Asian Journal of Agricultural Extension, Economics & Sociology

29(1): 1-14, 2018, Article no.AJAEES.45813
ISSN: 2320-7027

Agri-Marketing Partnership: An Indian Perspective

Shakeel-ul-Rehman[1]*

[1]Department of Management Studies, Islamic University of Science and Technology, Awantipora-192122, Jammu and Kashmir, India.

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Article Information

DOI: 10.9734/AJAEES/2018/45813
Editor(s):
(1) Dr. Sait Engindeniz, Professor, Department of Agricultural Economics, Faculty of Agriculture, Ege University, Turkey.
Reviewers:
(1) Abdullah-Al-Zabir, Sylhet Agricultural University, Bangladesh.
(2) A. K. M. Golam Kausar, Bangladesh Agricultural University, Bangladesh.
(3) Iulia-Cristina Muresan, University of Agricultural Sciences and Veterinary Medicine, Romania.
Complete Peer review History: http://www.sciencedomain.org/review-history/27524

Review Article

Received 09 October 2018
Accepted 14 December 2018
Published 22 December 2018

ABSTRACT

The partnership extension involves any personnel in the private sector delivering physical or advisory services in the areas of agriculture and is viewed as assistance to public extension. Increased agricultural productivity and rapid industrial growth in the recent years have contributed to a significant reduction in poverty level, from 56% in 1973 to 17% in 2017. Despite the impressive growth and development, India is still home to the largest number of poor people of the world. With about 250 million below the poverty line, India accommodates about one-fifth of the world's poor. About 25% children suffer from serious malnutrition. More than 90% of the rural pre-school children and rural pregnant women are anemic. Moving towards a vision of developed nation by 2022, Indian farmers still face a lot of complications of not getting a maximum return for their produce which results in outmigration and farmer suicides. Though much has been done in stimulating agricultural development in India by governments as well as by private organizations, still much more is needed in this sector to make farmer self-sufficient and resourceful. It is the call of the country to make agriculture as the most prioritized sector, as other sectors are dependent on it. The present paper brings out some of the agri-business ventures by corporates and government into light and the success they have achieved in uplifting the Indian agricultural community. The paper also tries to highlight the gap in terms of agricultural inefficiencies. Although the present paper lures as findings from the Indian context, it is believed that the present study may have equal relevance to many of the developing countries that are facing similar problems in agricultural sustainability and diversification.

*Corresponding author: E-mail: rehman.shakeel@islamicuniversity.edu.in, srehman278@gmail.com;

Keywords: Agri-business; agricultural cooperation; privatization; market linkages; self-help groups; non-government organizations; information and communication technology.

1. INTRODUCTION

Agriculture is the primary source of livelihood for about 52 per cent of India's population. Gross Value Added by agriculture, forestry and fishing is estimated at Rs 17.87 trillion (US$ 274.23 billion) in FY18. Sustainable growth and development of agriculture and allied sectors directly affect well-being of farmers and rural people at large, their prosperity and employment and also forms an important resource base for a number of agro-based industries and services. With coordinated and integrated efforts made by various stakeholders and more so by farmers, the food grain production has gone up substantially and growth of horticulture crops has surpassed even the food grains production and productivity.

The changing nature of agriculture towards commercialized farming, the entry of people from industrial sector, non-professionals, the educated elite, and others to take up agriculture has led to the order of appropriate and officially sound advice with reliable market-oriented agricultural extension service like: Establishment of private market yards/ private markets managed by a person other than a market committee, Direct purchase of agricultural produce from agriculturist (Direct purchasing from Producer), Establishment of farmers/ consumers market managed by a person other than a market committee (Direct sale by the producer), Contract Farming, Promote and permit e-trading, Single point levy of market fee across the State/ UT, Unified Single Trading Licence valid across the State/ UT and many more to come.

These conditions paved the way for emergence of agricultural consultancies and agri-business firms in the dispersal of the agricultural technology. Growth in agriculture has a maximum rising impact on other sectors, leading to extend its benefits over the entire economy and the largest segment of population. 141 million hectares is the Net Sown Area, while 198 million hectares is the Gross Cropped Area. The Net Irrigated Area is 68.1 million hectares out of 160 million hectares with a cropping strength of 124 per cent. 82 per cent of farmers have small and marginal land holdings. The agriculture sector contributes a low of 17 per cent of India's Gross Domestic Product (GDP), 11 per cent of total exports and provides employment to around 50 per cent of the work force. The annual agricultural growth rate during 2005-06 to 2011-16 averaged around 2.84 per cent, which is less compared to the people engaged in it and with other sectors. Agricultural food grain Production in last four decades crossed 240 million tones from1970-2016. Availability of food grains per person increased from 451 gm/capita/day to over 476 gm/capita/day, even as the country's population is increasing, but India is still having world's most number of under nourished people.

In India and many of the developing countries extension is not merely transfer of technology and information, it takes care of the broad perspective of human resource development of its clients [1]. Further privatization of agricultural extension service refers to the services rendered in the area of agriculture and allied aspects by extension personnel working in private agencies or organizations for which farmers are expected to pay a fee (or free) and it can be viewed as supplementary or alternative to public extension services [2]. The rapid growth of agriculture must be essential not only for self-reliance but also for meeting the food and nutritional security of the people, to bring about even handed distribution of income and wealth in rural areas, and to reduce poverty and improve the quality of life. Partnership is the act of augmenting the role of government or increasing the role of private sector in an activity or in the ownership of assets. Very often private extension and privatization are viewed similarly. Privatizing extension, as one strategy for providing efficient services to farmers, is finding acceptance in developing countries, including India. The farm sector is becoming more commercial and diversified. As production shifts to higher value sectors including dairy, horticulture, fruit, fisheries, poultry farming and aromatic and medicinal plants, among other lines of production. Large numbers of small farmers are known to benefit from this trend [3].

