REPUBLIC OF INDIA

EXTENSION AND ADVISORY SERVICES

INTRODUCTION TO THE COUNTRY

Context

India is located in South Asia, adjoining the Indian Ocean in the south, the Bay of Bengal in the south-east and the Arabian Sea in the south-west. Due to its huge physical size and with a population of over 1.2 billion people, the country is also known as the Indian subcontinent. India is currently one of the fastest growing economic powers in the world although still faced with the problems of rapidly growing population, poverty, illiteracy and malnutrition. India's capital is New Delhi.

India comprises 28 states and seven union territories. Each state and territory is divided into districts for administrative purposes. Districts are further divided into *tehsils* (blocks) and villages. The climate of India is tropical, subtropical, and mountainous. More humid and warm areas are in the south and the temperatures gradually fall as one goes towards northern areas. Monsoons bring rains mostly from July to September. The Himalayas Mountains and the Thar Desert have significant influence on the country's climate.

Starting with the Green Revolution in the late 1960s, India made significant gains in its agriculture sector, successfully solving the problem of frequent famine threats, and becoming self-sufficient in feeding its growing population. The agriculture sector contributes about 18 percent to the national GDP, and employs about 50 percent of the national work force. India has both irrigated and rain-fed agriculture. Rice and wheat are its most important food and export crops, placing India as the second biggest producer of these commodities in the world. Other crops include sugarcane, vegetables, spices, coconut, oilseed, tuber crops, cotton, tea, rubber and jute. The country is among the top five largest producers of livestock and poultry. Similarly, it enjoys a fast growth in its aquaculture and "catch" fisheries. It does not mean, however, that India's agriculture sector has been modernized. Most crop yields remain low in general, soil fertility keeps declining, irrigation infrastructure and water management are poor, dependence on increasingly unpredictable rains is high, subsistence farming is dominant due to average size of holdings being less than two hectares. Also, marketing and post-harvest handling of produce are less than satisfactory, and government interventions through subsidies and taxation are distinct.

Key Statistics and Indicators

Indicator	*Value*	*Year*
Agricultural land (sq km)	1,799,630	2009
Agricultural land (% of land area)	60.52	2009
Arable land (hectares)	157,923,000	2009
Arable land (% of land area)	53.11	2009
Arable land (hectares per person)	0.13	2009
Fertilizer consumption (kg per hectare of arable land)	167.21	2009
Agriculture, value added (% of GDP)	17.21	2011
Food production index (2004-2006 = 100)	118.23	2010
Food exports (% of merchandise exports)	8.25	2010
Food imports (% of merchandise imports)	3.95	2010
GNI per capita, Atlas method (current US$)	1410	2011
Literacy rate, adult total (% of people ages 15 and above)	62.75	2006
Literacy rate, youth female (% of females ages 15-24)	74.35	2006
Literacy rate, youth male (% of males ages 15-24)	88.41	2006
Ratio of young literate females to males (% ages 15-24)	84.10	2006
Ratio of female to male secondary enrollment (%)	91.79	2010
Mobile cellular subscriptions (per 100 people)	71.99	2011
Internet users (per 100 people)	10.07	2011
Population, total	1,241,491,960	2011
Population density (people per sq. km of land area)	411.88	2010
Rural population	852,967,051	2011
Rural population (% of total population)	68.70	2011
Agricultural population (% of total population)*	47.89	2011
Total economically active population	505,280,000	2011
Total economically active population in agriculture*	272,710,000	2011
Total economically active population in agriculture (in % of total economically active population)	53.97	2011
Female economically active population in agriculture (% of total economically active population in agriculture)*	32.48	2011

Sources: The World Bank, http://data.worldbank.org; *Food and Agriculture Organization of the United Nations, http://faostat.fao.org

HISTORY OF EXTENSION AND THE ENABLING/DISABLING ENVIRONMENT

India was a British colony until its independence in 1947. During the colonial rule, departments of agriculture were created in 1871. Higher education in agriculture was started at Coimbatore in 1878. In 1942, "Grow More Food" campaign was launched which was continued even after the country's independence.

In 1952, the Community Development Program was initiated nationwide, followed by the creation of National Extension Service in 1953. Rural agents who had both extension and non-extension responsibilities worked without having received any training in extension. Under the program, the country was divided into development blocks, each comprising about 100 villages having population of 60,000 to 70,000 people. By 1962, about 5,000 blocks had been covered by the program. Each village-level worker was responsible for about 10 villages covering not only technology transfer but also cooperatives, adult literacy, and sanitation. Villagers contributed to the program in cash and kind. In 1960, the first agricultural university was established, and the Directorate of Extension was created in 1966.

