Indian Agriculture: Role of Extension in the Changing Agriculture Scenario

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Article History

Article ID: IJEP45
Received in 3rd August, 2015
Received in revised form 16th October, 2015
Accepted in final form 9th December, 2015

Abstract

The extension services in India are highly pluralized. Numerous agencies are now providing extension service in varied nature through different approaches.As agriculture is a state subject, each state has its own programmes and policies to support extension services to its farming community. Various Central Government Ministries (Agriculture, Commerce, IT, Rural Development etc.) have their own programmes and schemes to support the states in strengthening their farmer oriented services.The challenges to agriculture and natural resource management are unprecedented in the history of mankind and this has led to changes in agriculture education, research and extension world over. The development of sustainable Agriculture in a country will depend largely on the effectiveness of its Agriculture Extension strategies, its approaches, services delivery, methodology and processes. Farmer empowerment is the desired outcome of agriculture development and it can be achieved through engagement, learning and participation in the research and extension processes.Agriculture Extension has been the cornerstone of the agricultural development in the country rising from a food deficit to a food export economy in about 30 years.The critical role that extension plays is to expand the horizon of farmers, in terms of their knowledge, skills and attitudes about the management of natural, economic & social resources at their disposal.

Keywords: Role of extension, NGO, Krishi Vigyan Kendra

1. Introduction

The challenges to agriculture and natural resource management are unprecedented in the history of mankind and this has led to changes in agriculture education, research and extension world over. The development of sustainable Agriculture in a country will depend largely on the effectiveness of its Agriculture Extension strategies, its approaches, services delivery, methodology and processes. Farmer empowerment is the desired outcome of agriculture development and it can be achieved through engagement, learning and participation in the research and extension processes.Agriculture Extension has been the cornerstone of the agricultural development in the country rising from a food deficit to a food export economy in about 30 years. The green revolution has been possible because extension system succeeded in disseminating appropriate technologies and right cropping practices to the large, widely scattered and heterogeneous farming community in its villages.The critical role that extension plays is to expand the horizon of farmers, in terms of their knowledge, skills and attitudes about the management of natural, economic and social resources at their disposal ; They need understanding of acts, the government policies and programmes; and the basket of technologies available (production, post-harvest and marketing) so that they can make informed decisions.

2. Indian Agriculture: Role of Extension in the Changing Agricultural Scenario

The task force on hunger of the Millennium Project recommended increasing the agricultural productivity of food-insecure farmers through improvement of soil health, expansion of small-scale water management systems, improvement and accessibility of quality seeds, diversification of farm enterprises and establishment of an effective extension service (Sanchez et al., 2005).

2.1. Yield gaps and inter regional variations in productivity

All these figures show the advantage that exist for certain crops in certain districts and the potential that exists to increase the productivity by adopting appropriate extension and Transfer of Technology (ToT) strategy. The efforts required thus clearly point out addressing issues affecting different crops having advantage test field applicati0n of critical technologies that would considerably increase yield. The potential of new technologies evolved remain to be exploited huge technology transfer gaps at various levels.

Precision farming programs of Tamilnadu indicate that the yield of rice can be increased by more than 30% and the yield of other crops can be increased anywhere between 40 and 200% by following the SRI and precision farming techniques as proved through the TNAU implemented large scale demonstrations. This only indicates the reason for yield gap to be the problems in transfer of technology.

3. Extension Delivery Mechanisms in India

The extension services in India are highly pluralized. Numerous agencies are now providing extension service in varied nature through different approaches. Broadly, extension service providers could be categorized into three systems, *viz.,* public extension system, private extension system and individuals-based (Farmer to Farmer or Lead farmer to farmer) extension system. While the first two systems are more or less organized in nature, the latter system is largely unorganized.

As agriculture is a state subject, each state has its own programmes and policies to support extension services to its farming community. Various Central Government Ministries (Agriculture, Commerce, IT, Rural Development etc.) have their own programmes and schemes to support the states in strengthening their farmer oriented services. Agricultural Research and Education has been the primary domain of ICAR Institutes and Agricultural Universities (SAUs, CAU, DU). These research and educational institutions also have their own extension initiatives to reach farmers.