Today the private sector plays decisive roles in India's agricultural transformation. It is fostering productivity improvements and creating jobs and value in supply chains "from farm to fork." The partnerships have transformed the agri-food landscape in the period since the early 1990s as India shifted from import substitution and protectionism to more open markets [4]. In this context PepsiCo India's potato farming programme connects with more than 12,000

farmer families across six states. Initiatives by corporates like: HLL, ITC, Pallis, Tata, Mahindra & Mahindra, Wall Mart, Big Bazaar, P&G, Ikea, Godrej, etc., could not be underestimated and ignored as these companies have benefitted the agricultural community in one or the other way. In this context the objective of present paper is to briefly review the performance of agriculture in terms of partnerships through both government and private initiatives.

2. LITERATURE REVIEW

The rationale for private sector provision of agricultural extension services is generally based on an expectation of increased efficiency with the operation of private markets and with the resulting efficiencies contributing to the growth of a country's Gross National Product [5]. As established by Najoku et al. [6] that the rural people become more receptive to a new technology or service and achieve higher levels of production and income through people participation programs. This helps in building net cash surpluses that strength the groups' economic base and contribute to rural capital formation. Further Sulaiman [7] suggested that unless extension grows beyond technology transfer, and clearly articulate its role in facilitating broader changes supportive of evolving rural livelihoods, its ability to remain relevant in the future is extremely doubtful. As found by Vasisani et al. [8] Tata Kisan, Mahindra Shublabh Services bring to the farmers valuable services like inputs, credit, extension and marketing which are likely to improve off-farm productivity of farm enterprises. ITC e-Choupal will add much-needed efficacy to the supply chain and help farmers to increase their market realization.

Further Rivera et al. [9] recommended that reform requires analysis of current performance of extension activities so as to determine the system's strengths and weaknesses and is the first step towards establishing a strategic vision of the reform measures to be taken. As stated by Battacharya et al. [10] that marketing information system is the backbone of agriculture. It is essential for smooth and regulated marketing business and also for the protection of all groups with them. It can play a crucial role in monitoring and managing the complete value chain from input to the consumer door and will give enough security and coverage to data exchange. Moreover Terblanche [11] stated that there exists an interrelationship between agricultural development and human development; beneficiaries need to work together, participate and co-operate fully. They should be committed and should accept responsibility for their actions and decisions.

Similarly Abon [12] presented that there a strong linkage complimented by flawless information flow enhanced by the effective use of ICT by the extension services will significantly boost agricultural production and improve rural livelihoods in developing countries. It can bring new information services to rural areas where farmers, as users, will have much greater control than before over current information channel. Access to such new information sources is a crucial requirement for the sustainable developing of farming systems. Further Apu and Nwachukwu [13] suggested that it is the responsibility of agricultural extension to transfer agricultural information and innovations to farmers as well as ensure adoption of same for the socio-economic development as well as improvement in the levels of living of the citizenry (farmers).

Similarly Tologbonse et al. [14] acknowledged that the approaches to agricultural development programmes are to give a meaningful result, government in particular and all stakeholders in extension system in the country need to take new approaches to information dissemination and management that grow out from a clear understanding of what farmers information needs are. Also Bello et al. [15] recognized that it is pertinent to note that privatization and commercialization of agricultural extension requires the creation of regulatory legal framework that would promote contestable markets and protect public interest. Effective and efficient regulatory legal framework would ensure good monitoring and client's rights. Likewise Amiti [16] suggested that policy should target at educating farmers who receive remittances about the extra benefits in terms of increased income to attract them to contract farming. Again, policies that provide adequately trained and equipped extension officers for dissemination of technologies that have the potential to reduce post-harvest losses should be encouraged to assist farmers to obtain enough farm income to expand their areas of operation and attract firms offering contract farming.

Besides Manwani et al. [17] proposes that performance of agribusinesses depends on management style, capital invested, final

product, income generated and employment generated. Policy makers need to formulate policies accordingly for success and sustainability of these strategies. Similarly Sawran et al. [18] concluded that the private sector's extension activities have only recently been developed, are limited in terms of coverage area, and are product specific. Thus, there is a need for effective coordination of the information dissemination in the system.

The sustainable agricultural development has induced the need for more participatory extension and research methods. The approach to monitoring and evaluation increases the chances of the finding solutions, and is a process that builds local capacity in decision-making and problem solving and requires special knowledge and skills [19]. In the same way Adejo et al. [20] suggested that policy formulation and implementation by the government on agricultural extension should be a collaborative effort involving all stake holders. It should also include the operational linkages and partnership between extension and other relevant service institutions such as related to research, marketing environment, commodities farm inputs, agricultural education and training, farmer's association and information technology. In so doing, the enabling environment for full private participation will be guaranteed.

ICT plays a vital role in disseminating information right on time to market the produce and to know about the fast price of products, introducing new markets and advertising agricultural products, can help in marketing improvement [21]. Institutions facilitate market linkages and smallholders to sell produce, however more can be done to increase smallholder activities in the market chain. Improving the market access through the improvement in road and other physical infrastructure can by far improve the market access and the level of participation in the market seen by the total volume of sales to the market [22]. Similarly Rehman [23] found that agricultural growth has always been an important constituent for inclusiveness, and recent experience suggests that high GDP growth without high agricultural growth would likely to lead towards high inflation in the country, which would adversely affect the national growth process at large. Further Rehman et al. [24] suggested that the production of crops could be increased by extensive and intensive methods of cultivation. Extensive cultivation is increasing the total area under cultivation; it could be done by making more land available for cultivation and transforming waste and uncultivable land into cultivable one through agricultural research. Intensive cultivation implies growing more crops on the same area. It could be done by the use of better and modern methods of cultivation, use of better seeds, fertilizers, pesticides and proper use of irrigation facilities.

3. METHODOLOGY

The study reflects the brief agricultural scenario (past and present) of India. Only secondary sources of information were used to compile the present study which includes Journals, Books, Govt. press releases, 5 Year Plan reports, Statistical handbooks, Company websites etc.

