



National Dialogue on Innovations in Agricultural Extension: A Way Forward

Concept Note

Background

The agriculture and allied sectors in India experienced buoyant growth in the past two years registering 18.8 per cent contribution in GVA (2021-22) and a growth of 3.6 per cent (2020-21) and 3.9 per cent (2021-22). The sectoral production performance is impressive (foodgrains:316.05mt, horticulture production: 331.05 mt, largest producer of milk 210 mt, meat 8.80 mt, eggs: 122.11 billion eggs per annum and fish production: 14.5 mt. The technology dissemination services, both public and private have played a significant role in this process, though the performance varied from state to state. In agriculture dependent economies, extension programmes have been the main conduit for disseminating information on farm technologies, support rural adult learning and assist farmers in developing their skills technical and managerial. It is expected that well organized extension programs would facilitate increase farm productivity, enhance farm incomes and ensure food security. The task is focused on assisting farmers in running their farm operations efficiently. This essentially requires enabling policy environment, suitable programme delivery models, competent field functionaries, empowered farmers, market integration, intensive use of ICTs, etc.

Extension Efforts

Series of voluntary projects in pre-independence era, Community Development Program (1952) and National Extension Service Blocks (NES-1953) were the major earlier extension efforts. Subsequently, Pre-Green Revolution interventions implemented include: Intensive Agricultural District Program (IADP, 1961) and Intensive Agricultural Area Program (IAAP, 1964). Followed by Green Revolution (1967), duly supported by intensive extension efforts like National Demonstrations (1965), Farmers Training Centres (FTC-1966), Small and Marginal Farmers Development Agencies (SFDA-1971), Krishi Vigyan Kendra (KVK-1974, now 721) and lab to land program (1979- that subsumed in KVKs). In 1974-75), a very major extension intervention through World Bank Funded Training and Visit (T&V) system resulted in restructuring of the extension system. Following its significant impact, it was expanded throughout the country from 1984 to 1995 through National Agricultural Extension Project (NAEP). Further, the process of Extension Reforms was initiated under National Agricultural Technology Project (NATP, 1998) by establishing Agricultural Technology Management Agency (ATMA) at district level, now covers 676 districts in 29 States/3 UTs under the National Mission on Agricultural Extension & Technology (NMAET).

Extension Models in Operation

Research Institution Outlets (RIOs) under State Agriculture/Horticulture/Veterinary Universities and ICAR institutes provide technology dissemination window through focused outreach programs with various host institutes is a prominent institutional innovation vital to technology assessment, refinement, and demonstration and provides linkages with various programs. Development Department Outlets (DDOs) under the State Department of Agriculture, Horticulture, Animal Husbandry, Dairy, Fisheries, Sericulture, etc. are also carrying out extension through various State/Gol schemes. Their primary function is to promote tested technologies/package of practices recommended by the KVKs/SAUs/ICAR. Agricultural Technology Management Agency (ATMA)-a semi-autonomous institution at district level has successfully attempted restructuring field extension by decentralized arrangements, bottom-up planning, linking research-extension and promoting farmer groups approach. Under ATMA, field extension is mainly driven by Block Technology Teams (BTTs) and Commodity Groups (CGs). At the village level, ATMA has a provision of a 'Farmer Friend' who serves as a primary link between extension system and other farmers. Commodity Boards (Tea Board, Coffee Board, Spices Board, Coconut Board, Fisheries Board, etc.) operate through the central and centrally

sponsored schemes. Their extension efforts include providing quality planting material, training and information support, production and market/export promotion, welfare measures for the producers, etc.

Private sector extension service providers comprise of agri-entrepreneurs, agri-clinic and agribusiness centres (ACABCs), agri start-ups, internet platforms, input agencies, companies, corporates, etc. Their primary function is to innovate / supplement extension efforts while promoting their own products and services. Farmer Groups/Organizations/ Cooperatives, etc. are increasingly being recognized as essential institutions for mobilizing farmer groups, advancement rural livelihoods and farmer participation. Non-Government Organizations (NGOs) operate at local, regional, national and international level. In all the cases, they intend intense connect through participatory and mobilization approaches. Mass Media like television, radio and print media still are the most popular information sources. Now, social-media platforms like YouTube, WhatsApp, twitter, Instagram, LinkedIn, Facebook, emails, blogs, etc. are gaining space in the information dissemination process.