4. Extension Programmes through Five-Year Plans

Twelfth Five Year Plan (2012-2017) has just started a year ago and it is turning out to be a watershed plan for Extension. The Finance Minister of Union Government of India, in his budget speech for 2012-13 on 16.03.2012, has announced a Mission on Agricultural Extension and Technology. The Finance Minister also announced the intention of the Government to merge the ongoing programmes into a set of missions to address the needs of agricultural development in the Twelfth Five Year Plan. These Missions are:

4.1. National food security mission

which aims to bridge the yield gap in respect of paddy, wheat, pulses, millet and fodder. The ongoing Integrated Development of Pulses Villages, Promotion of Nutri-cereals and Accelerated Fodder Development Programme would now become a part of this Mission;

4.1. National mission on sustainable agriculture

Including Micro Irrigation is being taken up as a part of the National Action Plan on Climate Change. The Rainfed Area Development Programme will be merged with this;

4.3. National Mission on oilseeds and oil palm

Aims to increase production and productivity of oil seeds and oil palm;

4.4. National Mission on Agricultural Extension and Technology

Focuses on adoption of appropriate technologies by farmers for improving productivity and efficiency in farm operations; and

4.5. National horticulture mission

Aims at horticulture diversification. This will also include the initiative on saffron.

The private extension system involves a heterogeneous group of extension providers. The extension network of private companies comprising of its own agents and the input dealers is considerably strong. The mass media employed by the private extension systems like private TV channels, FM radio, community radio and print media are also reaching a sizeable proportion of farmers. Emergence of information technology and its application to extension have started making inroads in advisory services. Though the information providers are few in number, extension services offered through information technology is attracting the imagination of many.

The Department of Agriculture and Cooperation (DAC), Government of India has been implementing several centrally sponsored (implemented through state governments with partial budgetary contributions) and central sector (implemented through central or state or private institutions with 100% financial support) schemes. The DAC, through its Directorate of Extension has been implementing following programmes:

- Centrally Sponsored Scheme "Support to State Extension Programmes for Extension Reforms" is being implemented in all the states by way of new institutional arrangements for technology dissemination, wherein Agricultural Technology Management Agency (ATMAs) have been established at the District level.
- Central Sector Scheme Establishment of Agri-Clinics and Agri-Business Centres (ACABC) supports establishment of private agri-ventures which in turn supplement state agricultural extension services.
- The scheme of Mass Media Support to Agricultural Extension is being implemented to provide information to farmers on matters related to agriculture production through a network of Television and FM radio channels throughout the country, besides establishment of Community Radio Stations.
- In order to help farmers in tackling multifarious problems relating to their farm activities, 'Kisan Call Centres' have been established to reach out to all category of farmers at free of cost through national toll-free number, in their own language and at a time convenient to them.
- In order to provide continuous, need-based and horizon-expending avenues for human resource development of extension officials, National Institute of Agricultural Extension Management (MANAGE), Extension Educational Institutes

(EEIs) and State Agricultural Management & Extension Training Institute (SAMETIs) have been organizing training programme at different levels to meet the HRD needs of different category of extension personnel.

• Agricultural Exhibitions, Regional Fairs, Newspaper Ad campaigns etc. further supplement the extension initiatives of DAC.

5. Support to State Extension Programmes for Extension Reforms (ATMA Scheme)

Centrally Sponsored Scheme 'Support to State Extension Programmes for Extension Reforms' was launched in the year 2005-06. This concept was pilot tested under the World Bank assisted National Agricultural Technology Project (NATP) from 1999 to 2005. The scheme aims at promoting decentralized, demand-driven and farmer-accountable extension system through a new institutional arrangement for technology dissemination in the form of Agriculture Technology Management Agency (ATMA). ATMA provides an institutional mechanism for coordination and management of Agricultural Extension System in the district. At the Block Level, the Block Technology Team (BTT – a team of Line Department officials posted in the Block) and Block Farmer Advisory Committee (BFAC – a group exclusively of farmers in the Block) are jointly responsible for operationalization of the Scheme activities.

6. Agricultural Extension Initiatives of Public and Private

Various State Governments, Private agencies, NGOs, innovative farmers in India innovated different models or systems of Extension for efficient service delivery and are the successful models.

6.1. Telangana and Andhra Pradesh

Rythu Chaitanya Yatra (Farmers Motivation Campaigns) is another innovative approach of the state government to train the farmers on the technology gaps existing in their respective villages. This has given an opportunity to the extension personnel and scientists of agricultural university to reach every habitation or village and interact with farmers, educate them on the latest technologies in Agriculture and allied subjects and create awareness about various programmes and schemes.