4. STATE INITIATIVES

Some of the latest major government initiatives in agricultural sector are:

- The Government of India announced Rs. 15,053 crore (US$ 2.25 billion) in September 2018 in procurement policy named 'Pradhan Mantri Annadata Aay Sanrakshan Abhiyan' (PM-AASHA), under which states can decide the compensation scheme and can also partner with private agencies to ensure fair prices for farmers in the country.
- The Cabinet Committee on Economic Affairs (CCEA) approved Rs. 6,600 crore (US$ 920.41 million) assistance package for the sugar industry in India in September 2018.
- As of March 2018, the Government is working on a plan to provide air cargo support to promote agriculture exports from India.
- The implementation of Pradhan Mantri Fasal Bima Yojana (PMFBY) will be made faster and the government is aiming to increase the coverage under the scheme to 50 per cent of gross cropped area in 2018-19.
- The Government of India plans to provide Rs 2,000 crore (US$ 306.19 million) for computerization of Primary Agricultural Credit Society (PACS) to ensure cooperatives are benefited through digital technology.
- Around 100 million Soil Health Cards (SHCs) have been distributed in the country during 2015-17 and a soil health

mobile app has been launched to help Indian farmers.

- The Government of India is introducing a new AGRI-UDAAN programme to mentor start-ups and to enable them to connect with potential investors.
- The Government of India has launched the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) with an investment of Rs 50,000 crore (US$ 7.7 billion) aimed at development of irrigation sources for providing a permanent solution from drought.
- The Government of India also plans to triple the capacity of food processing sector in India from the current 10 per cent of agriculture produce and has also committed Rs 6,000 crore (US$ 936.36 billion) as investments for mega food parks in the country, as a part of the Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters (SAMPADA).
- The Government of India has allowed 100 per cent FDI in marketing of food products and in food product e-commerce under the automatic route.
- The first mega food park in Rajasthan was inaugurated in March 2018.
- A loan agreement of US$ 318 million was signed between the Government of India, Government of Tamil Nadu and the World Bank in December 2017 for the Tamil Nadu Irrigated Agriculture Modernization Project, which is expected to benefit around 500,000 farmers in the state.

5. STATE MISSIONS AND PLANS

5.1 National Food Security Mission (NFSM)

NFSM was launched in 2007-08 to increase the production of rice, wheat and pulses by 10, 8 and 2 million tonnes, respectively by the end of 11th Plan through area expansion and productivity enhancement, restoring soil fertility and productivity, creating employment opportunities, and enhancing farm level economy. The Mission was continued during 12th Plan with new target of additional production of 25 million tonnes by the end of 12th Plan including coarse cereal crops. The basic strategy of the Mission is to promote and extend improved technologies, i.e., seed, micro nutrients, soil amendments, integrated pest management, farm machinery and implements, irrigation devices along with capacity building of farmers.

5.2 National Horticulture Mission (NHM)

This Centrally Sponsored Scheme was launched in the year 2005-06 aims at the holistic development of horticulture sector by ensuring forward and backward linkage through a cluster approach with the active participation of all stake holders. 384 districts in 19 States and 4 Union Territories were covered under NHM. Sixteen (16) National Level Agencies (NLAs) have also been included for providing support for developmental efforts which require inputs at the National level. The budget allocation of Rs. 2339.13 crore has been earmarked for MIDH during 2017-18. As on 31st December, 2017 funds to the tune of Rs. 1351.75 crores have been released to the States NLAs and Union Territories for implementation of schemes of MIDH (Mission for Integrated Development of Horticulture).

5.3 National Mission on Oil seeds and Oil Palm

Domestic Consumption of edible oils has increased substantially over the years and has touched the level of more than 23 million tonnes in 2016-17, which is likely to increase further with enhancement in per capita income and population. The production of domestic edible oils (9.97 million tonnes) has not been able to keep pace with the growth in consumption and the gap between production and consumption is being met through imports worth of > Rs.73,045 crores (2016-17 prov.). Production target of 35.50 million tonnes of oilseeds (kharif -25.40 million tonnes and Rabi-10.10 tonnes has been fixed for 2017-18).

5.4 Soil Health Management (SHM)

SHM is aimed at promoting location as well as crop specific sustainable soil health management including residue management, organic farming practices by way of creating and making soil fertility maps with macro-micro nutrient management, appropriate land use based on land type.

5.5 Rainfed Area Development (RAD)

During 2017-18, RAD was implemented in 26 States of the country. Integrated Farming System (IFS) is being promoted under RAD including activities like horticulture, livestock, fishery, agroforestry, value addition along with crops/cropping system.

5.6 National Mission on Agricultural Extension & Technology (NMAET)

Mission on State Agricultural Extension (SMAE) under the National Mission on Agricultural Extension and Technology (NMAET) being implemented during the 12th Plan with an objective to restructure and strengthen the agricultural extension machinery with a judicious mix of extensive physical outreach of personnel, enhancement in quality through domain experts & regular capacity building, interactive methods of information dissemination, Public Private Partnership, pervasive & innovative use of Information & Communication Technology (ICT) / Mass Media, Federation of groups and convergence of extension related efforts under various schemes and programmes of Government of India and the State Governments.

5.7 National Crop Insurance Programme (NCIP)

Keeping in view the risks involved in agriculture and to insure the farming community against various risks, The erstwhile crop insurance schemes have further been reviewed in consultation with various stakeholders including States/UTs, and a new scheme namely, Pradhan Mantri Fasal Bima Yojana (PMFBY) has been approved for implementation from Kharif 2016 along with pilot Unified Package Insurance Scheme (UPIS), Restructured Weather Based Crop Insurance Scheme (RWBCIS) and Coconut Palm Insurance Scheme (CPIS).

