

Current Status of Public Agricultural Extension in India and Ways Forward

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Abstract—Agriculture is the main sector and plays an important role in the development of the country like India. Development of agriculture means development of the nation. Healthy economic growth of Indian agriculture could lead the country to new heights of development. However, development of agriculture cannot be achieved by itself, but inclusive development of all the factors from input materials to farming community. Agriculture extension is one such factor which can make miracles in the agricultural sector. In India public agricultural extension is in transition and was neglected for several years resulted in brain drain of agricultural technocrats, and fall of our farming community by which they became easy prey of private agencies. So, the need of the hour is to revive the policies of agricultural sector and strengthen the public agricultural extension both at the central and the state level.

1. INTRODUCTION

Agriculture is the back bone of the Indian economy and plays a vital role in the overall development of the nation. Agriculture with its other allied sectors is the most important sector, wherein about 70% of the India's population, i.e, 830 million people, reside in rural villages, and depend primarily on agriculture. Agriculture sector employs more than 50 percent of the total work force in India and contributes around 17-18 percent to the country's GDP (Sunder, 2018). However, from the past few years overall agricultural growth is not showing progress upto its expectations. Economic think tank NCAER (National Council of Applied Economic Research) expects the agriculture gross value added (GVA) to remain flat in 2019-20, pulling down the country's economic growth rate to 6.2 percent in 2020, from 6.8 per cent in 2019 (Dhasmana, 2019). The population of the country is increasing day by day and this increase in population has to feed up, by the limited resources available. The present day development in the field of agriculture as well as its allied sectors are not upto the mark, which can take us forward and can feed our growing population. Besides, the younger generation are disinterested towards the field of agriculture and majority of

the farmers are ageing, and within coming years nobody will be there to grow food for the growing population. In 2016, the average age of an Indian farmer was 50.1 years. This is worrying because the next generation of the current farmers is quitting the profession. It means we are approaching a situation where one of the biggest consumers of food will be left with few farmers. According to the 2011 Census, every day 2,000 farmers are giving up the farming. The income of a farmer is around one-fifth of a non-farmer (Mahapatra, 2019). So it is important to revive the Indian agriculture in order to make the dream of "Doubling the Farmers Income by 2022" to come true. We have to change the present scenario of the agriculture by focusing and paying the particular attention to Research, Education and Extension of innovative agricultural technology.

Agricultural extension in the present scenario is the innovative approaches for knowledge management in agriculture and allied sectors by blending of traditional wisdom with frontier science and integrated application of Information and Communication Technology (ICT) to disseminate the right information to the right person in the right format at the right time (Mondal and Das, 2018). Agriculture extension in India is the core subject which bridges the gap between research labs and farmer's field. Unless and until, a country could not have the strong extension system, the innovative technology developed by the research agencies/stations may not be disseminated properly and farmers seldom adopt and benefit from such innovative technologies and obviously rely on traditional system of farming. So the utmost importance should be given to the extension service providers, through which right technologies will reach to the right people on right time. This paper will discuss the present scenario of the public extension services in India and the ways which can enhance these services in a better way.

2. CURRENT STATUS OF PUBLIC EXTENSION AND ADVISORY SERVICES IN INDIA:

Today in India, extension service providers include all the agencies in the public, private, NGO and community based initiatives that can provide agricultural advisory services to the farming community and enhance facilitation of technology application, transfer and management. The public sector extension services include agricultural institutes, research stations, line departments such as department of Agriculture, department of Horticulture, department of animal husbandry etc. The line departments which include different departments provide different services to the farming community and are the main extension service provider at the gross root level in the country. The private sector includes different agencies and companies which can provide extension services either free or charge for the services they provide to the farmers, besides. These two are the main extension service providers in India. Various schemes and initiatives have been taken from time to time in order to reach out the farmers in the country.