Major Constraints

Several constraints are observed over different extension models considerably affecting the technology dissemination process. Broadly these include: i) policy support and systemic inadequacies, (ii) lack of investments and extension infrastructure, iii) need based deployment of manpower in extension at various levels, in horticulture, livestock, fisheries and speciality agriculture, etc., (iv) inadequate capacities of the district/block level extension agencies to respond/address the field problems, v) weak extension set-up in allied sectors, vi) need for convergence of extension efforts, vii) managing pluralism in extension service providers, viii) outreach constraints of existing extension models, ix) need for innovative extension strategies, x) need for promoting private initiatives, entrepreneurs, start-ups, etc., xi) need for farm youth and farm women specific strategies, xii) Scope for strengthening R&E linkages and feedback management, xiii) technology specific and location specific extension requirements, xiv) enhancing ICT application, xv) need for value-chain marketing : greater market integration and business orientation, xvi) streamlining training and capacity building of farmers, field functionaries, and stakeholders, xvii) need for capturing international experiences for strategic advantages, xviii) still deeper research required in extension systems and plough back the outcomes, and xix) need for in built M&E for timely correctives, etc. These constraints could be addressed through the following interventions.

Extension Innovations and Reforms

(i) Empowering Farmers: Managing Extension Services at Cutting Edge Level

There is need to promote farmer aggregates like SHGs, FIGs, CIGs, FOs, FPC, Cooperatives and enhance their skills for better production, marketing, and price negotiating/ program delivery capacities. Social capital formation, community led initiatives, participatory approaches, involvement of community resource persons, etc. need to be encouraged in the extension processes. Farmer Organizations (FOs)/ Farmer Producer Companies (FPCs) should come up on a cluster basis where they may act as a single window service centres to all farmers/producers in a given cluster, focused on product specialization, one district one product. It would enable realize higher returns through better market linkages to their produce to become sustainable through collective action. Skilling/capacity building of farmer aggregates is the core challenge to be addressed by extension systems. Recent initiative to promote over 10,000 FPOs/FPCs in selected micro agro-ecologies is the right step in this direction to promote farmer participatory extension. The extension services may have a defined target for promotion of FOs/FPOs in a block/cluster. Further, with formation of separate Ministry of Cooperation (MoC), the farmer cooperatives are expected to get a big boost as grass root level change agent as evident in Maharashtra and Gujarat and need upscaling.

(ii) Enhancing Outreach of the Extension Models in Operation

It is important to improve outreach, interplay and performance of extension models to their optimum levels by i) widening the sectoral and area coverage, ii) partnerships and resource sharing, iii) enhanced integrated delivery, iv) improving penetration to the small producers, etc. There is need to promote chains of extension agents, formal/informal, such as para-techs, start-ups, entrepreneurs, ACABCs across the production systems and build their capacities for delivery. As recommended by the ICAR-KVK Review Report (Paroda, 2014), KVKs may be promoted and strengthened as Knowledge - Skill Innovation Centres (KSICs). They may come up as strong knowledge resource base for public and

private extension services. The recommendations on additional manpower in critical areas like secondary agriculture, climate change and agricultural marketing are yet to be implemented despite Cabinet approval twice. Programmatic interventions on nutri gardens, climate resilient agriculture, farming system skilling, promoting FOs, etc. are initiated. Enhancing revolving fund and revisiting R&E linkage guidelines needs due consideration. Further, KVKs/SAUs need to be strengthened as technology/input back up institutions especially for the new technologies. KVKs need to play an important role as mini ATIC at the district level. ATMAs/BTTs may also intensify organizing Farmer Interest Groups (FIGs) and build the capacities of FIGs & Farmer Friends (FFs) through KVKs, by working out strategic modules as per potential. Extension in allied sectors like horticulture, animal husbandry, dairy, poultry, fisheries, nutri-cereals, etc., is very weak, although they contribute significantly. Hence, extension needs to be re-organized in allied areas by way of: i) providing additional SMS to KVKs/ATMAs in potential areas, ii) promoting growers' associations, commodity groups, entrepreneurs, iii) promoting dairy/fish cooperatives, and iv) using dairy/fisheries farmer entrepreneurs as extension agents. Extension for disadvantaged areas/groups could be addressed through innovative extension solutions like combination of extension service provider (ESP), ii) involving NGOs/Para-techs, iii) intensive use of ICTs, and iv) participation of local communities and institutions, etc. Market-led extension strategies are required to be worked out involving farmer aggregates. Further, increased investment in market infrastructure (electricity, warehousing, rural roads, modern ICT etc.) by the government, private sector and local communities are urgently spelt out and operationalized.

