

**Post Graduate Diploma in Agricultural Extension
Management (PGDAEM)**

AEM-101

Introduction to Agricultural Extension Management

(4 Credits)



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AEM-101

Introduction to Agricultural Extension Management **(4 Credits)**

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Unit-1

Concept, Objectives, Principles, Philosophy, and Process of Extension

Structures

- 1.0. Objectives
- 1.1 Introduction
- 1.2 Concept of Agricultural Extension
- 1.3 Extension Objectives and Function to Support Achieving Agricultural Development
- 1.4 Principles of Agricultural Extension
- 1.5 Philosophy, Needs and Levels of Agricultural Extension
- 1.6 Process and Steps involved in Agricultural Extension

1.0. Objectives

After going through this unit, you will be in a position to:

- Explain the meaning and concept of agricultural extension;
- discuss the objectives, principles and philosophy in reaching farmers and other clients effectively;
- describe the process and steps involved in agricultural extension in the transfer of technology;

1.1 Introduction

In agriculture, knowledge and decision-making capacity determine how production factors – soil, water and capital – are utilized. Agricultural extension is central in formulating and disseminating knowledge, and in teaching farmers to be

competent decision makers. Therefore, extension plays an important role in most of agricultural development projects.

The primary goal of agricultural extension is to assist farming families in adapting their production and marketing strategies to rapidly changing social, political and economic conditions so that they can, in the long term, shape their lives according to their personal preferences and those of the community.

Agriculture Extension is generally described as a process and a system in which information, knowledge and skills relating to farming practices are transmitted through various channels and methods to its clients. Agricultural extension is generally perceived as central in formulating and disseminating knowledge and in teaching farmers to be competent decision makers.

1.2 Concept of Agricultural Extension

The Concept of Extension

The use of the term 'extension' originated in England in 1866 with a system of university extension which was taken up first by Cambridge and Oxford Universities, and later by other educational institutions in England and in other countries. The term 'extension education' was first used in 1873 by Cambridge University to take the educational advantages of universities to ordinary people. There are many experts and practitioners who have defined and opined extension in various ways encompassing many facets of extension's functions.

Historically, extension has meant education in agriculture and in home economics for rural people. This education is practical, aimed at improving farm and home.

According to Ensminger (1957), extension is education and that its purpose is to change attitudes and practices of the people with whom the work is done. Leagans (1961) conceptualized extension education as an applied science consisting of content derived from research, accumulated field experiences and relevant principles drawn



from the behavioural sciences synthesized with useful technology into a body of philosophy, principles, content and methods focused on the problems of out-of-school education for adults and youth.

In addition to practicing in the field, extension is formally taught in colleges and universities leading to the award of degrees. Research is also carried out in extension. What is unique for extension is the application of the knowledge of this discipline in socio-economic transformation of the rural communities. In this context, *Extension may be defined as the science of developing capability of the people for sustainable improvement in their quality of life.* The main aim of extension is human resource development.

The concept of extension is based on the following basic premises.

1. People have unlimited potential for personal growth and development.
2. The development may take place at any stage of their lives, if provided with adequate and appropriate learning opportunities.
3. Adults are not interested in learning only for the sake of learning. They are motivated when new learning provides opportunity for application, for increased productivity and improved standards of living.
4. Such learning is a continuous level of rural populations and should be provided on a continuing basis, because the problems as well as the technologies of production and living are continuously changing.
5. Given the required knowledge and skills, people are capable of making optimal choices for their individual and social benefits.

1.3 Extension Objectives and Functions to Support Achieving Agricultural Development

Extension objectives

The general objectives of extension are –

1. To assist people to discover and analyze their problems and identify their felt needs.

2. To develop leadership among people and help them in organizing groups to solve their problems.
3. To disseminate research information of economic and practical importance in a way people would be able to understand and use.
4. To assist people in mobilizing and utilizing the resources which they have and which they need from outside.
5. To collect and transmit feedback information for solving management problems.

Functions of Extension

Change in knowledge - means change in what people know. For example, farmers who did not know of a recent HYV crop came to know of it through participation in extension programmes. The Extension Agents (EAs) who did not know of Information Technology (IT) came to know of them after attending a training course.

Change in skill - is change in the technique of doing things. The farmers learnt the technique of growing the HYV crop which they did not know earlier. The EAs learnt the skill of using IT.

Change in attitude - involves change in the feeling or reaction towards certain things. The farmers developed a favourable attitude towards the HYV crop. The EAs developed a favourable feeling about the use of IT in extension programme.

Change in understanding - means change in comprehension. The farmers realized the importance of the HYV crop in their farming system and the extent to which it was economically profitable and desirable, in comparison to the existing crop variety. The EAs understood the use of IT and the extent to which these would make extension work more effective.