6.2. Bihar

The state government has systematized the participatory planning and implementation of agriculture development activities. Marathon meetings and discussions with nodal officers, scientists and progressive farmers are held during February – March, followed by preparation of strategic plans by each development department. These plans are approved in the State Level Sanction Committee headed by Chief Secretary in April. The approved plans are shared with the implementing agencies at state and district level through workshops well before the commencement of the season.

6.3. Krishi Utsav Raths and Krishi Utsav Shivirs

Agriculture celebration campaigns and camps are organized in the month of May to mobilize and gear-up the farming community for adoption of latest technologies. Need based skill-building activities are arranged for all the farmers, particularly the resource poor and late-adopter category farmers.

6.4. Labour-first strategy

Labour-first strategy has been adopted by the state government for bringing in most crucial changes like maintaining plant density and spacing in crops like paddy. The Transplanters' training has been a huge attraction and is turning out to be a game-changer strategy for achieving higher productivity within the available resources.

6.5. Transparency in input distribution

Farm implements camps are organized every month so that farmers can visit these camps and purchase the implements of their choice and get the eligible subsidy amount in the same camp. Similarly the seed distribution camps are organized with the participation of all the seed companies.

6.6. Maharashtra

Maharashtra government has been promoting a concept of Farmer-Industry-Research-Extension (FIRE) for achieving Productivity-Quality-Returnability-Sustainability (PQRS). The five point action strategy of the state to achieve this is as follows:

6.7. Public Private Partnership for Extension

PPP for extension is gaining ground in the state. The primary objectives of the PPP inn extension are;

- Mobilize farmers into groups & federate groups into Producer Companies (PCs)
- Implement end-to-end Extension Projects to develop crop specific value chains
- Demonstrate public or private technologies (e.g. seed and other inputs)
- Increase productivity by adopting best technologies in public and private sector
- Aggregate farm produce.

6.8. Tamil Nadu

The Tamil Nadu government has a multi-directional approach to extension. It aims at technology transfer through group approach effective utilization of Farmer Friend provided under ATMA, handbook of programmes and schemes for the benefit of farmers and penetrative use of cyber extension. Technology adoption rate is being pushed through demonstrations, capacity building activities, exposure visits, exhibitions and mass media programmes.

6.9. Uzhavar Peruvizha

Technologies like SRI, SSI, SPI, Precision farming and micro

irrigation have been promoted on large scale. These activities are strongly supported by requisite policy interventions like UzhavarPeruvizha, Whole Village development programmes.

6.10. Mobile Enabled Computer Server Gateway programme

Mobile Enabled Computer Server Gateway programme for capturing baseline information of all farm holdings. This includes personal details, bank details, affiliation to various groups, land holdings, crops cultivated, source of irrigation, net income, plantation crops, farm animals, farm machineries, farm energy sources, micro irrigation facilities, apiary, fishery, sericulture and service requirement. This will serve as a platform for information retrieval by line departments while developing farmer oriented programmes.

6.11. Farm Crop Management System (FCMS)

FCMS is an ambitious project of the government which aims at developing inventories of individual farms along with its fertility i9ndex so that suggesting best suited farm plan would be a possibility and providing technological options for higher productivity is feasible. With constant monitoring and technology support, the project aims at assessment of inputs or credit requirement, accurate forecasting of the quantum of output and accordingly providing market linkages for ensuring higher returnability to farmers.

6.12. Extension through Krishi Vigyan Kendras (KVK)

The Indian Council of Agricultural Research established the first KVK in 1974 at Puducherry (Pondicherry) under the administrative control of the Tamil Nadu Agricultural University, Coimbatore. At present there are 631 KVKs (covering most of the districts of the country), which include 429 under State Agricultural Universities (SAU) and Central Agricultural University (CAU), 51 under ICAR Institutes, 99 under NGOs, 35 under State Governments and 17 under other educational institutions.

6.13. Extension by Private Sector

Most of the seed and input companies have an element of extension (mostly embedded with the sale of their inputs or marketing of products) through their field workers. These companies also provide advisory services through their network of dealers and traders. An estimated three lakh input dealers sell various kinds of inputs related to farming and they provide product-related advisory services to farmers as part of their marketing strategy.

A few private companies have attempted 'one-stop farm solution centres' for furthering their extension services. Some of them are briefly mentioned here:

6.14. Mahindra Krishi Vihar

Mahindra and Mahindra Limited has established one-stop solution centres with the establishment of Mahindra Shubhlabh Services subsidiary, since 2000. The one-stop solution centres operate on a franchise basis and provide quality inputs, rent farm equipment, credit in partnership with banks, farm advice by trained field supervisors who visit fields, and arrange contracts with processors for off-take of crop produce. Dovetailed with the extension advice in this model are the distributorships and retailing of fertilizer and agrochemicals in partnership with the respective manufacturers.

