

Tradeoff between public private partnership in Indian agriculture

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Progress of agriculture has been impressive in production terms over years, and the country now ranks in top positions in production for most of the agricultural items in the world. The food grains production increased from 74.23 million tonnes in 1966-67 to 209.80 million tonnes in 1999-2000 and further India's food grain production is estimated to rise 3.74% to a new record of 308.65 million tonnes in the crop year 2020-21. India though has become self-sufficient in food production, increasing production and productivity for sustaining upcoming future population is a major challenge before agricultural scientists and farming community. Agricultural extension services provide critical access to the knowledge, information and technology that farmers require to improve the field productivity and thus improve the quality of their lives and livelihoods.

Keywords: Agricultural extension services, AgriculturaMI information, Public private partnership, Timely access

TIMELY access, affordability and appropriateness of agricultural information is very crucial for raising agricultural productivity among the developing countries. Ever-growing population, low and untrained manpower, inadequate budget for extension activities, administrative loop holes are major constraints with respect to agricultural extension.

After globalization, the Indian economy has opened up many opportunities and challenges for the stakeholders of Indian agriculture. There had been a paradigm shift in extension approach from staple-based subsistence system towards an intensive information based commercialized entrepreneurship. There is a strong need of partnerships across institutions and sectors in agriculture to improve overall agricultural ecosystem quality and quantity-wise. Public Private Partnership (PPP) in agriculture is one such partnership which has potential to leverage strengths of both public as well as private extension for input, resource, market, risk, technology and benefits, under effective policy guidance.

Public private partnership: Concept and coverage in agriculture

Public private partnership is a cooperative and collaborative arrangement between two or more public and private sectors, typically of a long-term nature. A public private partnership is a contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, skills and assets of each sector (public and private) are shared in delivering a service or a facility for the use of the general public.

In addition to the sharing of the resources, each party shares risks and rewards potential in the delivery of the service and the facility. The rationale for public sector involvement differs between different kinds of services and influences the type of involvement required. Planning Commission of India has defined the PPP in a generic term as a mode of implementing government programmes/schemes in partnership with the private sector. It provides an opportunity for private sector participation in financing, designing, construction, operation and

maintenance of public sector programme and projects. PPP models describe the different types of partnerships agreement between public and private sector as shown in Table 1. During last decade, several partnerships have been developed between public and private sectors in Indian agriculture mainly in fields of agricultural research, extension and marketing. There are many successful examples of PPP model in agricultural basic and applied research (Table 2).

Tradeoff between public-private partnerships in Indian Agriculture

Strength and weakness of public extension: At the time of Green revolution, public extension played a very crucial role in disseminating high yielding varieties, but with advent of time, the effectiveness and coverage of public extension became weak. The genesis of private extension may be because of two reasons, viz. firstly, inability of the public extension to reach all the farmers, all the time, regarding all problems created the space, which is gradually filled by private extension. Secondly, the services which are not fully covered by

Table 1. PPP models for partnerships between public and private sector

Model	Role of private sector	Role of public sector
Build-operate-transfer (BOT)	Finances, builds and operates	Buys back or leases
Build-operate-own (BOO)	Finances, builds and operates	Resource allocation
Leasing	Design, building or operation but not financing	Risk transfer partly
Concessions	Awarded full responsibility	Service provider to regulator
Joint ventures	Jointly finance, own and operate a facility	
Operational/service management contracts	Managerial and technical assistance	Finances
Informal public-private co-operation	Coordination among national and local government, donors, organisations, agencies, civil society and NGOs	

Source: Shukla R, Sharma S and V M Thumar. 2016. Role and importance of public private partnerships in agricultural value chain and infrastructure. *International Journal of Commerce and Business Management* 9(1): 113-118.

