

Expectations of Agricultural Extension

from Union Budget 2019

A K Singh¹

ICAR-Indian Agricultural Research Institute, New Delhi 110 012

A robust and efficient extension system which is capable of meeting the evolving needs of farmers in the context of changing agricultural scenario is the need of the hour to enhance farmers' income and also ensure a sustainable growth of agricultural sector. Investment in reviving extension system would serve in infusing dynamism into the stagnating graph of agricultural growth in India. The scope of agricultural extension has expanded well beyond its traditional role in pushing the frontiers of production and productivity in pursuit of the nation's and food security. So now it is time to strengthen the structural framework of extension system to fulfil its ever widening scope.

Key words: Agricultural Extension, Skill, Technology

INDIA is proud to be self-sufficient in food grains and other certain agricultural produce which earlier had to be imported from foreign lands. Backed by good monsoon rainfall last year, India had produced record 284.83 million tonnes of food grains in 2017-18 crop year (July-June) as per the Fourth Advance Estimates which was 9.72 million tonnes (MT) higher than the country's previous record during 2016-17. The year 2017-18 had, in fact, witnessed record production of all major crops like rice (112.91 MT), wheat (99.70 MT), coarse cereals (46.99 MT) and pulses (25.23 MT). There has been a record production of horticulture crops with production of the country is estimated to be an impressive level of 305.4 million tonnes during 2017-18 (First Adv. Est) which is 1.6% higher than the previous year and 8% higher than the past 5 years' average production. Productivity for horticulture sector as a whole has marginally increased by about 1.3% in 2017-18 (First Adv. Estimates) as compared to 2016-17. India's milk production is estimated to have increased by 6.6% to 176.35 million tonnes during the last

financial year. The projected milk production by 2021-22 is 254.5 million tonnes as per the vision 2022 document. India is the largest milk producer in the world. Egg production has also increased to 27.95 billion (2017-18 summer) registering a growth of 7.4% than last year. About 54.6% of the population is engaged in agriculture and allied activities and it contributed 17.4% to the country's Gross Value Added for the year 2016-17 (at current prices). In spite of this, agriculture sector grew at the rate of 2.1% in 2017-18 which is quite less than other sectors of Indian economy.

Importance of extension system in agricultural sector

The key roles played by extension are the transfer of technology to farmers, capacity building to manage the technology, and assisting farmers in their decision making on inputs, cultivation and for managing their output. This includes sharing information on markets and policy environment that relate to individual farmers. However, the extension services system has so far been, largely coordinated for input

marketing and associated services, besides cultivation practices. In the wake of Green Revolution, public extension system had delivered its best services to make the dream of self-sufficient India into a reality. Over time, extension in India became more dynamic as well as pluralistic with a large number of rural advisory services providers working at ground level. Still there are as many as 22.50% of the farmers live below official poverty line. The average income of an agricultural household during July 2012 to June 2013 was as low as ₹ 6,426 as against its average monthly consumption expenditure of ₹ 6,223. Hence the priority of present government is Doubling Farmers' Income by 2022. The costs of cultivation are rising. The magnitude of food loss and food waste is alarming. The markets do not assure the farmer of remunerative returns on his produce. In short, sustainability of agricultural growth faces serious doubt, and agrarian challenge even in the midst of surpluses has emerged as a core concern. We have had enough production breakthroughs, but what is needed right now is location and



problem specific technological solutions which do not cater to only production problems but also marketing, post-harvest, climatic challenges, price, export and quality concerns. The motto should be to ensure that farmers should have greater share in consumers' rupee. In this context a strong extension link to connect the two ends of farmer fields and research centres is highly essential.

Expectations of Indian extension system from Budget 2019 and consequent advantages

Indian extension system though has been reformed and modified time and again to keep in pace with the evolving changes in agricultural scenario but still it is fraught with many challenges till date. Starting from human resource to skill sets to capacity building and incentivising of extension personnel; investments are required from Government to revive this potentially huge but poor performing sub sector of agricultural system of India.