5.8 Rashtriya Krishi Vikas Yojana (RKVY)

Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, in consultation with the Planning Commission, launched the Rashtriya Krishi Vikas Yojana (RKVY) in 2007-2008. An amount of Rs. 31730.13 crore was released for implementation of the scheme to the States & Union Territories (UTs) during the XII Plan period. States/UTs have taken up projects related to crop development, horticulture, agricultural mechanization, natural resource management, marketing & post-harvest management, animal husbandry, dairy development, fisheries, extension etc for implementation under the scheme. An amount of Rs. 3050 crore has been allocated for implementation of the scheme during 2017-18.

5.9 International Cooperation

The mandate of International Cooperation is to foster mutually beneficial partnerships with other countries of the world in a multilateral as well as bilateral format. Department of Agriculture, Cooperation & Farmers Welfare is the Nodal contact point in Government of India for Food & Agriculture Organization (FAO) and World Food Programme (WFP) of the United Nations. Bilateral Agreement, Memorandum of Understanding (MoU), Protocols and Work Plans with the countries of strategic interest are signed and implemented for furthering cooperation in the field of Agriculture & Allied sectors in coordination with the Ministry of External Affairs and other concerned Ministries and Departments.

5.10 Gender Perspective in Agriculture

'Gender Mainstreaming' is one of the important pillars of the National Policy for Farmers formulated in 2007, in line with the Policy directives, it is mandated to take appropriate structural, functional & institutional measures to empower women in agriculture and allied sectors by building their capacities and improving their access to inputs, technology and other farming resources. Mainstreaming of gender concerns is being addressed by (i) earmarking 30% of funds for women under various major schemes/ programmes and development interventions; (ii) taking pro-women initiatives to help women derive the benefits of beneficiary– oriented components of various programmes/ schemes and missions. Focus is also being given on formation of women Self Help Groups (SHGs), capacity building interventions, linking them to micro credit, enhancing their access to information and ensuring their representation in decision making bodies at various levels.

6. DIFFUSION OF PARTNERSHIP

India has made impressive strides on the agricultural front during the last four decades. Much of the credit for this success should go to the several million small farming families that form the backbone of Indian agriculture and economy. Policy support, production strategies, public investment in infrastructure, research and extension for crop, livestock and fisheries have significantly helped to increase food production and its availability. During the last 40 years, India's food grain production nearly doubled from

102 million tons in the end of 1970 to more than 230 million tons in 2016. Virtually all of the increase in the production resulted from yield gains rather than expansion of cultivated area.

The government lead in a new era of economic reforms of Liberalization, Privatization and Globalization. Essentially, the reforms sought to gradually phase out government control of the market (Liberalization), privatize public sector organizations (Privatization), and reduce export subsidies and import barriers to enable free trade (Globalization). However, reforms in the agricultural sector in particular came under severe criticism in the late 1990s, when 221 farmers in the south Indian state of Andhra Pradesh committed suicide. The trend was noticed in several other states, and the figure today passed 100,000 across the country.

During 1980s, more NGOs, agro-input industries, and agro-processors started taking up agricultural extension activities. Farmer associations and producer co-operatives are also presently involved in extension services in select crops and commodities. A large number of extension services are being provided by input companies, especially fertilizer companies. With an increase in rural literacy, newspapers are devoting more space for reports related to agricultural technology and development. Currently there are many national as well as international companies in agribusiness and contract farming in the country. For example, Pepsi is procuring basmati rice from farmers under contract farming. Frito-Lay a subsidiary of Pepsi manufacturing potato chips, procure tomatoes from farmers directly. Hindustan Lever, a subsidiary of Unilever, is contracting farmers to produce basmati rice for exports. Many other players such as Marangan Rice Exports, AM Todi (previously Indo-mint), Chambal Agritech, Amira Foods, Kohinoor Foods to name a few etc. are involved in contract farming programme to provide market linkage. United Breweries, the world's 2nd largest brewer and the largest in India, in collaboration with state government's Punjab Agro Food grains Corporation, is growing malting barley. Big business houses have already tasted success in agribusiness. Some of the private players involved in agricultural partnership are summarized in the part below.

6.1 Indian Tobacco Company (ITC)

Indian Tobacco Company, the first biggest player in India in the field of agricultural privatization and extension is the ITC. A powerful illustration of corporate strategy linking business purpose to larger societal purpose. E-Choupal leverages the internet to empower small and marginal farmers – who constitute a majority of the 75% of the population below the poverty line. By providing them with farming know-how and services, timely and relevant weather information, transparent price discovery and access to wider markets. E-Choupal enabled economic capacity to proliferate at the base of the rural economy. Today more than 4 million farmers use E-Choupal to advantage – bargaining as virtual buyers' co-operatives, adopting best practices, matching up to food safety norms. Being linked to futures markets is helping small farmers to better manage risk. The network of 6,500 E-Choupal centres spread across 40,000 villages has emerged as the gateway of an expanding spectrum of commodities leaving farms – wheat, rice, pulses, soya, maize, spices, coffee, and aqua-products.

ITC's Women Self-help Groups have gone into the making and marketing of a range of cottage products – pickles, dried fish, organic manure, spices, agarbatis, tailoring, embroidery, etc. Although 70% of India's rural population owns cattle, milk yields are abysmally low due to poor quality stock. By enabling families to upgrade to high-yield livestock and form co-operatives to market their milk, ITC turns a dormant family resource into an easily adoptable and dynamic rural enterprise.

6.2 Digital Green

Digital Green is dedicated to improving the social, economic, and environmental sustainability of small farmer livelihoods. The exclusive constituents of the Digital Green system include (1) a participatory process for local video production, (2) a human-mediated instruction model for video dissemination and training, (3) a hardware and software technology platform for exchanging data in areas with limited internet and electrical grid connectivity, and (4) an iterative model to progressively better address the needs and interests of the community with analytical tools and interactive phone-based feedback channels. Digital Green works with existing, people-based extension systems and aims to amplify their effectiveness. Digital Green is also working with Pragati Koraput in Odisha state. Pragati Koraput is another India-based NGO working in the areas of soil and water conservation, promotion of sustainable

agriculture through organic practices, and introduction of new crop production technologies for food and income security of small and marginal farmers.