Farmers Field Schools (FFSs) proved as an effective extension tool, practiced widely, needs to be up-scaled, and not only for crops but also in the allied sectors too, as it provided opportunity for farmer-to-farmer knowledge dissemination, promoting farmer-led innovations and farmer first extension. NABARD Farmer Innovation provision and ATMA support could facilitate farmer to farmer extension. "Farmer FIRST (Farm, Innovations, Resources, Science and Technology)" approach needs to be promoted with focus on critical needs of the farmers and work out options for their redressal. Farmer Business Schools (FBSs) promoted by FAO to promote farmers to entrepreneurs also needs to be tried and tested. It is important to create enabling environment for women extension personnel in extension services. Enhanced access to credit/inputs for farm women and providing gender sensitive and home scale nutritional extension services are crucial. Specific measures proposed include sensitising/reorienting the extension services on gender and nutrition issues, developing and piloting such extension models, promoting nutri-gardens and alternate nutri-foods, women empowerment, enhanced use of digital networks, public awareness and stakeholder participation, pilot studies in vulnerable areas and capacity building at various levels. There should be adequate focus on motivating and attracting youth in agriculture for which high-tech agriculture, secondary agriculture, processing and value-addition opportunities, agri-entrepreneurships, innovative marketing, commercial enterprises, etc. Youth in agriculture needs to be provided institutional support through KVKs, agri-clinics, financial institutions, etc. for promoting them as development agents/job providers. Committee of Food Security (FAO High Level Panel of Experts-2021) suggested youth engagement strategies like: securing dignified and rewarding livelihoods; increasing equity and rights to resources; enhancing knowledge, education and skills; and fostering sustainable innovation. MSU's Global Youth Advancement Initiative (GYAI) is the right step in this direction.

A recent evaluation study of KVK by ISAP (2021) suggested measures to improve the performance of KVK system by providing critical manpower, infrastructure to the newly established KVKs, equal employment benefits to NGO operated KVKs, incubation and start-ups by the KVKs, SMSs as mentors to the BTTs, FLDs/ OFTs be organized as per the need of the micro-agro situations, enhancing outreach through CSCs, focused gender and farm youth programs, linkages without affecting the mandated activities, enhanced budgetary support, incentives in disadvantaged areas, etc. Strengthening critical manpower at the district and block levels, Flexible funding options, pooling of extension resources and allocation of the same on matrix mode as per need of the zones and sub-zones, focus on FO and FPC formation, promoting MoU based PPPs, convergence of extension efforts through Block Extension Plan, Creation of M&E cell in the SAMETIs, strengthening feedback mechanism, and active role in content development/delivery on ICT and social media platforms, etc. Outsourcing some of the extension functions to organizations outside the public sector is crucial. Farmer Producer Organizations (FPOs) are also becoming capable to provide extension services like Maharashtra State Grape Grower Association, etc. Farm youth including women may be made aware about the relevant provisions they could avail under various schemes and programs of the development departments and financial institutions. DDM(NABARD), ATMA, KVKs may organize such orientation camps jointly at the district/block level. Benchmarks for extension performance may now include extent of IFS adoption,

extent of convergence, enhancement of production/ income, enterprise combination, market linkages, etc.