a) Indian Council of Agriculture Research

At the central level, Indian Council of Agriculture Research (ICAR) is the nodal institute for agriculture research and extension, and is an autonomous organisation under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare, Government of India. The ICAR has its headquarters at New Delhi. The Council is the apex body for co-ordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country. The ICAR has played a pioneering role in ushering Green Revolution and subsequent developments in agriculture in India through its research and technological development that has enabled the country to increase the production, thus making a visible impact on the national food and nutritional security.

b) State Agricultural Universities

The agricultural universities besides conducting research and education also help in providing advisory services to the farming community through exhibitions, melas, meetings and visits. Kissan Melas, field days and awareness programmes are being regularly conducted in all the districts for dissemination and awareness of innovative technologies.

In SKUAST Kashmir, more than 10,000 Soil Health Cards were issued to the farmers through various KVK's at district level. Technological Exhibition-cum-Seed Sale Mela are regularly held in the month of March every year at Shalimar Campus of the University where more than 02 lakh farmers, extension workers, unemployed youth, farm women, social worker, NGOs, students etc. participate for purchase of seeds, planting material, products and for learning innovative technologies.

c) Agricultural Technology Management Agency (ATMA):

ATMA is a society of key stakeholders involved in agricultural activities for sustainable agricultural development in the district. It is a registered society responsible for technology dissemination at the district level. It has a linkage with all the line departments, research organizations, non-governmental organizations and agencies associated with agricultural development in the district.

ATMA however provided a platform for interaction between line departments and farmers and brought some new concepts such as bottom up planning and commodity interest groups into field extension practice. However, as ATMA has been highlighted as an innovative example of agricultural extension. Lack of dedicated manpower, functional autonomy and attitudinal barriers at all levels further constrained ATMA from achieving its goals (Suleiman, 2012).

d) Krishi Vigyan Kendra's (KVK's)

KVK's are also known as Farm science centres and the first KVK was established in 1974 at Puducherry under the administrative control of Tamil Nadu Agricultural University Coimbatore. The number of KVKs has risen to 645 and 106 more KVKs are to be established in the newly created districts and some larger districts. The mandate of KVK is technology assessment and demonstration for its application and capacity development.

KVK is involved in On-farm testing for location specificity of agricultural technologies, frontline demonstrations to establish production potential of technologies on the farmers' fields, capacity development of farmers and extension personnel in order to update their knowledge and skills on modern agricultural technologies and to provide farm advisories using ICT and other media means to the farmers. In addition, KVKs produce seeds, planting material, bio-agents, live-stock and make them available to farmers.

KVK's are better farm advisory centres for the dissemination of information to the farmers. However, a single KVK for the farming community of district is not enough to tackle the problems of the farmers.

e) Agricultural Technology Information Centre (ATIC)

Agricultural Technology Information Centre (ATIC) is a "single window" support system linking various units of a research institution with intermediary users and farmers in decision making and problem solving exercise. The single window facility is provided at the entrance of ICAR institute or State Agricultural University (SAU) in order to enable the farmers to have the required information for the solution of their farm problems. It provides the diagnostic services for soil and water testing, plant and livestock health. It helps in supply of research products such as seeds and other planting materials, poultry strains, livestock breeds, fish seed, processed products, etc, emerging from the institution for testing and adaptation. It also provides sale of publications and

communication materials as well as audio-visual aids produced by the research organisation.

However, each ATIC is located at the entrance and vicinity of the State Agricultural Universities, the farmers residing in far flung areas do not prefer to visit such centres.

Services performed by the ATIC are as:

ATIC		
Products	Services	Information
Seeds Planting Material Tools and Equipments Value added Products Livestock Species	Soil and water testing Plant Clinic Veterinary Clinic Testing and calibration of small equipments	Exhibitions Audio-Visual Aids Farm Literature
Farmers and other end users		

**f) Agri-Clinic and Agri-Business Centre's (ACAB's):
(Better Farming by Every Farmer)**

The Agri-Clinic and Agri-Business Centre's (ACAB's) was launched by Ministry of Agriculture and farmer's welfare, Government of India, in association with NABARD (National Bank for Agriculture and Rural Development). The unique programme was established to take better methods of farming to each and every farmer across the country.