6.3 Integrated Agri Service Programme (IASP)

Integrated Agri Service Programme provides agricultural expert advice for agriculture crops such as rice, cotton, maize, wheat, sugarcane, chillies, and so on. The process works as the farmer can register the agriculture farms into the system directly or through a coordinator. The farmer (or coordinator) visits the agriculture farm at regular intervals and sends the crop status photographs and the text either in on-line manner or off-line manner. The agricultural experts access crop status data from the IASP portal and deliver the expert advice regarding steps to be taken to improve the crop productivity. The advice can be downloaded from the IASP portal by both the farmer and the coordinator, and is also displayed on cell phone through SMS. Farmers can place the goods for sale such as cows, buffalo, rice, maize, chillies, and farmers and buyers can access the information regarding products on sale through the same portal.

6.4 Lifeline India

Lifeline India is a knowledge based services for farmers on mobile is a novel initiative for information services delivery, which uses an innovative mix of internet and telephony to provide critical and timely information to communities in rural India – bridging the knowledge gap and promoting digital inclusion for them. Initiated by OneWorld in collaboration with British Telecom and Cisco Systems, LifeLines today serves rural communities in 67 districts across 5 states of India with information services in Agriculture and Education. The partnership of British Telecom, Cisco Systems and OneWorld in September 2006 launched LifeLine as an agri-information service, catering to rural north and central India. Information is available on more than 30 different fields of agriculture and allied activities covering a complete chain of information from production to consumption, including information on, Farm inputs like seeds, fertilizers, pesticides, funding schemes, Government schemes on loans and subsidies, banking and insurance, market price, region specific market information, agriculture news, organic farming, etc.

6.5 TARAhaat

TARAhaat was launched as a pilot project in Bundelkhand, Madhya Pradesh and Uttar Pradesh in year 2000. Today it has 46 centres and is in the midst of a major expansion in Madhya Pradesh, Punjab and Haryana. TARAhaat communications provide web-hosting services to broaden outreach and find new markets for the products and services. TARAhaat provides services in Agroforestry, Commercial Tree Crops, Fertilizers, Herbicides, Loan Schemes, Nursery, Organic Farming, Plant Diseases, Planting Systems, Soil maintenance etc.

6.6 Mahindra Shublabh Services Ltd. (MSSL)

Mahindra Shubhlabh Services Ltd. a subsidiary company of Mahindra & Mahindra Ltd., the largest farm equipment company in India. MSSL has revolutionized agri-business by aggregate the factors of production under the brand Mahindra Krishi Vihar, through farming solutions specific to crop, region and market. It provides a broad range of products and services to increase farm productivity and also creates market linkage to optimize the commodity supply chain. The staff provides support and guidance to farmers in the selection and usage of products in terms of crop, health, environment and human wellbeing. Mahindra Krishi Vihar offers a platform for banking institutions to provide loan to farmers with minimum documentation, quick sanctions and attractive interest rates, while the participating financial institutions develop a low risk portfolio and reduce their overhead costs through this channel.

6.7 Rallis India Limited

Rallis India Limited, a subsidiary of the Tata Group, Rallies India Limited was founded in 1918 and is one of the foremost agrochemical companies. It deals in agricultural products ranging from fertilisers and pesticides to seeds and treated seed chemicals. It has a range of agro inputs and services across 30% of Indian districts. Its portfolio covers cereals and fibre crops. Rallis produces and markets several hybrid varieties of maize, paddy and cotton. Rallis is today among the major seed companies in the domestic market. It has more than 1500 dealers and 30,000 retailers across the country and is expanding successfully.

6.8 HLL I-Shakti Rural Information Service

HLL I-Shakti Rural Information Service is an extension of HLL's Project Shakti, which creates income-generating capabilities for underprivileged rural women by providing a sustainable micro enterprise opportunity, and to improve rural living standards through health and hygiene awareness. I-Shakti is an IT-based rural information service network that has been developed to provide information and services to meet rural needs in medical health and hygiene, agriculture, animal husbandry, education, vocational training and employment and empowerment of women.

6.9 Nuziveedu Seeds Limited

Nuziveedu Seeds Limited deals in agricultural seeds, as the name of the company suggests. The largest producer of BT cotton seed in India, Nuziveedu Seeds Ltd. was founded in 1973. It has its corporate and head office in Hyderabad, Telangana. The company offers seeds for a wide range of crops: cotton, vegetable, mustard, sorghum, pearl millet, sunflower, maize and paddy seeds. NSL group, an Indian conglomerate, is the parent company of the Nuziveedu Seeds Limited.

6.10 Lemken India Agro Equipments Private Limited

Lemken India Agro Equipments Private Limited was operationalised in 2010 and its headquarters in Nagpur, Maharashtra. It is a recognised manufacturer of machinery needed for soil cultivation, sowing and plant protection. It has its manufacturing plant in Nagpur, Maharashtra. Lemken has spread its business in 45 countries around the world. Lemken India is one of the leaders in producing plough, cultivator, and Power Harrow and other agricultural implements.

6.11 Advanta Limited

Advanta Limited-Established in 1994, Advanta Limited is active in the seeds business.It is a plant genetics company. Its corporate office and headquarters are in Hyderabad, Telangana. Advanta is amongst the leaders in the agricultural industry having its presence in six continents. Advanta is a world leader in forages and grains.

6.12 Monsanto India

Monsanto India is the Indian subsidiary of the American agricultural giant, which was founded in 1901 in Missouri, USA. Its prime business includes production of pesticides and seeds. Monsanto India is headquartered at Mumbai, Maharashtra and is rated amongst the top agricultural companies in India.