While the Community Development Program continued till early 1980s, location-specific extension activities were initiated under various programs and projects such as Intensive Agricultural District Program (1960), Intensive Agricultural Area Program (1964), High Yielding Variety Program (1966), and Farmers Training Centers (1967). All of these initiatives brought the Green Revolution in India. In 1973, Mini-kit Trials Program, and in 1976 Integrated Rural Development Program (IRDP) were started.

In 1977, the Training and Visit (T&V) system of extension was introduced under a World Bank-financed project. The National Agricultural Extension Project (NAEP) was started in 1985 followed by other significant programs and projects that focusing on or emphasizing extension aspects were Watershed Development Program (1984) in rain-fed areas, Transfer of Technology, and State Agricultural Universities. The Indian Council of Agricultural Research (ICAR) also launched the Technology Assessment Refinement Project-Institute Village Link Project (TARP-IVLP) in 1995.

Although all of these projects strengthened extension in their own right yet it was the "Innovation in Technology Dissemination" component of the World Bank funded National Agricultural Technology Project (NATP), which ran from 1998-2005, that made a significance difference. This project implemented the Agricultural Technology Management Agency (ATMA), a semi-autonomous agency at the district level, which reformed the traditional extension system to a very significant extent. The extension model introduced by ATMA contained some of the key extension reforms being advocated by the World Bank, including the decentralization at the district, block and village levels, bottom-up participation of male and female farmers, diversification instead of mono focus on high-value crop, livestock and other

products and pluralism involving both public and non-public institutions. Pilot activities were started in 28 districts across seven states in 1998. By 2007, the government had expanded the ATMA model of extension to nearly all districts across the country. As certain issues related to the operations, human resources and research emerged during the up-scaling of this model, with the government issuing new guidelines in 2010 to cope with some of these issues.

India has a complex extension network comprising conventional and/or ICT-based programs, projects, initiatives, centers, services and models involving government departments at the national, state, district and village levels, as well as universities, private sector, research institutes, semi-autonomous and autonomous bodies, and civil society institutions (NGOs). This situation puts heavy responsibilities on the national level extension department for the provision of policy guidance, coordination among so many actors, and the assurance of program quality. In spite of impressive progress in ICT applications to the agriculture sector, low literacy and especially little computer knowledge does not allow the farmers to fully benefit from these applications. Institutional linkage beyond research and extension is also weak. Woman farmers' access to extension services remains limited, and the coverage of resource poor farmers needs expansion and improvement. Among all the donors that have provided assistance to extension in India, the World Bank deserves the most credit. The assistance provided by the Bank from 1960s till now has not only strengthened the public extension services but has introduced a number of key extension reforms.

MAJOR INSTITUTIONS PROVIDING EXTENSION/ADVISORY SERVICES

Public Institutions

Ministry of Agriculture http://www.agricoop.nic.in/

- **Department of Agriculture and Cooperation** http://agricoop.nic.in/add.htm

The Department of Agriculture and Cooperation comprises several technical directorates (also called divisions) and one of them is for agricultural extension. The Directorate of Extension, headed by a Joint Secretary cum Extension Commissioner, is the nodal extension organ at the national level. The Joint Secretary is assisted by three Joint Commissioners. The directorate provides policy guidelines and operational backstopping to the state level extension organizations. At times, it has directly implemented certain major programs. The directorate's technical units are extension management, extension training, farm information, and National Gender Resource Center in Agriculture (NGRCA). The Department of Agriculture and Cooperation has issued a document, "Guidelines for Modified Support to State Extension Programs for Extension Reforms Scheme, 2010" in June 2010. In 2010, the total number of public extension staff in India was about 90,000 persons. Information on the present number of staff could not be found while preparing this summary.

Indian Council of Agricultural Research http://www.icar.org.in/en/

The Indian Council of Agricultural Research (ICAR) is an autonomous body under the Department of Agricultural Research and Education http://dare.nie.in/, Ministry of Agriculture. The council serves as the national apex organization for coordinating, guiding and managing agricultural research and education including horticulture, fisheries and animal sciences throughout the country. It comprises 99 ICAR institutes (such as Indian Agricultural Research Institute (IARI) http://www.iari.res.in/) and 53 agricultural universities spread across India. ICAR plays the central role in promoting excellence in higher education in agriculture. Its Agricultural Extension Division covers extension activities.