6.15. Hariyali Kisaan Bazaar

DCM Shriram Consolidated Ltd. Seeks to provide 'end-to-end agri-solutions' to farmers through these outlets built around a package of agri-inputs, extension, credit and produce marketing services. These outlets have evolved over the years into a 'rural super bazaar' which also provide fuel, credit, insurance and mobile phones besides agri-related services, all under one roof.

6.16. Tata Kisan Sansar by tata chemicals limited

Tata Kisan Sansar has a franchise-based 'hub and spokes' model of outlets. The extension services offered by these one-stop shops include soil testing, remote diagnostics and house brands for seeds, cattle feed, pesticides and sprayers.

6.17. Godrej agrovet

It has a chain of rural outlets and run in partnership with other companies to extend its produce range. Its 'one-stop solutions' model offers agricultural equipment, consumer goods, technical services, soil and water testing, veterinary, financial and post office services, and pharmaceuticals.

6.18. Jain irrigation

The Company has Jain High-Tech Agriculture Training Institute for training extension personnel on topics that include watershed management, water resources and irrigation management, fertigation and modern methods of crop cultivation. These trainings are offered to farmers, students, government department officers and NGOs who have interest in water management and irrigation related topics.

6.19. Extension through contract farming

A partnership arrangement between Rallis (supplies agri inputs and know-how), ICICI (provides credit to farmers), and HLL (the processing company) offers a buyback arrangement for wheat. Assured market and floor price for their wheat, timely supply of quality inputs and technical advice at no extra charge are the benefits to farmers. In turn, HLL enjoys a more efficient supply chain, while both Rallis and ICICI have an assured clientele for their products and services (Ferroni and Zhou, 2011).

6.20. PepsiCo

PepsiCo practices contract farming in tomato, Basmati rice, chillies and groundnuts in Punjab, and potato in a number of states including Punjab, PepsiCo ensures technology transfer through trained extension personnel, and supplies agricultural implements free of charge and quality farm inputs on credit. In return, it obtains agreed quantities of quality produce from farmers at a pre-defined price.

7. Extension by NGOs

NGOs such as BAIF, Basix and PRADAN operate in numerous states and have been active for many years.

7.1. The Bharatia Agro-Industries Foundation (BAIF)

BAIF is senior-most among the three NGOs. A trusted disciple of Mahatma Gandhi ShriManibhai Desai established the Bharatiya Agro Industries Foundation (BAIF), a non-profit, Public Charitable Trust in 1967 to replicate his experiences in rural development. BAIF has now been renamed as BAIF Development Research Foundation. BAIF is a Gandhian organization committed to imparting livelihood opportunities to the rural underprivileged families. BAIF currently works in around 50,000 villages in 12 states of India.

7.2. BASIX

BASIX is a livelihood promotion institution working in 17 states, 223 districts and over 39,251 villages. The Holding Company of the BASIX Group is called BharatiyaSamruddhi Investments and Consulting Services (BASICS Ltd.) which started operations in 1996 as India's first 'new generation livelihood promotion institution'. It has a staff of over 10,000 of which 80 percent are based in small towns and villages.

7.3. PRADAN

Professional Assistance for Development Action (PRADAN) is a voluntary organization registered under the Societies Registration Act of India. Established in Delhi in 1983, PRADAN now has some 268 highly motivated and skilled professionals working in remote villages of India. PRADAN professionals, divided into 41 teams, work with over 206,298 families in 4,138 villages across eight of the poorest states in the country. A majority of the families that PRADAN works with belong to the Schedule Tribes and Schedule Castes

7.4. MYRADA

Mysore Resettlement and Development Agency is a registered Non – Governmental Organization established in the year 1968. MYRADA serves the rural farming community by organizing various capacity building programs in agriculture and allied activities through appropriate local level institutions.

7.5. Dhan foundation

Development of Humane Action (DHAN) Foundation, a professional development organisation, was initiated on October 2, 1997. It brings highly motivated, educated young women and men to the development sector. They would make new innovations in development to root out poverty from the country, in thus achieving the Mission of the organisation.

7.6. WOTR

WOTR is a not-for-profit NGO founded in 1993 operating currently in 6 Indian states – Maharashtra, Andhra Pradesh, Madhya Pradesh, Rajasthan, Jharkhand, and Orissa.

