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Indian Agricultural Extension Systems and Lessons Learnt: A Review

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ABSTRACT

This paper examined the Indian Agricultural Extension Systems and its strengths, weaknesses, opportunities and threats. Various lessons learnt over a period of time have also been documented. Hence, the paper recommends that the extension managers and policy makers should focus on the identified strengths, weakness, opportunities, and threats with a view of evolving an effective and sustainable extension system. There is an urgent need of making extension services truly more responsive to local concerns and national policy.

Keywords: Agriculture, Extension, Systems, India

INTRODUCTION

Agricultural extension in India has grown over last six decades. It is supported and funded by the national government—through its Ministry of Agriculture (MoA) and other allied ministries. The share of agriculture in Gross Domestic Product (GDP) has declined from over half at the time of independence to less than one-fifth. Indian agriculture sector has an impressive long-term record of taking the country out of serious food shortages despite rapid population increase, given its heavy reliance on the work of its pluralistic extension system (Suman, 2014) In India, there are five major agricultural extension systems devoted to extension: (i) the Ministry of Agriculture at central level, including the Indian Council of Agricultural Research (ICAR) and the Directorate of Extension (DoE); (ii) State Departments of Agriculture (DoA), as well as the State Agricultural Universities (SAUs); (iii) the Departments of Agriculture (DoA), Animal Husbandry (DAH), Horticulture (DoH) and Fisheries (DoF), as well as the Krishi Vigyan Kendra (KVKs) and, more recently, the Agricultural Technology Management Agency (ATMA) at the District level; (iv) also, there are a wide variety of producers groups, including cooperatives and federations of milk, fruits, cotton, oilseeds, coconut, spices etc.; as well as (v) civil society organizations, such as the Non-governmental Organization (NGOs). An overview of this pluralistic extension system is depicted in Fig.1. The main responsibility for extension activities rests with state governments, since agriculture is a state subject. The central government also implements several technology transfer plans through state governments (Suman, 2014). Also, Indian agriculture is becoming increasingly more pluralistic in nature, where a large number of private sector firms and civil society extension service providers (e.g. NGOs) co-exist with this public extension system.

SWOT Analysis of Indian Extension Systems

Strengths

India is in process of transforming its agricultural extension and technology transfer systems to become more demand-driven and responsive to farmers' needs. There is need to develop skill and knowledge on scientific agriculture. Its wide extension system could be visualized through these facts (1) India has second largest extension system in the world in terms of professional and technical staff. More than 90,000 technical personnel constitute its extension system (Brewer, 2000). Hence, needs to utilize these large human resources in the effective transfer of technology process and (2) There are 100 million farm families supported by the large agricultural extension services, which is financed by state governments. Since independence, it has used different extension approaches with mixed