Change in goal - is the distance in any given direction one is expected to go during a given period of time. The extent to which the farmers raised their goal in crop production, say, increasing crop yield in a particular season by five quintals per hectare



by cultivating the HYV crop. The EAs set their goal of getting an improved practice adopted by the farmers within a certain period of time by using IT.

Change in action - means change in performance or doing things. The farmers who did not cultivate the HYV crop earlier cultivated it. The EAs who earlier did not use IT in their extension programmes started using them.

Change in confidence - involves change in self-reliance. Farmers felt sure that they have the ability of raising crop yield. The EAs developed faith on their ability to do better extension work. The development of confidence or self-reliance is the solid foundation for making progress.

To bring desirable change in behaviour is the crucial function of extension - For this purpose, the extension personnel shall continuously seek new information to make extension work more effective. The farmers and home makers also on their own initiative shall continuously seek means of improving their farm and home. The task is difficult because millions of farm families with little education, scattered in large areas with their own beliefs, values, attitudes, resources and constraints are pursuing divers enterprises.

1.4 Principles of Agricultural Extension

Principles of Extension

Principles are generalized guidelines, which form the basis for decision and action in a consistent way. The universal truth in extension, which have been observed and found to hold good under varying conditions and circumstances are presented.

1. **Principles of cultural difference.** Culture simply means social heritage. There is cultural difference between the extension agents and the farmers. The differences may be in their habits, customs, values, attitudes and way of life. Extension work, to be successful, must be carried out in harmony with the cultural pattern of the people.

2. **Grass roots principle.** Extension programmes should start with local groups, local situations and local problems. It must fit to the local conditions. Extension work should start with where people are and what they have. Change should start from the existing situation.
3. **Principle of indigenous knowledge.** Indigenous knowledge systems have developed through generations of work experiences and problem solving in their own specific situations. The indigenous knowledge systems encompass all aspects of life and people consider it essential for their survival. Therefore, the extension agent should try to understand them and their ramifications in the life of the people, before proceeding to recommend something new to them.
4. **Principle of interest and needs.** People's interests and needs are the starting points of extension work. Identifying the real needs and interests of the people are challenging tasks of Extension Agents. The extension agents should not pass on their own needs and interests as those of the people. Extension work shall be successful only when it is based on the interests and needs of the people as they see them.
5. **Principle of learning by doing.** Learning remains far from perfect, unless people get involved in actually doing the work. Learning by doing is most effective in changing people's behaviour. This develops confidence as it involves maximum number of sensory organs. People should learn what to do, why to do, how to do and with what result.
6. **Principle of participation.** Most people of the village community should willingly co-operate and participate in identifying the problems, planning of projects for solving the problems and implementing the projects in getting the desired results.

The participation of the people is of fundamental importance for the success of an extension programme. People must share in developing and implementing the programme and feel that it is their own programme.

1. **Family principle.** Family is the primary unit of society. The target for extension work should, therefore, developing the family as a whole, economically and socially. Hence, the farmers, the farm women and farm youth are also to be involved in extension programmes.



2. **Principle of leadership.** Identifying different types of leaders and working through them is essential in extension. Leadership traits are to be developed in the people so that they of their own shall seek change from less desirable to more desirable situation. The leaders may be trained and developed to act as carriers of change in the villages. The involvement of local leaders and legitimization by them are essential for the success of a programme.
3. **Principle of adaptability.** Extension work and extension teaching methods must be flexible and adapted to suit the local conditions. This is necessary because the people, their situation, their resources and constraints vary from place to place and time to time.
4. **Principle of satisfaction.** The end product of extension work should produce satisfying results for the people. Satisfying results reinforce learning and motivate people to seek further improvement.
5. **Principle of evaluation.** Evaluation prevents stagnation. There should be a continuous built-in method of finding out the extent to which the results obtained are in agreement with the objectives fixed earlier. Evaluation should indicate the gaps and steps to be taken for further improvement.

1.5 Philosophy, Needs and Levels of Agricultural Extension

The Philosophy of Extension

According to Kelsey and Hearne (1967), the basic philosophy of extension education is to teach people how to think, not what to think. Extension's specific job is inspiring, supplying specific advice and technical help, and counseling to see that the people as individuals, families, groups and communities work together as a unit in 'blueprinting' their own problems, charting their own courses, and that they achieve their objectives. Sound extension philosophy is always forward looking. This philosophy becomes the foundation of needs and levels of extension.

Need for Extension

The need for extension arises out of the fact that the condition of the rural people in general, and the farm people in particular, needs be improved. There is a gap between

what is – the actual situation and what ought to be – the desirable situation. This gap has to be narrowed down by the application of science and technology in their enterprises and bringing appropriate changes in their behaviour.