6.13 Poabs Organic Estates

Poabs Organic Estates-based in Tiruvalla, Kerala, Poabs Organic Estates was set up in 1854. It is a multi-crop plantation company. Poabs Organic Estates dominates the agro-based product market as far as coffee, tea, white pepper and black pepper are concerned. The company has won many accolades nationally and internationally in the coffee and tea segments.

6.14 National Agro Industry

National Agro Industry was established in 1970 and is based in Ludhiana-Punjab. National Agro Industry is involved in manufacturing of agricultural equipment and enjoys a considerable market share in the concerned sector in India. Some of the notable products of the company include ridge planter, crop planter, paddy grain planter, seed drill, maize sheller and vegetable seed extractor.

6.15 Godrej Agrovet Limited

Godrej Agrovet Limited is a subsidiary of Godrej group came into existence in 1990. The company deals in agro-based products and is one of the top agricultural entities in India. The company is known for providing bird feeds, animal feeds, agro chemicals, poultry-based products and palm oil plantation.

6.16 Rasi Seeds

Rasi Seeds is involved in the agricultural seeds production. It was founded in 1973. Seeds for pearl millet, maize and cotton are produced by Rasi Seeds. It is one of the best biotech companies of India and has won many awards for offering best quality seed and expertise in farming.

6.17 Development Research Foundation

Development Research Foundation (formerly known as Sharbya Agro Industries Foundation

SAIF), is a reputed voluntary organization founded in 1967 at Urulikanchan (Pune) that promotes sustainable livelihood to rural people through management of natural resources and promotion of livestock development, watershed development and agri-horti-forest for rehabilitation of tribals. SAIF is serving over 4.5 million poor families and is spread over 15 states across the country with over 4500 employees. Females have been motivated to play a great role in income generation activities in agriculture and allied activities through self-help groups.

6.18 Techno Exports

Techno Exports engaged in the export of cured coir and coir fibre, located at Pattanakkad, in Alleppey district, Kerala. It is an ISO 9001:2008 certified company. The company exports include coir mats, rubber moulded mats, PVC tufted mats, jute rugs, grow bags, coco pith briquettes, and centrifuged natural latex. It is one of the pioneers of export of coconut fibre in machine twisted form to Russia and Germany for specific application in production of car seats. The company procures the raw materials from local markets and from nearby states, Tamil Nadu, Karnataka, Andhra Pradesh and West Bengal.

6.19 Ecocert

Ecocert was established in France in 1991. It started its operating in India from 2002. Ecocert India is headquartered in Aurangabad, Maharashtra. Ecocert specialises in the certification of organic agricultural products. Today over 0.15 million farmers with over 0.35 million acres of organically managed land are registered with Ecocert for certification across the country. Ecocert, with its core concern for the small holders in south Asian countries, is committed to provide affordable and trusted services of inspection, certification and training for the organic farmers through its wide network of localized inspectors.

6.20 Jatropha Agro Pvt. Ltd. (JAPL)

Jatropha Agro Pvt. Ltd. (JAPL) was setup in June 2004 for complete jatropha cultivation consultancy and production of bio-diesel from jatropha seeds on a large scale. JAPL is not only engaged in cultivation and promotion of jatropha curcas, it also provides details of jatropha cultivation to rural farmers and women to generate self-employment as jatropha. It procures and supplies germination jatropha curcas seedlings and helps the farmers in getting loans for jatropha plantation from the government agencies. Their approach to jatropha cultivation is from nursery to saplings to plantations. It also helps in land procurement for setting up jatropha farms, land preparation, planting of jatropha seeds, implement suitable and appropriate modern techniques to enhance growth and yield rates of the plantation, irrigation, monitor the growth, prepare and furnish monthly progress reports, quarterly progress reports, and pluck and store the seeds with buyback facility and/or assist in sales of seeds at the best market rates. JAPL also provides the technology to process bio diesel from jatropha.

The other companies having their contribution toward agri-marketing partnership are M/s Sampada Farms & Consultants, Agri Unlimited, Unicorn Industries Pvt. Ltd., Indian Society of Agribusiness Professionals (ISAP), Esteem Agro & Foods Pvt. Ltd and many more.

7. PROSPECTIVE OF THE SECTOR

The Indian food and grocery market is the world's sixth largest, with retail contributing 70 per cent of the sales. The Indian food processing industry accounts for 32 per cent of the country's total food market, one of the largest industries in India and is ranked fifth in terms of production, consumption, export and expected growth. It contributes around 8.80 and 6.39 per cent of Gross Value Added (GVA) in Manufacturing and Agriculture respectively, 13 per cent of India's exports and six per cent of total industrial investment.

During 2017-18, food grain production is estimated at record 284.83 million tonnes. In 2018-19, Government of India is targeting food grain production of 285.2 million tonnes. Milk production was estimated at 165.4 million tonnes during FY17, while meat production was 7.4 million tonnes. As of September 2018, total area sown with kharif crops in India reached 105.76 million hectares. India is the second largest fruit producer in the world. Production of horticulture crops is estimated at record 307.15 million tonnes (mt) in 2017-18 as per second advance estimates. Total agricultural exports from India grew at a CAGR of 18.45 per cent over FY10-18 to reach US$ 38.21 billion in FY18. In April-August 2018 agriculture exports were US$ 15.87 billion. India is the largest producer, consumer and exporter of spices and spice products. Spice