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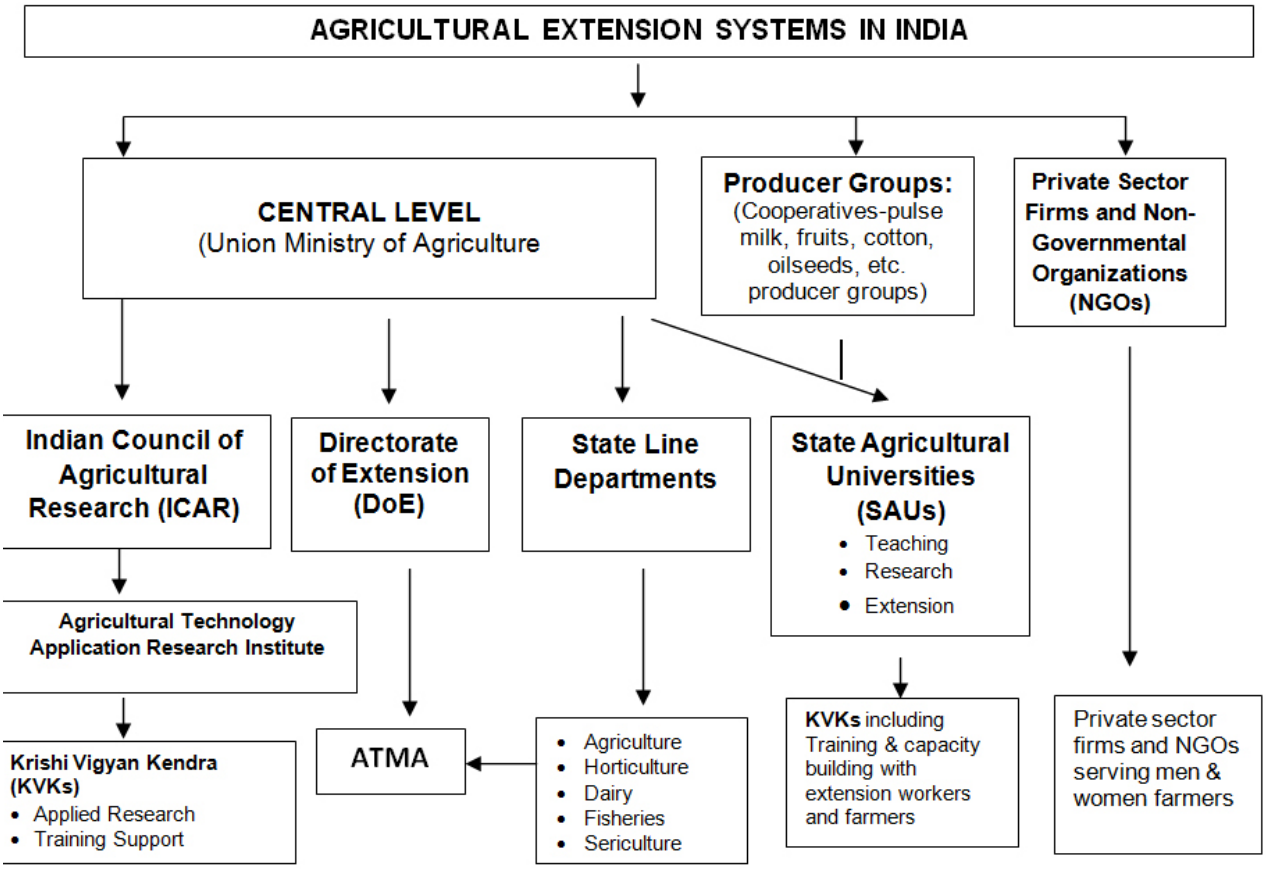

Fig. 1: Agricultural Extension Systems in India

results supported by over 90,000 staff members (Swanson and Mathur, 2003).

Weaknesses/Constraints

Existing weaknesses/constraints in Indian agricultural extension system are mentioned as the problems and constraints of extension system as identified by Singh *et al.* (2006) are: (i) Top-down approach (ii) Being commodities and supply-driven specific (iii) Declining farm income (iv) Lack of farming system approach (v) Accountable to government than farmers (vi) Weakening research-extension linkages, and (vii) Little focus on empowering farmers.

Swanson and Mathur (2003) reviewed agricultural extension system constraints as; (i) Multiplicity of public extension systems (ii) Narrow focus of agricultural extension system (iii) Co-mingling of government schemes and extension activities (iv) Lack of farmers involvement in extension program planning (v) Supply rather than market-driven extension (vi) Lack of transparency and accountability (vii) Inadequate technical capacity (viii) Lack of local capacity to validate and refine technologies (ix) Lack of emphasis on farmers training (x) Weak research-extension linkage (xi) Weak public sector linkages with private sector firms (xii) Inadequate communication capacity (xiii) Inadequate operating resources and financial sustainability. (xiv) Since T & V system ended, there has been little donor support for extension, and reliance almost solely on state government funding. Extension system of 1990s has been described as weak, ineffective and inefficient (Raabe, 2008 and *Suman, 2014*). Extension services are characterized by biases that result in tending to neglect poor farmers, particularly women. There has been a wide range of chronic problems in public provi (Bharati *et al.*, 2014). (xv)High staff vacancy rates, low social status, low rank in the administrative system, lack of operational funds for effective field work and high turnover were reported by Birner and Anderson (2007).

Major constraints emphasized in 11th Five Year Plan recommendations were: (i) Lack of convergence in operationalization of extension reforms (ii) Lack of provision for dedicated manpower at various levels (iii) Inadequacy of funds (iv) Lack of infrastructural

support below district level, and (v) Inadequate support for promotion of farmers' organizations and their federation.