Human Resource Requirement: Currently extension and advisory services are provided by various agencies representing public and private sector players. An examination of the availability of extension manpower, including ATMA staff across the states in the public extension system (PES), shows that the ratio of extension service provider (ESP) to operational farm holdings is around 1:1156. It varies from 1:300 (extension worker : farmer ratio) in Kerala to 1:2000 in Rajasthan. Considering specialised needs in hilly areas, as also irrigated areas, the reach of the extension functionary to farmers is further diminished. Based on scope for operational blending of public and private manpower and ICT, the DFI committee has rationalised the extension functionary to farmer ratio i.e., Hilly areas- 1:400, Irrigated areas- 1:750, and in rainfed areas 1:1000. Hence, appropriate policies should be brought into action urgently to provide more budgetary allocation and facilitate recruitment of extension staff to meet the dearth of human resources.

Skill development/capacity building of extension personnel to meet evolving needs of farmers: Field extension staffs have low qualifications and are not skilled enough to reach out to farmers and deal with their problems effectively. About only 20% of the staff are graduates. India, many small scale-farmers feel underserved and disengaged from their extension services. It is mainly because the agricultural scenario and farmer needs have changed but the extension services provided are still traditional. Refreshment of the skill sets of extension functionaries is highly essential. Commercial agriculture requires added extension services for which reorientation of existing extension system is required, including incorporating banking and financial institutions, cooperatives, etc. as extension platforms. ICT has taken over as a biggest medium to deliver farm advisory to farmers across the country. But the literacy rate of rural India is still low. So in spite of ICT penetration in villages, farmers using ICT for accessing farm advisory is still a hurdle. Human interface is required for interpretation, dissemination and delivery of ICT messages to client farmers for which extension workers need to be adept in handling of ICT tools. Market led extension should be given priority and farmers need to be taught to e-market their produce. E-marketing requires sound knowledge in handling the marketing portals which can be facilitated by extension workers if they themselves are efficient in it. Hence appropriate skill training of extension functionaries is needed and it is possible only through policy interventions. It is also suggested that regular positions should be filled by well qualified agricultural science graduates available across the country.

Incentivisation of Extension functionaries: Revised manpower strategy where contract employees get several incentives may be introduced to attract talent and maximise on quality contribution. To attract volunteers into short term agricultural extension services, attractive incentives such as reserved slots for advanced education (entry to

post-graduation and Ph.D.), priority in regular extension jobs with State governments, preference to experience in entrepreneur development schemes, international exchange programs and fellowship programs need to be considered and developed. High attrition rate in extension manpower needs to be checked by introducing performance linked incentives for field extension functionaries. Extension functionaries providing high quality extension services need to be appropriately incentivised to accelerate the momentum. The marketing staffs in any corporate sector are paid higher than any other department. Similarly, extension functionaries who promote technologies should get incentives. The following outcome based parameters may broadly define eligibility for incentivising the better performers in extension. Firstly, the percentage increase in productivity or farm output in a designated area; secondly, percentage reduction in gap between productivity in lab conditions and productivity in the field; thirdly, the growth in net income generated per unit area or livestock. Performance based incentives will generate enthusiasm and passion for work and induce professionalism in the system.

Separate fund for field tours (both for extension workers and student researchers): It is a well-known fact that extension work is largely field oriented and a large amount of operational cost is involved in travelling and accommodation of extension workers. Due to low operational budgets, often very few field tours are undertaken. Same is true for student researchers in M.Sc. and Ph.D. who undertake their dissertation work and travel to far flung states and remote areas to collect data for their research work from their respective study areas. But the hurdle which the students face is their travel and accommodation costs far exceed their meagre amount of contingency they receive through their scholarships and in some cases they cannot claim these costs back at all due to different administrative procedures in their universities. Result is that the students have to

pay from their own pocket which often becomes a financial burden on them and acts as an impediment to fruitful research. They try to cut short or avoid field tours. For extension workers the scene is a bit different. They get their travel costs reimbursed but often not on time and also the often the institution itself where they work, do not send them for field tours due to low operational budget of the institute. As a result, extension work and research both get affected tremendously. A separate fund for field tours can be created for each institute to solve this problem. Apart from the usual scholarship and contingency, extension students should receive an extra Field Tour Contingency from their respective Universities which can be granted by ICAR so that their travel and accommodation expenses can at least be covered during their research work.