(iii) Integrating Private Sector Efforts

Public-Private Partnerships (PPPs) are required down the line to promote MoU based participatory extension arrangements. Public sector needs to be oriented on contribution of PPPs. The capacity of private agents be improved by strategic alliances which calls policy directions, for example, strengthening FTC, Khurda, Odisha wherein Paradeep Phosphates have invested a lot for mutual advantage. There is adequate space for promoting dealers/distributors (over 2 lakh) as extension agents through proper orientation. Their outreach efforts should be managed by agricultural graduates. ACABCs, agri-entrepreneurs, agri start-ups, e-platforms, etc. are found to be gaining space in extension operations. Agribusiness MBAs, IT graduates and farm youth (including women) may be promoted for providing advisory services on payment basis in collaboration with private sector. Corporate Social Responsibility (CSR) funding windows need to be opened up by the corporate sector to spend part of their profits as mandated by the Government, on rural development and farm extension. CSR provisions could be suitably integrated in Block Extension Plans through MoU, and private sector may take a lead in implementing identified activities. There is need to promote Private Paid Extension (PPE) services in commercial / horticultural crops as practiced in Maharashtra. Further, input quality testing should be privatized as is being done in the developed countries. Further, large number of MoU based PPPs and business models should be encouraged at the cluster level through FPOs. Lessons/learnings from successful private sectors like BAIF, ITC, Jain Irrigation, IFFCO, etc. should be systematically captured and integrated. IVLP also is to be re-visited. Further, the Government proposes to launch a scheme on PPP mode involving public and private research and extension stakeholders of agri-value chain for delivery of digital and high-tech services to the farmers.

(iv) Strengthening Linkages in Research and Extension

There are various research and extension (R&E) linkage forums available in agriculture and allied sectors at various levels (national, regional, state, district and even at the block level. The performance linkage forums need a lot of improvement in terms of contents, coverage, joint actions and follow-up. Technology options for agro-climatic zones and sub-zones needs to be systematically worked out as per socio-economic dimensions of each micro agro-eco situation. This would enhance dynamism in extension processes. Farmer-Scientists Interactions (FSI) may be upscaled in knowledge driven technologies. Likewise, successfully demonstrated innovations by KVKs should be upscaled by the Field Extension agencies, for example, NICRA village level climate change management committees. Intensive skill training programs for ATMA field functionaries and Farmer Friends may be taken up through KVKs. Greater involvement of the scientists is needed in technology/knowledge driven extension in areas like NRM, IPM, INM, conservation agriculture, organic agriculture, farm mechanization, climate resilience, crop diversification, etc. Scientists/Extension agents may first work with the farmers for a considerable time, show the results and then upscale innovations, as it worked under IVLP Model. This calls for greater SAU/ ICAR Institutes outreach like US system. Further, there is need to continue and upscale “*Mera Gaon Mera Gaurav*” and “*Farmer FIRST*” programs with adequate funding support and with the greater involvement of the State Agriculture Universities. SMSs of the KVKs may mentor the Block Technology Teams (BTT), thus reaching out in all the blocks. Hence, strong need for block wise analysis of technological requirements and upgrading technical competence of KVK SMSs in the areas identified. R-E linkage guidelines need to be revisited. Feedback collation from the farmers and field functionaries is found to be weak in the extension system, so also its systematic documentation and analysis. The collation of feedback (both positive and otherwise) from the farmers and field functionaries by the Assistant Technology Managers (ATMs) and Subject Matter Specialists (SMSs) may be the first step followed by documentation/analysis of the same at KVK/ATMA level. The review and reporting could be taken up by the SAMETIs / ATARIs. Such an arrangement would not only make the extension operations demand driven but may also facilitate providing policy signals to the higher-level R&E management.

(v) Streamlining Training of the Field Extension Agencies and Farmers

The training and capacity building is a huge task - covers various categories of farmers (145 million), farmer friends (3.3 lakh), field functionaries (public 1.19 lakh + private 2.00 lakh), 200 million rural youth (including women), spread over 6,60,922 villages, 7,069 blocks, and 722 districts. National Training Framework includes National Institute of Agricultural Extension Management (MANAGE), EEIs,