According to Supe (1987), the researchers neither have the time nor are they equipped for the job of persuading the villagers to adopt scientific methods, and to ascertain from them the rural problems. Similarly, it is difficult for all the farmers to visit the research stations and obtain first-hand information. Thus, there is need for an agency to interpret the findings of research to the farmers and to carry the problems of the farmers to research for solution. This gap is filled by the extension agency.

Levels of Extension

Extension is generally thought of at two levels, extension education and extension service. Extension at these two levels are interrelated, but at the same time maintain their separate identity.

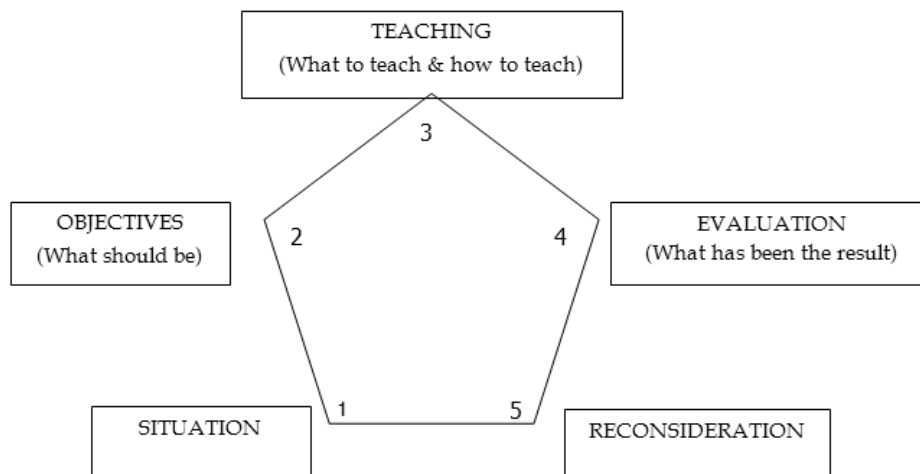
Extension Education – The extension education role is generally performed by the higher learning institutions like the Agricultural and other Universities and Colleges, ICAR Institutes, Home Science Colleges and apex level Training and Extension Organizations. At the university level, extension is integrated with teaching and research, while at the research institutes, extension is integrated with research. At the other apex level organizations, extension is generally integrated with training in extension.

Extension service – It is mainly to provide educational service to the people according to their need, for improving their life through better working. The main responsibility of extension service is with the State Government. The departments of Agriculture, Horticulture, Animal Husbandry, Veterinary, Forestry, Fishery, Sericulture, etc. of the State Government carry out extension work with the farmers and rural people over the entire State. The departments maintain close contact with the relevant Universities and Research Institutes for obtaining appropriate technology and methodology for extension work, and for providing them with feedback information from the field for research.

1.6 Process and Steps involved in Agricultural Extension

The Extension Educational Process

Extension education is a participatory process and involves five essential and interrelated steps. The sequence of steps is discussed on the basis of concept developed by Leagans (1967).



First Step. The first step consists of collection of facts and analysis of the situation. Facts about the people and their enterprises: the economic, social, cultural, physical and technological environment in which they live and work. These may be obtained by appropriate survey and establishing rapport with the people.

Second Step. The next step is deciding on realistic objectives which may be accomplished by the community. A limited number of objectives should be selected by involving the local people. The objectives should be specific and clearly stated, and on completion, should bring satisfaction to the community. Objectives should state the behavioral changes in people as well as desired economic and social outcomes.

Third Step. The third step is teaching, which involves choosing what should be taught (the content) and how the people should be taught (the methods and aids to be used). It requires selecting research findings of economic and practical importance relevant to the community, and selection and combination of appropriate teaching methods and aids.

Fourth Step. The fourth step is evaluating the teaching, i.e. determining the extent to which the objectives have been reached. To evaluate the results of an educational programme objectively, it is desirable to conduct a re-survey. The evidence of changed behaviour should be collected, which shall not only provide a measure of success, but shall also indicate the deficiencies, if any.

Fifth Step. The fifth step is re-consideration of the entire extension educational programme on the light of the results of evaluation. The problems identified in the process of evaluation may become the starting point for the next phase of the extension educational programme, unless new problems have developed or new situations have arisen.

Thus, the continuous process of extension education shall go on, resulting in progress of the people from a less desirable to a more desirable situation.