Table 2. Successful PPP models in Indian agriculture

Coverage in agriculture	PPP model
Research	• PPP project in vegetable biotechnology between Collaboration on Insect Management for Brassicas in Asia and Africa (CIMBAA); ICAR; Asian Vegetable Research and Development Center (AVRDC), Taiwan; University of Melbourne, Australia; Natural Resources Institute, University of Greenwich, UK; University of Cornell, USA; and Nunhems. • Hybrid rice seed production by IARI and private parties • World Bank funded NAIP project of ICAR comprising public and private partners for establishing market oriented collaborative alliances • PPP between Mahagrapes; Maharashtra State Agricultural Marketing Board (MSAMB); NRC on Grapes; National Cooperative Development Commission (NCDC); APEDA and NHB to provide cooperatives with certification (EUREPGAP) and other support • PPP for gender mainstreaming in agriculture in six states of India benefiting farm women to access technology and market
Extension	• Agricultural Technology Management Agency (ATMA) commodity-based groups partnership with private agencies in production and marketing of basmati rice and medicinal plants in Bihar, maize in Andhra Pradesh and mango in Maharashtra • MANAGE, Hyderabad, Department of Agriculture (DoA), Government of Madhya Pradesh and the Dhanuka Agritech partnership for marketing plant protection chemicals including eco-friendly products
Marketing	• ICRISAT's Hybrid Parents Research Consortia partnership with 34 small and medium sized domestic firms for commercializing sorghum, millet, and pigeon pea hybrids. • ITC e-choupal and the National Dairy Development Board model of public-private partnership to provide direct marketing

Source: Ponnusamy K. 2013. Impact of public private partnership in agriculture: A review. *Indian Journal of Agricultural Sciences* 83(8): 803-807.

public extension are being covered by private extension especially input supply, market support, processing etc. The weaknesses of public extension are as follows:

Wide extension worker to farmer ratio: The extension worker: farmer ratio is very wide in India. For hilly, irrigated and rainfed region, it accounts for 1:400, 1:750 and 1:1000 respectively (Ashok Dalwai Committee report on Doubling Farmers' Income 2018). The ratio further widens because at least, 25% of extension workers are administrations /supervisors who are not directly in touch with farmers. With remaining extension workers, at least 50% of the time goes for administrative work, official correspondence, reports and travel to reach villages. Excluding the leave period, holidays, an extension worker attends office for about 250 days in a year.

Lack of trained village level extension workers (VLWs): There are many qualified persons employed in different positions in agriculture and other line departments, but the person who is in direct touch with farmer is VLW. Only 20% of total VLW are trained manpower who can actually understand and handle agricultural problems professionally. In this context, transferring the emerging technologies to the poor and illiterate farmer at village level is a challenging task. At present, the role of VLW is confined to providing advisory to the process of production. But, today farmers need export oriented, timely and customized information with respect to processing and marketing. Advisory is confined to recommendation of technologies but whereabouts of inputs, information on price and infrastructure for storing, processing is left to the

farmer, which is more crucial. The VLW is responsible to provide information but not accountable to the consequences. Hence the importance of extension worker is reducing in the eyes of the farmer. Thus, the information provided by the peers out of their experience and the inputs by the dealer for credit gained importance in the eyes of the farmer.

Strength and weakness of private extension

The globalization and liberalization era has led the extension system to reorient itself and forge multi-institutional partnership. Extension-experts and economist are proposing effective partnership between private and public extension service, in collaborative mode. The experience in promotion of private extension service since last two decades around the world, especially of China, United

Kingdom, the Netherlands, Brazil and Australia had established the fact that the private sector could deliver efficiently and profitably.

Private extension has much strength which can overcome the weakness of public extension. These includes, efficiency of delivery channels and economic efficiency in services, more demand-driven rather than supply-driven, high quality of services in terms of satisfying information needs of clientele, trained manpower, sustained finances and resource allocation, providing for an information mix and choices available to farmers, closeness to markets and input companies, better linkages with research, better competition among private agencies for reaching people effectively or for profits, flexible in program implementation and pragmatic in approach, thus catering according to the specific needs of clientele only.