Opportunities

Public sector extension in both developed and developing countries is undergoing major reforms. Agricultural extension continues to be in transition as governments and international agencies are advancing structural, financial and managerial reforms to improve the pluralistic extension system. Decentralization, pluralism, cost sharing, cost recovery, participation of stakeholders are some of the elements in extension's current transition. Views on extension have changed from an agency of technology dissemination with emphasis on agricultural production to helping farmers organize themselves, linking of farmers to markets (Swanson, 2006) and providing environmental and health information services. The recent reform-oriented initiatives have been directed towards creating a demand-driven, broad-based and holistic agricultural extension system (Planning Commission, 2005). This has involved the design and introduction of a multitude of integrated measures that—on the demand side-enable service users to voice their needs and hold service providers accountable, and-on the supply side influences the capacity of service providers to respond to the needs of the extension service users (*i.e.*, the farmers).

Challenges /Threats

In current scenario, where a numbers of stakeholders are involving in agricultural extension, hence, opportunity to reach a greater number of farmers is increasing. In this context, private sector is incorporating extension services within existing service provisions and experimenting with ICT. But inherent challenges each sector faces in reaching different farmers means that partnership and coordination between sectors will best serve the interests of farmers. Hence, addressing of current challenges is necessary.

Public Sector Extension System

In Indian extension system, information flow within public sector moves linearly, with content focusing on transfer of technology for enhancing agricultural production. A wider definition of agricultural extension, beyond improving crop productivity, has not been embraced. Information flow is supply-driven and not need based or area specific (Raabe, 2008), therefore farmers see the quality of information provided by public extension staff as a major shortcoming (NSSO, 2005). There are also insufficient funds for operational costs, training, and capacity development, which limits the activities and continual development of the extension staff (Swanson, 2006). However, it was experienced that there are about 90,000 on the job, which is an adequate number of extension workers for the number of farmers (about 130 million). Various line departments at the state and district levels have been criticized for working in isolation, with weak linkages and rare partnerships. The research–extension link has been criticized for not absorbing or using feedback from farmers and extension staff. Extension personnel and farmers are passive actors, and scientists have limited exposure to field realities (Reddy *et al.*, 2006). Numerous components of public-sector extension system suffer from duplication of programs, without convergence. While ATMA is pushed as the platform through which the multiple agencies can converge, the implementation difficulties are proving great for effective integration, with shortages of both personnel and funds (Working Group on Agricultural Extension, 2007).

Private Sector Extension System

To diffuse agricultural information directly to farmers, private-sector examples are developing context-specific models and using ICT tools. In India, private sector is playing an important task in extension services. The public sector recognizes this, with the policy framework for agricultural extension referring to the need for public extension services not to crowd out private services. Additionally, policy framework for agricultural extension notes that "public extension by itself cannot meet specific needs of various regions and different classes of farmers" (India, DAC, 2000). In the pluralistic extension systems, private sector can provide services related to proprietary goods, while the public sector can provide extension services related to public goods, which tend not to be addressed by private-sector firms Furthermore, private sector serves a corporate interest, working with individual farmers, so social capital is not built. Moreover, private extension can only work well if farmers are willing and able to pay indirectly through the sale of inputs. It was suggested that private sector could serve the needs of medium-size and commercial farmers, while the public sector could work in remote areas, which are currently not serviced well. This sort of system would require Public-Private Partnership (PPP) that currently does not exist in India. It would mean changes in the way the public sector views and interacts with the private sector. Relying on the public sector may also be difficult for remote and resource-poor farmers,

considering the existing problems and poor reach of the public sector in those areas.