Need to tap the full potential of ICT for Extension: ICT and e-extension has helped to deliver farm advisory to thousands of farmers in minimum time. But still a lot needs to be done. Software for delivery of information in vernacular language is still in process and yet to reach out to millions of farmers in remotest parts of the country. The DFI Committee after reviewing the status of ICT and extension gave certain recommendations. Policy and budgetary support is required to bring in relevant ICT tools for use of extension functionaries. The e-Agricultural Policy of the National and State Governments should outline the scope of leveraging ICT for the agricultural extension services. Extension organisations and extension personnel need to be equipped with ICTs for facilitating farm information among the agricultural stakeholders. Content will be key and the establishment for e-National Bank for Agricultural Technology (e-NBAT) at MANAGE, e-State Bank of Agricultural Technology (e-SBAT) at SAMETIs and e-District Bank for Agricultural Technology (e-DBAT) at ATMA to converge and disseminate appropriate technologies to farmers. Market intelligence and demand and price

forecasting should encompass the full range of agricultural output. This information for local and at national level will help in planning of production at the farmers' level. ICT enabled information on post-production aggregation, warehousing and transportation also needs to be developed for enabling extension functionaries and farmers to suitably use the information.

Creation of a National level farmers' database for delivery of farm specific advisory: KVKs and other extension agencies send farm advisory through mobile messages and even through web portals. But most of such messages which are sent in bulk to the farmers of a whole region or district often fall flat in their purpose of proving useful to the farmers because they are not farm specific and need based. Each locale, each farm, every farmer faces different problems and even demand different solution for same problem. Hence generalized advisory is not proving helpful. But in order to send farm specific messages extension workers should have access to the details of each farmer. So the creation of a National Farmer Database can be proposed which will contain the records of each farmer in the country with details of location, land resources possessed, crops grown season wise and respective area, sowing time, production and all such parameters at regional and national level. Such information can be collected with help of remote sensing to create the database. This would not only make the agricultural sector of India look more organized but also immensely help in agricultural research and extension purpose and effective delivery of farm advisory.

Gender mainstreaming: About 75% of 'rural women workers' are engaged in agricultural sector but their ownership of land in rural households ranges between a low of 6-11%. There is need for dedicated or special schemes that target women farmers exclusively, or those which seek to address the special challenges of women farmers in difficult conditions across the country. Farm women may be recorded as cultivator in revenue records or as farmers in a farmer

database making them eligible for all privileges received by farmers. Financial support in the form of micro capital assistance needs to be accelerated. Promoting women SHGs in operationalisation of on-farm and off-farm micro-enterprises with proper forward and backward linkages and support for markets can lead to enhancement of income of farmers. There is need for capacity building of women farmers for their active participation in the context of market-led extension. Enhancing the strength of women extension personnel and para extension workers should be given importance. It is suggested that at least 50% of the regular positions may be filled up with women extension functionaries at district and block levels. While there is no technological fix to the issue of gender bias, the extension system can be leveraged not only to empower the women as knowledge dissemination functionaries, but also by extension functionaries being provided specific targets regarding support to women farmers. Linking agriculture and nutrition by leveraging ASHA personnel and Anganwadi workers. Hence infusing gender reforms in extension system demands budgetary allocation from Union Government.

Strengthening technology backstop institutions: Technology backstopping can be strengthened by establishing a four-way mode of communication, between labs, from land to lab and lab to land, and between farms. Every village can be facilitated by an ACABC to offer the farmers doorstep service and also generate employment in the rural areas. The technical backstopping of the Farm Tele-Advisors needs strengthening and number of KCC can be increased. There is a growing market for agricultural journalists and broadcasters/telecasters having formal education in agricultural journalism and agricultural communication academic disciplines. Continuous capacity building of agricultural extension professionals in Agricultural Journalism deserves priority attention. Common Service Centres numbering 1.57 lakhs may be utilised to also serve as 'Extension



Delivery Points'. KVKs need to be strengthened to focus on income enhancing technologies in PPP mode (value addition, post-harvest, agri-business enterprises).