SAMETIs, ATARIs, KVKs, FTCs, NGOs, etc. Interplay of these institutions needs to be worked out systematically, sharing the output - input relationships and the experiences. Further, reorganizing EEIs as regional arms of the MANAGE be considered. Farmer's training in agriculture and allied sectors is shared by the large number of agencies/organizations at the district/block levels. It is suggested that focused and segregated training responsibility needs to be assigned to different agencies as per expertise & competence of the agency. With the change in farming scenario, farmers' skills need to be oriented towards entrepreneurship, income/business orientation, aggregated production and marketing, etc. Accordingly, extension workers' skills need emphasis on social skills, entrepreneurial management skills, technical skills, and media management skills. Skill enhancement of the farmers, field functionaries and SMSs need to be prioritized to make them ready for area-specific, technology-specific and eco-region-specific extension. The States need to revisit syllabi of the agricultural universities to meet the needs of natural, organic and regenerative agriculture also covering modern agriculture, value addition and management. The SAUs are required to play leadership role in coordinating the training function in a State in collaboration with the SAMETIs. Their role needs to be revisited in the changing agricultural extension demands scenario. MANAGE and Extension Division of ICAR may guide the whole process to streamline / deliver the training function better.

(vi) Priority Setting and Convergence of Extension Efforts

There are series of district level planning instruments, scheme-wise. The extension functionaries may scan these instruments for capturing the right priorities across the schemes / programs. The crucial extension issues must reflect in Block Extension Plans (BEPs) at the cutting-edge levels, defining the role of various extension service providers (ESPs). Well established/networked KVKs as also ATMAs could be a convergence platform. The KVK- ATMA model would need to be extended and linkages worked out at the block/cluster level. The resources from the converging departments would need to be pooled and the roles and responsibilities required to be delineated carefully harmonizing of work plans of the related Central/State schemes. Operational flexibilities to the converging partners need to be worked out. Convergence requires proper role space and resources amongst stakeholders for mutually agreed Block Action Plan (BAP). Matrix mode approach is required indicating the ongoing programs and the gaps to be bridged, for example, i) Jharkhand Opportunities Harvesting Rural Growth (JOHAR) wherein NRLM and Agri and Allied sectors are integrated, ii) Neeranchal (Watershed plus approach), etc.

(vii) ICT and Media Management

Social media (WhatsApp, Facebook, Twitter, Instagram, emails, blogs, App-based services, etc.) are powerful communication tools that enhance the beneficiary coverage in the shortest period of time which could be used effectively in networking farmers' and offering context-specific information. Farm-portals provide information on e-commerce, production/protection technologies, inputs/prices, e-advisories, etc. Portals vary in their contents, user friendliness and use of visuals. There are 1.57 lakh common service centres (CSCs) which could be used for providing agricultural extension services. CSC & KVK linkages need to be promoted to reach the last mile. Further, *Kisan* Call Centres (KCCs) provide country wide common eleven-digit toll free number 1800-180-1551. Replies to the farmers' queries are given in local languages. Experience of rural tele-centres showed greater promises in information management. ICTs are also being used to strengthen the capacity of extension officers and field staff to reach farmers with timely and accurate information and help capture data from the field. The *e-Choupal* initiative, as an example has had positive effect, the system enhanced supply chain efficiency. Advanced ICTs like drones, satellite systems as well as artificial intelligence are used for precision farming, improved farm management, providing real-time data, etc. It is estimated that internet users in rural India is expected to reach over 400 million by 2021. It would enable direct link to the farmers. E-platforms and mobile applications are emerging very fast in various states. However, the pertinent question is how to increase its access to the large number of farmers and reliability of the information. Therefore, there is need for promoting farmer/ farm women knowledge groups (FKGs/FWKGs), use of traditional folks, field-days, campaigns, vernacular press, which are important and supportive extension methods. National Network of Agri Journalists (NNAJ) initiated by MANAGE may be replicated at the state level and linked to the SAUs. Farm Telecast (DD*Kisan*-2015), Radio broadcasts and Community Radio Stations (CRS) would continue to play significant role in farm information dissemination. ATMA has a provision for promoting CRS, as successfully operated by SAUs at Dharwad, Pantnagar and Sabour. However, response appeared limited on expansion. Important considerations for farm radio/TV broadcasts are: content development, treatment, delivery mode and the real time impact in the field. Different media combinations should be worked out as per subject matter, agro-climatic and socio-

economic criteria. The Directorates of Extension of the SAUs and farm information wings of the State departments may need to revisit their role when private players and IT platforms are active. ICAR-DKMA and Extension Directorate of the Ministry may facilitate this process. In totality, we should have perfect business model which can serve the masses efficiently and effectively.