Civil Society (NGO) Extension Systems

Within information value chains, the capacity of farmers to articulate their needs will influence their ability to obtain information they need. Considering a large number of marginal and small land holdings in India, both the Farmers Interestes Groups (FIGs) and Self Help Groups (SHGs) can play important roles in articulating the needs of men and women farmers to knowledge intermediaries. These FIGs/SHGs can operate side by side with either NGOs or the public sector. However, challenges exist in both sectors (i) Public capacity to build FIGs and SHGs is limited, while NGOs, which are not numerous, rely on donor funds and would need public support to develop the technical skills to facilitate groups, (ii)Building social capital is critical in overall agricultural development strategies for reducing rural poverty (Swanson, 2006). (iii) In a large country like India, through public extension system, meeting of scientists with farmers and visit of farmers to research institutes is a time consuming and difficult task. Both FIGs/SHGs are already emerging as an effective mechanism for both the transfer of technologies and the empowerment of the rural poor (Meena *et al.*, 2003; Meena *et al.*, 2008). Adoption of this approach can reduce the extension cost and workload of extension functionaries. (iv)For that, ICTs could be useful tools to increase connectivity between the various FIGs/SHGs and different extension approaches. Covering the whole country where diversities and complexities are prevalent in agriculture as well as mentally makeup for converting into social capital (especially of the downtrodden, like landless laborers, smallholders, rural women etc.,) is a herculean task. (v) Capacity building of SHGs/FIGs and promoting development of leadership and management skills are utmost needed so that farmers can demand information they need. It is therefore an important component of agricultural extension approaches (*Bharati et al*., 2014).

LESSONS LEARNT

In the present scenario of changing climate, fragmented and small land holdings, non-judicious use/limited water availability, indiscriminate application of inputs, increasing fuel costs, lack of efficient market opportunities etc.—farmers want access to timely, reliable, and relevant information which can support the complexity of their farming systems. Presently, Indian agricultural extension has wide mandates and despite the pluralistic extension approaches, its coverage and use of services is limited; particularly in rain-fed regions that are represented by marginal and smallholder farmers'. (i) There is need to develop "need-based" capacity building of small-scale men and women farmers, as well as gaining access to reliable information in increasing their productivity and profitability for livelihoods improvements. (ii) Local contexts necessitated the innovative extension approaches in India; evolved over time which has expanded beyond the linear transfer-of-technology approach, but this still has shallow roots within the public extension system. However, Indian public extension system is still a major source of knowledge for the needy men and women farmers and receives significant investment from the central government. ATMA is the key component, which proved very useful during the pilot study and is now functioning throughout India. (iii) At the national level, it still carries some of the deficiencies of the public-sector extension system, which has reduced its impact due to limited staff, poor capacity, and weak links to the research system (especially the KVKs), as well as limited reach to farmers. Hence there is need to delink public administration from extension and the need to be more closely linked with the research system, especially the KVKs at the district level, where specific technologies are largely generated. (iv) India's pluralistic extension system includes public sector, private sector and NGOs, all playing different roles; however, these sectors still tend to work in isolation. The difficulties of working with the public sector mean that the private sector has few partnerships with public-sector extension. It should be noted that agri-clinics and agribusiness centres supported by MANAGE–has proved to be a very successful PPP that should be strengthened and encouraged. It can strengthen the link between agripreneurs and agribusiness companies, as input supply is considered to be an important component of many agriclinics. There must be softness at the local level to facilitate PPP so that complementarities can be achieved to meet the needs of men and women farmers. Nevertheless, the need to inculcate the PPP concept in their culture and attitudes is not common. (v) Building social capital is critical in overall agricultural development strategies aimed at reducing rural poverty. FIGs/SHGs have already emerged as an effective mechanism of empowerment and development of rural poor. Efficient transfer of technology to the user population is also evident from different studies. It can reduce the extension cost and workload of extension functionaries to a greater extent. Contacting farmers (FIGs/SHGs) is an innovative

idea for public extension, while ICTs can increase the connectivity between the various FIGs/SHGs and extension. (vi)India's pluralistic extension system must be capable to tackle the diverse emerging issues in agriculture. This system should also support and deal with the pertinent areas beyond the production aspect, such as processing and value addition, market access, trade, agribusiness management, natural resource management, gender, climate change etc. Within this paradigm of innovation systems, extension agencies can act as innovation intermediaries or innovation brokers, working with many partners to strengthen linkages and provide support for innovations including extension delivery.

CONCLUSION

In agricultural innovation systems, there are still large gaps between research and extension approaches. Hence, there is need to evaluate the performance and socio-economic impacts of research and extension programs. Also, a greater understanding of Public Private Partnership (PPP) is also required; including the mechanisms that help encourage partnerships. There is a want for a thorough evaluation of extension approaches in order to identify best practices and to understand their impact on farming communities in reaching small-scale and marginal farmers.

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