WOTR is recognised widely as a premier institution in the field of participatory Watershed Development andClimate Change Adaptation. Its unique strength lies in its on-field experience and in a systemic, participatory approach.

8. Extension through ICT applications

8.1. Kisan Call Centres (KCC)

To harness the potential of ICT in agriculture, Ministry of Agriculture, took the initiative to launching an innovative scheme 'Kisan Call Centres' on January 21, 2004 aimed at offering solutions to farmers' queries on a telephone call. These Kisan Call Centres (KCCs) are presently operating in 14 locations covering all the States & UTs with 278 Call Center Agents (CCAs) engaged therein answering farmers' queries in their language. Farmers from any part of the country can access KCC by dialing toll free number 1800-180-1551 from 6.00 AM to 10.00 PM on all 7 days a week.

8.2. Aqua

Aqua is an internet based discussion portal initiated in 2003 by the Developmental Informatics Lab of the Indian Institute of Technology in kiosks and cybercafés in Pune. A farmer can ask a question of aAqua from a kiosk or cybercare; other farmers or experts view the question and reply (in English, Hindi or Marathi). The number of registered users was about 17,000 by early 2011.

8.3. AvaajOtalo (literally, 'voice stoop')

AvaajOtalo is a voice-based system for farmers to access and discuss relevant and timely agricultural information by phone. The system was designed in 2008 as a partnership between UC Barkeley School of Information, Stanford HCI Group, IBM India Research Laboratory and Development Support Centre (DSC), an NGO in Gujarat. The system itself is a Voice-XML based interactive Voice Response system.

8.4. Digital green

Digital Green is a non-profit organization with funding from the Bill and Melinda Gates Foundation and the Deshpande Foundation. It disseminates agricultural information to small and marginal farmers through digital video. Digital Green is partnering with large, well established organizations such as BAIF and PRADAN to carry out. It will be interesting to see how video as a medium is incorporated into, and is allowed to shape, the methods of extension of these and other organizations.

8.5. IFFCO Kisan Sanchar limited (IKSL)

IKSL emerged as a partnership between mobile operator BhartiAirtel and IFFCO (the Indian Farmers Fertizer Cooperative Ltd.) in 2007. Five free voice messages in local languages and customized for different jurisdictions are sent to subscribers every day, except Sunday. A 24-hour farmer helpline completes the service. IKSL markets this as part of a special mobile package on Airtel's network with an IFFCO Kisan branded SIM card for which farmers pay a one-time activation fee.

8.6. Reaters market light (RML)

RML is a leading commercial information service provider for farmers via SMS in local language. The information includes local market prices, taluk-specific weather forecasts and crop advisories. RML is sold as an easy-to-use card (RML Direct) in several retail outlets in rural India. As per the information available in its website (http//www.reutersmarketlight.com/about_us.html) it offered price related information from 1300 markets spread over 13 states. It claims an estimated 1 million subscribers from 50000 villages and a total of 4 million farmers have been benefited through using and sharing.

8.7. Choupal

Choupal is an initiative by the agri-division of ITC Ltd., the Indian Tobacco Company. Each e-Choupal is equipped with a computer connected to the internet. A local person acting as a sanchalak (coordinator) runs the village e-Choupal. Farmers can obtain daily updates on crop prices in local mandis, procure seed, fertilizer, and other products including consumer goods, and sell their crops for prices offered by ITC. Launched in June 2000, 'e-Choupal', has already become the largest initiative among all internet-based interventions in rural India. 'e-Choupal' services today reach out to over 4 million farmers (as per data available in http;/www.echoupal.com/frontcontroller.ech) growing a range of crops-soybean, coffee, wheat, rice, pulses, and shrimp – in over 40,000 villages through 6500 kiosks across ten states (Madhya Pradesh, Haryana, Uttarakhand, Karnataka,Telangana, Andhra Pradesh, Uttar Pradesh, Rajasthan, Maharashtra, Kerala and Tamil Nadu).

9. Extension through Mass Media

New Initiatives:

- To ensure that the programmes being telecast are relevant for the particular season or crop and timely telecast of messages or advisories, besides the State Level and District Level Committees the following mechanisms are being put in place:-
- Constitution of 'Technical Support Group' by the States under the Chairmanship of Director (Agriculture) to meet on a monthly basis
- Constitution of Agriculture Programme Advisory Committee in the DoordarshanKendras under the Chairmanship of Station Director or District Collectors.