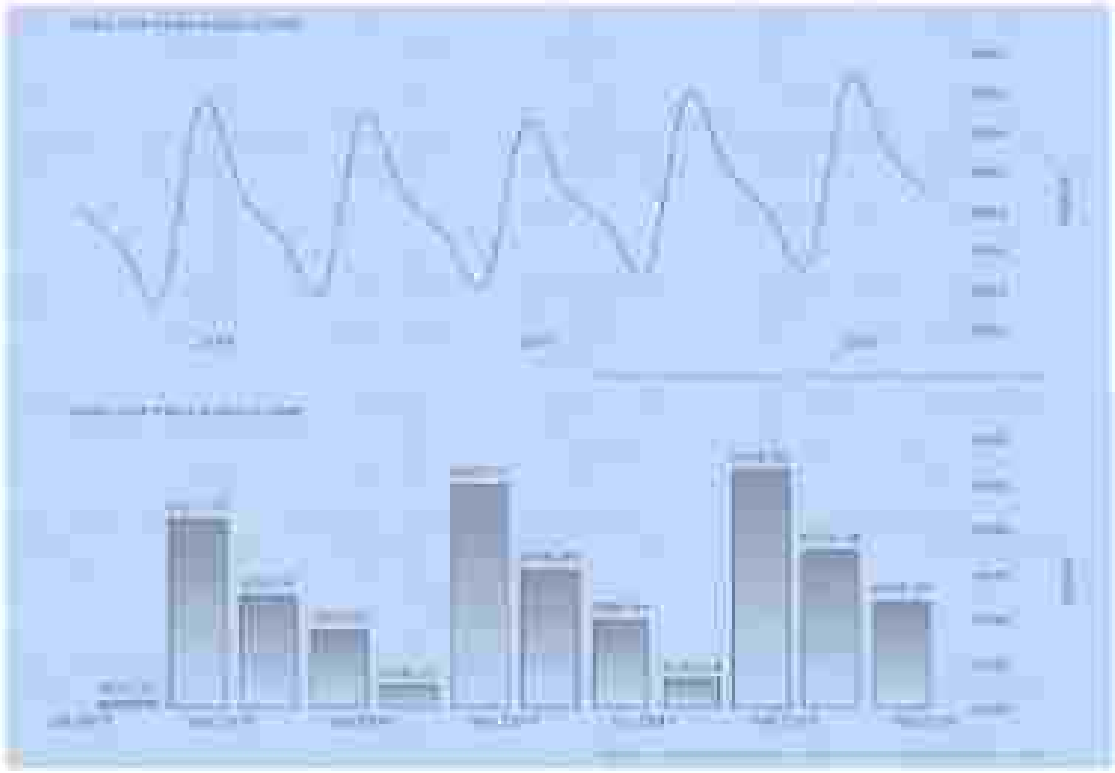

Fig. 1. GDP contribution of agriculture

exports from India reached US$ 3.1 billion in 2017-18. Tea exports from India reached a 36 year high of 240.88 million Kg in FY 2017 while coffee exports reached record 386,000 tonnes in 2017-18. Food & Grocery retail market in India was worth US$ 380 billion in 2017. According to the Department of Industrial Policy and Promotion (DIPP), the Indian food processing industry has cumulatively attracted Foreign Direct Investment (FDI) equity inflow of about US$ 8.57 billion between April 2000 and June 2018. Further over a period the GDP contribution of Agriculture is represented in the Fig. 1.

India is expected to achieve the ambitious goal of doubling farm income by 2022. The agriculture sector in India is expected to generate better momentum in the next few years due to increased investments in agricultural infrastructure such as irrigation facilities, warehousing and cold storage. Furthermore, the growing use of genetically modified crops will likely improve the yield for Indian farmers. India is expected to be self-sufficient in pulses in the coming few years due to concerted efforts of scientists to get early-maturing varieties of pulses and the increase in minimum support price.

The government of India targets to increase the average income of a farmer household at current prices to Rs 219,724 (US$ 3,420.21) by 2022-23 from Rs 96,703 (US$ 1,505.27) in 2015-16. Going forward, the adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM) including ISO 9000, ISO 22000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) by the food processing industry will offer several benefits.

8. CONSTRAINTS IN AGRICULTURAL DIFFUSION

The most prominent constraint is the drastic and continuous decline in the GDP contribution. With so much of agricultural diversification, extension, liberalization, globalization and privatization and state focus, agriculture has continuously seem to be lagging behind compared to other sectors of service and industry. Farmer suicides in the country are continuously increasing due to insufficient returns of their produce, lack of availability of modern technology, insufficient irrigation facilities, lack of High Yielding Variety Seeds and lack of training, guidance, counselling

and support. There is lack of awareness, guidance and adaptability in the farmer community, there are no sufficient forward and backward linkages in agriculture, there is lack of connectivity especially-knowledge connectivity, information connectivity, market connectivity, transport and road connectivity etc.

9. CONCLUSION

Public and private sector extension has to play a much greater role in the changing agricultural situation in India than it has played so far. The extension has to provide information and advice to farmers not only on technologies, but also on solutions to specific field problems, markets, prices, quality, and implications of policy changes. The extension also has to organize farmers to take collective action to adopt new technologies, solve problems, and increase income from agriculture. To perform these roles, it has to reorganize its structure and functions by embracing wider expertise, decentralizing management, and nurturing a culture of organizational learning.

Public and private sector extension could considerably improve its effectiveness through developing partnership with many of these new organizations that have emerged in the extension scene in the last two decades. Both economic and social reasons justify public financing of extension in the Indian context, but some of these services could be better delivered outside the public machinery. There is a strong need for appropriate regulation and well-administered enabling policies. Regulatory reform is in many respects succeeding at the center, but not yet backed up by coherent action in the states [25]. Competition for private investment in food value chains across states may prompt local measures such as tax breaks to counteract structural effects. But there is a wider reform agenda. In agricultural marketing, for example, this should foster agro-industrial linkages, farm productivity, and off-farm employment. Measures here include APMC Act reform, rationalization of taxes on agricultural commodities, e-trading, and disintermediation [26].

10. RECOMMENDATION

Information is power and will underpin future progress and prosperity for agriculture. To enhance privatization linkages in the rural economy are the primary needs which support other sectors to develop. Usually four types of linkage are commonly identified: direct upstream and downstream production linkages, investment linkages, and indirect consumption or expenditure linkages. Examination of linkages allows exploration of the effects of exogenous change as they work: (a) between the effects of changes in productivity and prices of tradable and non-tradable, and (b) between the effects on and responses of poor rural patrons and producers including employed labour.