With these strengths, private extension has its own weakness which public extension can suffice under PPP models. The major weakness of private extension includes: information becomes excludable in the short term due to differences in speed of information dissemination or medium used, more face-to-face contacts (person oriented) and less emphasis on mass media usage, thereby chances of overlooking poor, increased dependence of farmers and hence exploitation and manipulation of farmers becomes the order of the day. Starting from sowing to virtually every field operation, farmers shall need some or other assistance and payments cannot be deferred nor based on impact; since information becomes a private good and extension becomes an economic input.

Private sectors investment in agriculture in India

Economic Survey 2018-19 showed that in India, there was a gradual increase in share of private investment than public. Private sector accounts over 80% share (₹ 2.19 trillion) in total investment in agriculture. Private sector's contribution in agricultural marketing, extension and research is becoming increasingly important

especially with the introduction of biotechnology, information communication technology and protection being given to intellectual property. Private sectors taking lead in marketing, extension and research, value added services, and cost-sharing arrangements with public, private, NGOs and farmers' organizations.

Approaches of private extension and association with farmers

Private extension, providing effective services to the farmers is becoming prevalent in developing countries like India. A number of approaches in private extension are followed in India, viz. share cropping system, contract farming system, consultancy farms, input-cum-advisory extension, voucher system agribusiness-cum-extension, farm clinic-based extension, NGO based extension, etc.

Privatization of extension service in India has adopted a variety of forms involving different stakeholders. Corporate sector participation covers the involvement of three categories of private groups-input firms, consultancy firms and contracting firms. Most of the agro-input firms perform the function of marketing, in which the marketing personnel also oversee extension related functions. Farmers join together to avail the services of consultants in the case of cash crops like coffee, tea, etc. There are farmers who have come together to have

professionals on a retainer ship basis. There are many farmer organizations with facilities for paid consultancy services. With growing agro-exports, many foreign consultants are providing their services to Indian farmers and companies. The major stakeholders and the possible configuration in which they participate are presented in Table 3.

The various farmers' associations organize different types of services for themselves, including input supply, credit, technical services and marketing arrangements- activities that would increase their productivity and time, and at the same time, reducing their dependence on the public sector. Agricultural service is also offered through voluntary organizations, which is presently being encouraged by the public sector to a large extent. There are many NGOs, which can even compete with the public extension system in offering various services for farmers. The role of private media organizations in technology transfer is also commendable.

Convergence of public and private sector in agriculture

In the process of privatization, public extension is always a part. In private extension, players are agricultural consultants, agricultural consultancy firms, progressive farmers, farmer's organization / co-operatives, non-governmental organizations (NGO's), Krishi

Table 3. Stakeholders and the possible configuration in private extension

Major stakeholders	Sub groups	Participation configuration	Example
Private corporate	a) Input firms	Information support Sponsorship Cost Sharing Training	Indo-American Hybrids Aspee Sandoz
	b) Consultancy firms	Project consultancy Technical consultancy Managerial consultancy	Agrotech Good Earth Green Valley plantations
	c) Contracting firms	Main-contracting Sub-contracting	ITCCAICO
Farmers associations	Producers Consumers	Self help groups Co-operatives	KHDP IFFCO, RIBHCO
NGO's	Individual Charitable Professional	Self help groups Neighbourhood Organized services	Mitraniethan BAIF PRADAN
Media organisations	Print Electronic	Information support Sponsorship	Karshaka Shre Asianet, Surya

Source: Prasad R M. 2001. Private Extension System-Options and Issues. Private Extension in India: Myths, Realities, Apprehensions and Approaches. MANAGE, Hyderabad.

Vigyan Kendra's (KVK's), agribusiness companies, input dealers, newspapers, agricultural magazines, private television channels, private sector banks, internet and donor agencies. Technological advancement in the areas of communication and information technology, opening out of public research and educational institutes to part with the technologies, changing-cropping trend and emergence of contract farming, need to earn more from smaller holdings, inability of the public extension system to reach the large target client system and loss of credibility in the existing extension system has paved a way for private extension in India.

