challenges and opportunities in agricultural extension and advisory services, and to collectively shape strategic directions for building resilient, inclusive, and future-ready extension systems. A total of 56 participants from across India took part in the three-day programme, which covered key themes including Reimagining Agricultural Extension in a Changing World, Digital and Data-Driven Extension, Extension Education, Capacity Building and Knowledge Linkages, Market-Oriented and Entrepreneurship-Focused Extension, Agri and Fisheries Startups: Innovations, Technology and Services, and Policy, Governance, and Financing of Extension Systems.

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