- **Agricultural Extension Division** http://www.icar.org.in/en/agricultural-extension.htm

The Agricultural Extension Division which is a part of the ICAR is headed by a Deputy Director-General (Agricultural Extension), who is supported by two Assistant Director-Generals. Activities of this Division are technology assessment and demonstrations, training of farmers, training of extension staff, and creation of awareness of improved technologies among farmers. The Division performs extension activities through the following institutional mechanism:

- At least 631 *Krishi Vigyan Kendras* (KVK), are now available in India, but have played a somewhat inactive role in implementing the ATMA model of extension
- About 44 Agricultural Technology Information Centers (ATIC) have been established as parts of ICAR institutes and state agricultural universities, which are well connected with the KVKs
- National Research Center for Women in Agriculture (NRCWA), located in Bhubaneswar, Orissa

State Agricultural Universities

There are about 43 state agricultural universities in India and most of them are involved some type of extension work, that is, in addition to their academic programs. Apart from conventional universities, there are five institutes deemed to be universities (examples: Indian Agricultural Research Institute (New Delhi), Indian Veterinary Research Institute (Izatnagar), and Allahabad Agricultural Institute (Allahabad). In addition, there are four central universities with faculties of agriculture (e.g.: Banaras Hindu University and Aligarh Muslim University).

Names of ten well established state agricultural universities of India are as follows:

- Indira Gandhi Agricultural University (also offers e-learning/on-line courses)
- Central Agricultural University (also offers e-learning/on-line courses)
- Indian Agricultural Research Institute (also offers e-learning/on-line courses)
- University of Agricultural Sciences at Bangalore (also offers e-learning/on-line courses)

- Kerala Agricultural University
- Gujarat Agricultural University (also offers e-learning/on-line courses)
- Punjab Agricultural University (also offers e-learning/on-line courses)
- Acharya N.G. Ranga Agricultural University
- University of Agricultural Sciences at Dharwad
- Anand Agricultural University

National Institute of Agricultural Extension Management (MANAGE)
http://www.manage.gov.in/

MANAGE, which is located near Hyderabad city, is an autonomous organization established by the government in 1987. The mandate of the organization is to assist the central government and the state governments to help improve their pluralistic extension systems by bringing positive changes in policies, programs, and personnel skills. Main activities undertaken by the institute are extension capacity building, research, consultancies, education in management, and documentation.

This institute offers dozens of training courses advertised well in advance. It also offers two post-graduate diploma programs, one in general management and the other in agricultural extension management. In addition, a one-year diploma program in agricultural extension services for input dealers was started in 2004 for imparting formal agricultural education to the dealers. MANAGE is also responsible for implementing the Agri-Clinics and Agri. Business Centers Scheme (ACABC), which aims at providing value-added extension services to the doorsteps of farmers by agricultural professionals. The scheme involves two-month residential training to eligible agricultural professionals, one-year post training in handholding support, startup loans by banks and subsidy by the National Bank for Agriculture and Rural Development (NABARD). MANAGE enjoys highly qualified and experienced faculty and well equipped modern training infrastructure. Its training programs are open to both public and non-public stakeholders.

State Agricultural Management and Extension Training Institutes (SAMETI)

There are SAMETI's in most Indian states and they are autonomous state level institutes with a mandate of conducting training courses on new agricultural technologies, extension management, gender issues, extension reform and new information technologies. SAMETIs provide extension management training for extension agents and functionaries for all the line departments, including how to make extension more bottom up, farmer-led and market driven. Apart from providing training, these SAMETIs also facilitate infrastructure in conducting workshops and reviews. For more information on some of these SAMETIs, see: http://www.sametihp.com/; http://sametikerala.com/; http://www.sameti.org/; http://www.apsameti.gov.in/

Commodity Boards

Given the vast area and diverse agro-climatic regions, many different crops, commodities, animals and fish species are produced across within India. There are a total of 20 agri-export zones within India. There are five statutory commodity boards under the Department of Commerce. These boards are responsible for production, development and export of tea, coffee, rubber, spices and tobacco. In order to promote other commodities, a number of commodity development boards were established at national and state levels. In most cases, the organizational structure, research, extension and marketing systems are in the process of changing. Thirteen centrally governed commodity boards are listed below.