(viii) Revisit the Entire Process of Research in Extension

Research in extension is a crucial area but not attended adequately. Strong extension research input is required from various academic and semi academic stakeholders to evolve a body of extension knowledge and strengthen it. Farmers, their field endowment, socio-economic setting, innovations / technologies, adoption process are the research variables for overall impact of the extension interventions. The extension research labs need to be promoted in competent organizations and at various levels. The future extension research strategies must draw strengths from international and private sector experiences. Future extension research may focus on systems interplay, convergence, agribusinesses and entrepreneurs, App based ICTs, extension for unreached, climate change adaptation, etc. The critical areas flagged in a Conference organized by the NAAS (2016) need to be revisited and prioritized. Recent innovation of awarding extension dissertations, extension start-ups and extension books by the MANAGE is taken up well by the professionals and may be replicated and encouraged. MANAGE, SAMETIs, ATARIs and the Directorates of Extension of the SAUs would need to have a strong extension research window. MANAGE may consider promoting "Extension Labs" in the critical areas and in selected SAUs/ private extension system. Extension research outcomes be ploughed back for reforming existing policies and operations. Suitable state-specific mechanisms may be worked out by the SAMETIs, ATARIs and the Directorates of Extension of the SAUs.

The Dialogue

The Extension delivery is a very complex system dealing with farm technologies on one hand and the socio-economic dimensions on the other. In a given micro-situation in the absence of reformed extension services, the program delivery to the targeted clientele is inadequate. Hence, strong extension innovations /O&M reforms are pleaded both in public and private systems. Some needs to be strengthened and a few pilots tested. Since agriculture is a state subject, all the operational details of the extension services are mostly managed by the states. However, the central agencies do provide the policy, programs and funding support. Hence, there is need for greater convergence and coordination. Needless to say, that the extension service delivery would be far more visible, efficient and location-specific if it is suitably backed by the public policies, investments, incentive linked good agricultural practices (GAPs), market reforms, scaling innovations and input augmentation.

In view of above, the Trust for Advancement in Agricultural Sciences (TAAS) New Delhi, a 'Think Tank', the Indian Council of Agricultural Research (ICAR), Ministry of Agriculture & Farmers' Welfare (MoA & FW), New Delhi and Michigan State University (MSU), Michigan, USA in collaboration with the National Institute of Agricultural Extension Management (MANAGE) will be organizing a "National Dialogue on Innovations in Agricultural Extension: A Way Forward" on 8-9 April, 2022. About 200 participants including diverse stakeholders from the Central and State Governments, scientific institutions, SAMETIs, EEIs, ATARIs, KVKs, ATMAs, private extension service providers, farmer organizations, and policy makers, etc. are expected to attend the Dialogue. The Dialogue will discuss major constraints concerning present agricultural extension system, suggest effective and efficient models' foe fruitful dissemination of innovations/technologies and related knowledge among farmers.

Objectives

- To assess current constraints in agricultural extension systems.
- To identify new innovations in agricultural extension for efficient knowledge dissemination and advisory services
- To suggest 'Way Forward' for scaling of extension innovations

Expected Outputs

- Extension innovation models assessed and opportunities captured.
- Extension approaches identified for different production systems.
- Reforms suggested for policy interventions to make extension services more efficient.

Organizers

- Trust for Advancement of Agricultural Sciences (TAAS), New Delhi
- Indian Council of Agricultural Research (ICAR), New Delhi
- Ministry of Agriculture & Farmers' Welfare (MoA&FW), New Delhi
- Michigan State University (MSU), Michigan, USA

Co-Organizer

- National Institute of Agricultural Extension Management (MANAGE), Hyderabad

Participants

Around 300 participants are expected to participate representing National Agricultural Research System (NARS) including SAUs, ICAR institutes, ATARIs, KVVKs; State Functionaries, MANAGE, SAMETIs, EEIs, ATMAs, Input support providers, Senior Representatives of the Ministry of Agriculture and Farmers' Welfare (MoA&FW), NITI Aayog, Civil Society Organizations (NGOs, FPOs, FOs), Extension entrepreneurs, Policy makers, and International Agencies like World Bank, FAO, etc.

Venue, Date and time

AP Shinde Symposium Hall, NASC Complex, New Delhi

Webinar- 8-9 April, 2022 (Hybrid Mode)