There are five well-specified extension systems prevalent in our country which are Front-Line Extension Education System (ICAR/SAUs), Programmes of Agricultural Development by Central and State Governments, Special Extension Programme on Specific Crops, Rural Development Programmes and Extension Programme of Non-Governmental Organizations, each having its own mandate on poverty eradication. The First-Line Extension System of Ministry of Agricultural Research (ICAR) and State Agricultural Universities (SAUs) have only limited jurisdiction in coverage, while comparatively Extension System of Ministry of Agriculture is having a broader network. The non-government organizations engaged in extension activities include mostly voluntary agencies (partly or fully funded by government for extension activities), business houses, agricultural processing firms, producer's co-operatives, input agencies and private consultants.

Seeking the possibility of convergence in Indian context, we have to look into two crucial points, first– the ability of the farmers to pay for the extension services; and secondly– how to demarcate the benefits of extension as private and public. In India, according to the latest Agriculture Census (2015-16) published in 2019 by the GoI, 86.08% of the operational farm holdings are small and marginal. So, the scope of privatization or cost

Table 4. Role and responsibilities of public and private sector under PPP convergence

Public sector	• Focus on public good activities such as technology transfer, education (about soil and water conservation, safe use of pesticides, natural resource management, and disease forecasting) and human resource development. • Deciding policy issues, quality control, control by rule functions and on channeling assistance and establishing mechanisms to benefit resource poor farmers and farmwomen. • Monitoring and controlling private extension system quality. • Deciding policy and programmes. • Backward linkage.
Private sector	• Focus on exact needs of special clientele groups/farmers. • Rural knowledge systems. • Execution of projects and strategy. • Forward linkage.

sharing for extension services in Indian situations is limited owing to poor socio-economic conditions of majority of farmers. But the situation in irrigated areas is quantitatively different, where the farmers are relatively prosperous as against their counterparts in rainfed areas. This potential in irrigated areas can be made use of to a certain extent in cost recovery approach. Thus, there is a need of a well-researched and operationalized convergence model for public private partnership so that clear-cut roles and responsibilities could be taken up by public and private sectors to maximize the profit to all types of farmers.

Towards public-private-community partnerships (PPCP) approach

It is a synergistically operational model that used to achieve sustainable development in which the three parties jointly develop a business unit/service of mutual benefit and provide maximum benefit to the wider community. Within this framework, the private sector will get the long-term benefits in the balanced inclusivity between the chain of producers and consumers. The public sector will benefit with additional resources and the value of investments and the assuredness of participation and ownership of the parties; while the community will benefit by acquiring of skills, knowledge and new technologies.

Privatization of extension services does not aim at substituting private sector for public extension service. It essentially aims at a reduction in the role of public sector to pave way for an enhanced role of private initiatives in the agricultural extension service.

Public extension in India should continue policy advocacy, monitoring and evaluation of the grassroots work done by both public as well as private sectors. Private extension can really execute projects at grassroots level very well. Phasing of privatization is more desirable as the poor farmers continue to be benefited from public extension and rich farmers can be catered by private agencies. Total privatization is not feasible and even not advisable as it can lead to monopoly of one sector.

The policy issues related to supply of credit, land holding, prices, input and marketing are crucial. The efficiency of an extension service for farmers depends on the effectiveness of planning at four levels, viz. policy, programme, projects and strategy. These four levels should be planned by public sector. When private extension organizations get involved in provision of extension support to farmers, there will be competition among the various extension providers, which will take care of consumer welfare and public interest, along with competitive advocacy and competition culture. Single development agency may have limitations of resources. That is why convergence is needed: a clear strategy for a planned multi-stakeholder involvement with mandated activities as per their expertise, to supplement and complement the efforts and to ensure effective involvement of community partnerships.

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