- Central Silk Board (CSB)
- Coconut Development Board (CDB)
- Coffee Board (CB)
- Coir Board
- Rubber Board (RB)
- Spices Board (SB)
- Tea Board (TB)
- Tobacco Board (TB)
- National Dairy Development Board (NDDB)
- National Horticulture Board (NHB)
- Cashew Export Promotion Council (CEPC)
- National Jute Board (NJB)
- National Federation of Cooperative Sugar Factors (NFCSF)

Non-Public Institutions

Private sector

Several moves have been made in India towards privatization of agricultural extension services mainly through experimental and pilot projects, as well as schemes during the past decade yet the bulk of extension services remain by and large public and free of charge for farmers. There are a large number of agricultural companies (about 280,000) but none may be called as a full-fledged private agricultural advisory company. Whatever provision of private extension services is done, it is done by farm inputs suppliers, consulting firms, and contracting companies. The forms of service obtained by farmers through payment include contract farming (mostly by commercial agricultural companies), marketing of high value crops (usually by commercial export companies), value addition (normally by agro-processing companies), trouble shooting on farms (mostly by consultants), and charge-based services centers for farmers (usually by private agricultural companies). Names of a few private agricultural companies, which provide one or

more services like contract farming, agro-processing, inputs supply, consulting, multi-services, and export, are as follows:

- Indo-American Hybrid Seeds www.indamseeds.com/
- ASPEE India www.espee.com/
- Agro Tech www.agrotech-india.com/
- Good Earth www.goodearth.in/
- Green Valley Plantations
- Mahindra Shubhlabh Services, Ltd. www.mahindra.com
- ITC Limited www.itcportal.com/ - India
- CAICO www.caico.in/
- Rasi Seeds www.rasiseeds.com
- DuPont India
- National Agro Industries www.nationalagroinds.com/
- Poabs Organic www.poabsorganic.com
- Phalada Agro Research Foundation www.phaladaagro.com
- Advanta India, Ltd. www.advantaindia.com/
- Monsanto India Ltd. www.monsantoindia.com
- Syngenta India Ltd. www.syngenta.com/country/in/en/

Non-Government Organizations (NGOs)

India has many NGOs and there are hundreds of them, and some have done very useful development work. However, like in most developing countries, NGOs in India are involved in different aspects of extension work, mostly as a part of agreement with the government or donor funded agricultural and rural development projects. Names of a few NGOs claiming to perform extension or extension type activities are as follows:

- Action for Agricultural Renewal in Maharashtra (AFARM) www.afarm.org
- Action for Welfare & Awakening in Rural Environment (AWARE) www.aware-group.com/
- Energy Environment Group (EEG) www.energyenviron.com/
- Society for Advancement of Village Economy (SAVE) www.niir.org
- Sri Jagannath Rural Development Organization (SRDO)
- Arpan Seva Sansthan http://www.arpansevasansthan.org/
- Self-Employed Women's Association (SEWA) www.sewa.org/

Farmers-based associations, cooperatives and societies

Farmers' associations, cooperatives and societies in India have been quite active for years in ventures like self-help for development, specific commodity production, marketing, collective bargaining and many other purposes. Some of these associations have played important role in

poverty alleviation and rural women empowerment. A few examples of farmers' associations are given below.

- Federation of Small Farmers' Associations of Khaddar Area, North India & Sunstar Overseas, Ltd.
- Consortium of Indian Farmers Associations
- Turmeric Farmers Association of India
- Farmers' Association Pomegranate
- Association of Farmer Companies http://www.aofcindia.org/
- Organic Farming Association of India (OFAI) http://ofai.org/
- Punjab Young Farmers Association (India)
- Indian Farmers Association

India has about 580,000 cooperatives including 375,000 agricultural cooperatives with 280 million member farmers. Types of agricultural cooperatives are primary agricultural credit/service societies, agricultural non-credit societies, agricultural cooperative marketing societies, and cooperative farming societies. They all deal in credit, inputs, marketing, agro-processing and farm extension services. There are fertilizer cooperatives, sugar cooperatives, and dairy cooperatives. The Indian Farmers Fertilizer Cooperative Limited (IFFCO) www.iffco.coop/ is one of the biggest manufacturers of fertilizers in the world.

The National Agricultural Cooperative Marketing Federation of India (NAFED) www.nafed-india.com is the focal organization of marketing cooperatives for agricultural produce in the country. NAFED, founded in 1958, is under the Ministry of Agriculture and is now one of the largest procurement and marketing agencies for agricultural products in India. Problems faced by primary agricultural cooperative societies include low member participation, shortage of capital for inputs, government control and interference, outdated management practices, and political influence.