Moreover there is a call for adoption of farming system and farmer participatory approach, enabling problem solving skills of farmers through an interdisciplinary approach, public funds for private extension, privatization of extension in favorable areas, provision for cost recovery and co-financing of extension via farmers organisations, farmer interest groups for extension must be implemented, employing more subject matter specialists, preparation of tactical research and extension plans, skill development of extension agents, improving women's access to technology, provision of market information, wide use of information technologies, linkage with agro-processors, computer education to the farmers, organizing on-farm training and demonstrations, developing village knowledge managers, Facilitating multi-agency extension through village knowledge center, etc.

11. LIMITATION OF THE STUDY

The study reflects a brief scenario of progress of Indian Agriculture in terms of partnerships taking only few elements into consideration. Further it is does not cover all the areas and perspectives of the Indian Agriculture.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Bloome P. Privatisation lessons for US extension from New Zealand and Tasmania. Journal of Extension. 1993;31(1):Spring.
2. Saravanan R, Srivalinge GNS. Development of scale to measure attitude towards privatization of agricultural extension service. Tropical Agricultural Research. 1999;11:192-98.

3. Birthal PS, Joshi PK, Roy D, Thorat A. Diversification in Indian agriculture toward high-value crops: The role of small farmers. Canadian Journal of Agricultural Economics. 2012;61(1):61–91.

4. Ferroni M, Zhou Y. The private sector and India's agricultural transformation. Global Journal of Emerging Market Economies. 2010;2(1–3):29–37.
DOI: 10.1177/097491011771616408

5. Rivera WM, Cary JW. Privatizing agricultural extension: A reference manual. Food and Agriculture Organization of the United Nations, Rome; 1997.

6. Najoku ECM, Odii MACA, Orivin JO. Role of NGO's in agriculture and rural development in River State Nigeria. International Journal of Agriculture and Rural Development. 2002;3(1):70–77.

7. Suleman RV, Hall A. Beyond technology dissemination-can Indian agricultural extension re-invent itself? Indian Council of Agricultural Research (ICAR), Policy Brief 16; 2002.

8. Vaswani LK, Venkatakrishnan V, Upadhyay R, Talati J. Agriculture-market linkages: Evaluating and evolving a conceptual framework in Indian context. National Bank for Agriculture and Rural Development, Occasional Paper-28; 2002.

9. Rivera W, Alex G. Extension system reform and the challenges ahead. The Journal of Agricultural Education and Extension. 2004;10(1):23–36.

10. Sattanarasa KK, Singh H. Agricultural resource planning through-IT platform-an approach. Operational Research: An International Journal. 2005;5(1):49–65.

11. Terblanche SE. Towards an improved agricultural extension service as a key role player in the settlement of new farmers in South Africa. South African Journal of Agricultural Extension. 2008;37(1):55–64.

12. Abon CL. Assessment of the frequency of ICT tools usage by agricultural extension agents in Imo State, Nigeria. Journal of Agriculture and Social Research. 2008;8(2):272–77.

13. Apu UA, Nwachukwu I. Issues for agricultural extension policy: structures and institutional arrangement. Journal of Agricultural Extension. 2008;12(1):117–123.

14. Tologbonse D, Fashola O, Ogadian M. Policy issues in meeting rice farmer's agricultural information needs in Niger state. Journal of Agricultural Extension. 2008;12(2):84–94.

15. Bello M, Salau ES. A case for participatory (cost sharing) approach to agricultural extension delivery in Nigeria. Journal of Agricultural Extension. 2009;13(1):84–94.

16. Anim FDK. Small-scale maize farmers' decision to participate in contract farming: Implications for integration into the marketing chain? African Journal of Business Management. 2011;5(13):5065–69.

17. Mafimbi LL, Ohl SA, Sifumba L. An evaluation of the performance of small scale agribusinesses in Vhembe district of Limpopo province, South Africa. African Journal of Agricultural Research. 2011;6(16):3903–10.

18. Sarah F, Demiryurek K, Ozcatalbas O, Akin A, Soz I. The agricultural extension system and practices in Turkey. Scientific Research and Essays. 2011;6(9):1831–35.

19. Ozcatalbas O, Soz I, Demiryurek K, Sudak DS, Karaburhan B, Akcaoz H. Developing participatory extension applications in Turkey. African Journal of Agricultural Research. 2011;6(2):407–15.

20. Adejo PE, Okwu OJ, Ibrahim MK. Challenges and prospects of privatization of agricultural extension service delivery in Nigeria. Journal of Agricultural Extension and Rural Development. 2012;4(3):63–68.

21. Lashgarara F, Mohammadi R, Najafabadi MO. Identifying appropriate information and communication technology (ICT) in improving marketing of agricultural products in Garmsar city, Iran. African Journal of Biotechnology. 2011;10(65):11437–40.

22. Pali PN, Kaaria SK, Delve RJ, Freyer B. Can markets deliver the dual objectives of income generation and sustainability of natural resources in Uganda? African Journal of Agricultural Research. 2011;6(11):2594–603.

23. Rehman S. Agricultural performance of Tamilnadu-an analysis. Asian Journal of Research in Business Economics & Management. 2013;3(3):229–44.

24. Rehman S, Selvaraj M, Ibrahim MS. Indian agricultural marketing-a review. Asian Journal of Agriculture and Rural Development. 2012;2(1):69-75.

25. Singh VV, Mitra S. Regulatory management and reform in India (Background Paper for OECD). New Delhi: OECD; 2010.

26. Chand R, Singh J. Agricultural marketing and farmer friendly reforms across Indian states and UTs. New Delhi: National institution for Transforming India, NITI Aayog; 2018.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history/27924