10. Agri-Clinics & Agri-Business Centres (ACABC)

ACABC is a Central Sector Scheme under implementation since 2002. The scheme promotes the involvement of agri-preneurs to supplement the efforts of public extension system by way of setting up of agri-ventures in agriculture and allied areas. Agri-Clinics are envisaged to provide expert advice and services to farmers on various technologies including soil health, cropping practices, plant protection, crop insurance, post harvest technology and clinical services for animals, feed and fodder management, prices of various crops in the market etc.

10. *Mahagrapes*

Mahagrapes was born in 1991 with the valuable support of (a) National Co-operative Development Corporation (NCDC) New Delhi (b) Government of Maharashtra though its Department of Co-operation and Maharashtra State Agriculture Marketing Board (c) Agricultural & Processed Food Products Export Development Authority (APEDA), New Delhi and (d) National Horticulture Board (NHB), New Delhi. It is a Partnership firm of 15 cooperative societies, the main aim being to export grapes and other fresh produce to different parts of the world.

***11*. Producers Companies**

In Madhya Pradesh, 14 producer companies were established under the World Bank supported District Poverty Initiatives Project (DPIP). Each company received a seed capital of Rs.25 lakh and annual contingency grant of Rs.7 lakh by the State Government. Companies have been registered with the Registrar of Companies.

12. Vegetable and Fruit Promotion Council Kerala (VFPCK)

VFPCK is an ISO 9001-2000 certified company registered under section 25 of Indian Companies Act, 1956 and has been established to bring about overall development of fruit and vegetable sector in Kerala. Established in 2001 as the successor organization of Kerala Horticulture Development Programme (KHDP), VFPCK is managed by a result oriented multidisciplinary team of professionals.

13. Farm School

Farm School to promote Farmer-to-Farmer Extension: Farm School under ATMA scheme is an attempt to institutionalize the concept of farmer-to-farmer-extension. Technical back-up from KVKs or Line Departments is ensured through-out the farm school period. These Farm Schools' are to be operationalized at Block or Gram Panchayat level and are set up in the field of achiever farmers who are the 'Teachers' in the Farm School. Leaders of Commodity Interest Groups (CIGs) formed in different villages and other farmers are the students or trainees at these Farm School.

14. To take it forward, it would be necessary to have a perspective plan of Agricultural Extension

1. Agricultural Extension and Technology Mission in all the States

2. Theme based Extension specialization or Promoting Specilisation or expertise in Extension:

Irrigation Extn, PPP, Ecofarming, Precision farming, Animal husbandry, Horticulture (Fruits, Flowers, Vegetables, Spices), Ground water Extn, HR, M&E, Ext Research, Post HarvestExtn, Rainfed/drylandExtn, MarketledExtn-

3. Placing Extension Experts at District level – location or district specific

4. A data base has to be prepared in terms of physical infrastructure (vehicles, offices, buildings etc) and information sources for the officials of State Department of Agriculture.

5. One AEO per Revenue village for effective guidance to farmers and also to address the unemployment

6. Create data base on crops, soils, production technologies, markets, input facility, ToT and Training, research institutions and Connect all the villages with the database- IT in Extension – technology mapping and resource mapping

7. Strengthening KVKs and DAATT centres for skills development

8. Empowerment of Farmer Institutions- FACs, CIGs, FIGs, FFs

9. Restructuring Extension: policies, programs, schemes, human power, facilities, coverage, institutions, infraustructure, networking.

10. Convergence in Extension planning and delivery: Development Departments, Private industry, NGOs, PR institutions, SAUs, ICAR

11. Insurance Extension policy

12. Capacity building of Extension Professionals, farmers - Focus on Capacity building of women farmers and farm Labour

13. Strengthening Custom hiring centers to promote farm mechanization

14. Creation of storage or godown facilities- post harvest, value addition at Block level leading marketled extension

This calls for new ways of planning, prioritizing and executing as modern agriculture is increasingly turning out to be knowledge based and extension system is required to gain expertise in emerging areas like novel information communication and Transfer of Technologies. Human development can take place only with skill development; we need skilled people to build a new society and run it efficiently.

15. Conclusion

The development of sustainable Agriculture in a country will depend largely on the effectiveness of its Agriculture Extension strategies, its approaches, services delivery, methodology and processes. Farmer empowerment is the desired outcome of agriculture development and it can be achieved through engagement, learning and participation in the research and extension processes. Agriculture Extension has been the cornerstone of the agricultural development in the country rising from a food deficit to a food export economy in about 30 years.