TRAINING OPTIONS FOR EXTENSION PROFESSIONALS

Pre-service education in extension may be obtained at any of the 50+ SAUs spread across India. Also, facilities for in-service training of extension staff are available at many institutions such as MANAGE, Agriculture Extension Division of ICAR, the Department of Agriculture and Cooperation, and the Department of Agricultural Research and Education, both under the Ministry of Agriculture. Certain well-established NGOs, public agricultural universities and research institutes like the Indian Agricultural Research Institute http://www.iari.res.in/, and some private agricultural companies can also organize in-service training courses for the extension staff under mutually agreed arrangements.

INFO-MEDIARIES AND INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FOR AGRICULTURE AND EXTENSION

Radio and television programs for farmers have been broadcast and telecast on regular basis for almost five decades. India is one of the top two countries which get ICT related outsourcing contracts worth millions of dollars from the USA. The city of Bangalore is considered as the Silicon Valley of India. According to the World Bank, in 2011, the number of mobile cellular subscriptions (per 100 people) in India was almost 72. During the same year, the number of Internet users (per 100 people) in the country was 10.07, but largely in urban areas.

India has made impressive progress in the application of ICT to its rural and agricultural development programs. Dozens of agricultural commodity focused and technical discipline based public and private IT networks exist, with many of them reaching the village level. A few examples are as follows:

- ***Bhoomi:*** Under this program, 20 million land records of 6.7 million land owners in 176 *taluks* of Karnataka State have been computerized. Other states have followed the suit.
- ***e-Choupal:*** http://www.echoupal.com The program links farmers directly to agricultural and aquaculture products companies dealing in soya, coffee, prawns etc. for the purchase of these commodities at competitive rates thus eliminating the middlemen. The program's principle is to inform, empower and compete. Presently, there are more than 6,500 e-Choupals across 10 states in India.
- ***IKisan:*** http://www.ikisan.com IKisan has been developed by the Nagarjuna Group, based in South India, with interest in agriculture, fertilizers and insecticides, among other areas. It is a comprehensive agriculture portal addressing the information, knowledge and business needs of farmers, traders and farm input agencies.
- ***Agriwatch:*** www.agriwatch.com is said to be the largest agribusiness portal in India. It enables access to agribusiness information covering more than 15 sub-sectors of agricultural and food industry. The website carries daily, weekly and fortnightly trade research reports.
- ***aAqua:*** http://aaqua.persistent.co.in/aaqua/forum/index It is one of the initiatives of the Indian Institute of Technology, Bombay presenting an online multilingual, multimedia agriculture portal for disseminating information from and to the grassroots agricultural communities. The program integrates multiple databases.
- ***DEAL:*** DEAL is an initiative of the Indian Institute of Technology, Kanpur. It is an ICT enhanced network built on an existing framework of tele-centers in rural institutions like village schools, and village level agricultural extension centers. It constitutes a digital knowledge base for the farmers and agricultural practitioners.
- ***e-Sagu:*** http://www.esagu.in/ It is an IT-based personalized agricultural extension system for disseminating expert advice on agriculture to the farmers in a timely manner.

- ***Akshaya:*** http://www.akshaya.kerala.govt.in/ The Akshaya Project is a market driven agricultural initiative through IT enabled Agricultural Business Centers in Kerala State. It provides web-based solutions to all categories of farmers.

The National Informatics Center (NIC) www.nic.in/ is a part of the Indian Ministry of Communications and Information Technology. It has launched several ICT initiatives for the benefit of rural people some of which are as follows:

- Computerized Rural Information Systems Project (CRISP)
- Land Records Computerization Project (LRCP)
- *eNRICH*: (for addressing the needs of rural people through networking, and facilitating communication between the government and citizens)
- *AGMARKETNET:* (for providing information on marketing prices of agricultural produce).
- *ASHA:* http://www.ashanet.org/ (for providing agribusiness information for farmers and for linking buyers and sellers directly)
- *RuralBazar:* http://www.rural.nic.in/sites/rural-bazar.asp (for showcasing of the agricultural products for rural producers as well as facilitating offline and online payments)
- *National Panchayat Portal* http://panchayat.nic.in: (for providing vertical and horizontal integration across rural *panchayat raj* institutions, facilitating communication, message broadcast, funds transfer, monitoring of programs, etc.)
- *e-Gram Vishwa Gram:* (for maintaining information records of village families and for providing certificates of income, caste, domicile, etc. to rural people)

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