They provide expertise to the large pool of Agriculture Graduates available. Irrespective of whether the graduate is fresh or not, or whether they are currently employed or not, so that they can set up their own Agri-Clinic or Agri-Business Centre and offer professional extension services to innumerable farmers. For the success of this programme, the Government is providing start-up training to graduates in Agriculture, or any subject allied to Agriculture like Horticulture, Sericulture, Veterinary Sciences, Forestry, Dairy, Poultry Farming, and Fisheries, etc. Those graduates completing their training programme can apply for special start-up loans for venture.

Ceiling of project cost for subsidy is Rs. 20 lakh for an individual project (25 lakh in case of extremely successful individual projects) and up to Rs. 100 lakh for a group project, established by a group comprising at least 5 trained persons under the scheme (ACAB, 2018).

However majority of the trained agricultural graduates do not want to open these clinics because of hectic procedure for obtaining loans and low percentage of subsidy facilities available (44% of project cost for women, SC/ST & all categories of candidates from NE and Hill states and 36% of project cost for all others).

g) Kisan Call Centres (KCC):

Kisan Call Centres (KCC's) was launched by Ministry of Agriculture and farmer's welfare, Government of India on 21 January 2004 in order to harness the potential of ICT (Information and Communication Technology) in Agriculture.

The Call centres operate through toll free (1551 or 1800-180-1551) lines and are available from 06:00 AM to 10:00 PM on all seven days of the week at each KCC location. Kisan call Centre agents known as Farm Tele-Advisors (FTA's) are graduate or above in agriculture or allied sectors and possess excellent communication skills in respective local language. Queries which cannot be answered by these agents are transferred to higher experts.

In fact these centres may help in solving the problems of the farmers, but in actual majority of the farmers are not aware about these call centres and most of the farmers do not prefer to use the cell phones because of initial investment and monthly rental charges, which is the burden for them. Government should provide the scheme wherein a free cell phone and SIM card without monthly rental charges to each farming house hold.

Above all, much more can be done by the public extension service providers for the farming community in the country, but there is dearth of public sector extension staff in all the public departments which provide the extension services to the farmers. However, line Departments (department of Agriculture, department of Horticulture, department of animal husbandry etc.) of all the states in the country, are mostly affected by this dearth of extension staff, which hinder the progress and reach out of the extension agents to the farming community. Of the 143,863 positions in the department of agriculture, only 91,288 posts are filled (Gulati *et. al.* 2018). This huge un-filled position or gap in extension workers means that on an average, extension services reach only to 06.80% of farmers. Further, one extension officer served 1162 operation holding, i.e. the ratio of extension workers to operational holding is low at 1:1162 at the national level as against recommended 1:750 (Nandi and Nedumaran, 2019). Further, there is huge agro brain drain of the agricultural technocrats in every state of the country. The students graduating from agricultural universities switch to other professions leading to the huge loss of agricultural professionals in the department. So the Government should come up with a remedy to check this brain drain of the agricultural technocrats.

3. ADVISORY PROVISIONS OF PUBLIC EXTENSION IN INDIA

- i. Adequate technical support should be made available for extension.
- ii. Agricultural brain drain should be checked immediately.
- iii. Technology should be disseminated at a proper time and place.
- iv. Empower farming community to speak up and need to become part of policy discussions at local and national levels.

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- v. More efforts are necessary by the extension agencies to increase as well as update the knowledge about innovative technologies.
 - vi. Extension agencies should adopt pragmatic approach for demonstration of potentially improved technologies.
 - vii. Kissan Melas, field days and awareness programmes should be regularly conducted at block level for dissemination and awareness of new technologies.
 - viii. A research station should be set up at tehsil level in each state of the country.
 - ix. Soil testing facilities should be made available easily for the farmers.

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