Need for climate smart agriculture: Climate change has dragged Indian agriculture to cross roads and left it to decide a right path between maximization and sustainability. The production of measure crops are declining and resource base is shrinking coupled with anomaly in climatic variables leading to a very critical situation for researchers, extension practitioners and especially the farmers. Certain ways and techniques have been designed to combat, mitigate and adapt risks generated due to climate change. Under National Innovations on Climate Resilient Agriculture (NICRA), climate resilient technologies applications were carried out with several institutional reforms and community led interventions. Total 151 Climate smart villages (CRVs) were developed consists of implementing these resilient practices at a scale to cover the entire village in a saturation mode depending on the resource endowments of the farmers with one or several interventions for imparting resilience to the production systems. Extension workers can help deliver timely weather information, demonstrate stress tolerant varieties among farmers and help with contingent crop planning. Farmer groups can be promoted to monitor excess use of pesticide and also popularize eco-friendly ways of farming with minimum external input. These success cases of 151 villages may be extended to about 6.5 lakhs villages in the country.

Agri-preneurship and business incubation through skill development of rural youth: Extension service can organise more buyer-seller meets to expand scope for direct selling by farmers, and to explore contract

farming where possible, besides farmer producer organisations and village producer organisations. The ICAR schemes like ARYA and Student READY (Rural Entrepreneurship Awareness Development Yojana) and Govt. of India schemes like Skill India, Start-up India, Stand-up India, *Pradhan Mantri Kaushal Vikas Yojana* are also playing significant role in capacity building of farming community, especially the rural youth. If business motive can be effectively induced into this component then successful agripreneurs can be developed in rural areas. Effective hand holding support and incubation should be provided to agri-start-ups which will attract youth towards agriculture and reduce their migration to urban areas.

Developing post -production infrastructure and processes: The huge post-harvest losses which farmers suffer every season can be reduced through establishing strong marketing networks and appropriate infrastructure. Storehouses, agricultural markets within a few kilometres with proper sheds and storage facilities, cold chain facilities for transportation and storage of perishables like milk are highly essential to combat such losses. Another way to not only reduce post-harvest loss but also to enhance farmers' income is to practise value addition or processing of farm produce. Value Addition and Technology Incubation Centre in Agriculture (VATICA) has been conceptualized by ICAR to create a facility to provide incubation training to rural youth in processing and value addition. ICAR on its own funding support will create 3-4 units as model units in the KVK campuses. KVKs are strategically located and linked with Agricultural Universities and ICAR Institutes to identify different trades and establish trade-specific value addition and incubation centres for educating youth and the farmers

to practice various components of technology management at the incubation centres and with the support from different lending agencies, they can establish their own processing and value addition units for commercial purposes. More such subtle initiatives by Government are required at ground level to reduce post-harvest losses and increase farmers' share in consumers' rupee.

Promotion of cooperatives and commodity clusters for quality Management and control over Market: There are plenty of examples of successful cooperatives in India among which brands like AMUL and Mother Dairy operate at national level. But unfortunately, these success stories have remained confined only to the dairy sector. Similar cooperative structures should be promoted in other agricultural products also to take advantage of aggregation of resources. Farmers can also be organized into Commodity Groups and Commodity Clusters can be formed. When the small farmers are facilitated to organize groups, trained and guided properly, they can attain tremendous development goal which would eventually make the group self-reliant and self-sufficient. Col. Deshwal of Bulandshahr, Uttar Pradesh, has set a unique example of such specialised agriculture and has secured the title of "Carrot King". Such clusters comprising farmers producing only a particular commodity can not only manage the quality of their product, share a uniform pattern of cultivation, pool resources but also exert command over that commodity's supply and price in the local market and also try for exports.

¹Deputy Director General (Agricultural Extension), Indian Council of Agricultural Research & Director, Krishi Anusandhan Bhawan, Pusa, New Delhi 110 012. Corresponding author's e mail: aksicar@gmail.com

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