Unit-2

Evolution of Agricultural Extension

Structures

- 2.0. Objectives
- 2.1. Introduction
- 2.2. Community Development Programmes (CDP) : Foundation for Extension Programmes in Agriculture in India
- 2.3. Extension Strategy for Agricultural Development
- 2.4. Agricultural Development and Extension Programmes
- 2.5. Various Client Focussed Programmes and Projects in Agricultural Development
- 2.6. Extension Programmes in Other Countries
- 2.7. Summing Up

2.0 Objectives

After going through this unit, you will be able to:

- Know the genesis of agricultural extension and its programme activities.
- Obtain idea on various development programmes in agriculture and allied areas to help farmers.
- Expose yourself on different facets of Community Development Programmes.
- Know specific agriculture extension programmes in India and other countries.

2.1 Introduction

Agricultural extension is a general term meaning the application of scientific research and new knowledge to agricultural practices through farmer education. The field of **extension** now encompasses a wider range of communication and learning activities organized for rural people by professionals from different disciplines, including agriculture, agricultural marketing, health, and business studies.

The term *extension* was first used to describe adult education programmes in England in the second half of the 19th century; these programmes helped to expand - or extend - the work of universities beyond the campus and into the neighbouring community. The term was later adopted in the United States of America, while in Britain it was replaced with "advisory service" in the 20th century. A number of other terms are used in different parts of the world to describe the same or a similar concept. The objectives of Extension Education are

- "life-Long Learning"
- provide programs for off-campus adults from various walks of life to **continue learning** and obtaining further knowledge and skills
- providing an excellent channel and opportunity for people to meet the needs of **self-growth** and for society.

Definition

The term extension was first used in the United States of America in the first decade of this century to connate the extension of knowledge from land grant colleges to the farmers through the process of informal education. In India, extension work was primarily started by F.L. Brayne (1920) in Punjab. The term community development and extension education became more popular with the launching of community development projects in 1952 and with the establishment of the national extension service in 1953, Since then, community Development has been regarded as a programme



for all-round development of the rural people and extension education as the means to achieve this objective

Definition and Concepts

1. Extension Education deals with practical items of information which is useful for rural people which solve their daily problems, specially those related to agricultural production. (Thorat)
2. Extension Education is an integral behavioral science which contributes towards the understanding and formulation of methods and procedures for bringing planned change in human behavior.
3. Extension education is education for the betterment of people and for changing their behavior i.e. knowledge, skill and attitude.
4. Extension education is the dissemination of useful research findings and ideas among rural people to bring out desirable changes in their social and cultural behavior.
5. Extension education is an applied science consisting of contents derived from researches, accumulated field experiences and relevant principles drawn from the behavioral sciences synthesized with useful technology, in a body of philosophy, principles, contents, and methods focused on the problems of out at school education for adults and youths. (Leagans. J.P.)
6. Extension education is an applied behavioral science, the knowledge of which is to be applied for desirable changes in the behavioral complex of the people.
7. Extension is education and its purpose is to change the attitude and its purpose is to change the attitude and practices of the people with whom the work is done.
8. Extension education is a science which deals with various strategies of change in the behavioral patterns of human beings through technological and scientific innovation for the improvement of their standard of living.
9. Extension is to teach a person how to think, not what to think, and to teach people, to determine accurately their own needs to find solution to their own problems and to help them acquire knowledge and develop convictions in that direction.

10. Extension is an out-of school system of education in which adults and young people learn by doing. It is a partnership between government, the land grant colleges and the people, which provides services and education designed to meet the needs of the people

Importance, scope & objectives of Extension Education

Importance

1. Extension uses democratic methods in educating the farmers.
2. Extension helps in adoption of innovations.
3. Extension helps in studying and solving the rural problems.
4. Extension increases farm yields and improves the standard of living of farmers
5. Extension makes good communities better and progressive.
6. Extension contributes to national development programmes

Scope

It includes all activities of rural development. So extension programmes should be dynamic and flexible. The areas indicating scope of Extension are listed below

Increasing efficiency in agricultural production.

1. Increasing efficiency in marketing, distribution and utilization of agricultural inputs and outputs
2. Conservation, development and use of natural resources.
3. Proper farm and home management
4. Better family living.
5. Youth development.
6. Leadership development.
7. Community and rural development.
8. Improving public affairs for all round development.
9. To raise the standard of living of the rural people by helping them in right use of their resources.



10. To help in planning and implementing the family and village plans for increasing production in various occupations.
11. To provide facilities for better family living.
12. To provide knowledge and help for better management of farms and increase incomes.
13. To encourage the farmers to grow his own food, eat well and live well.
14. To promote better social, natural recreational intellectual and spiritual file among the people.
15. To help rural families in better appreciation of SWOT in the village.
16. To open new opportunities for developing talents and leadership of rural people.
17. To build rural citizens who are:
18. Proud of their occupation
19. Independent in thinking.
20. Constructive in outlook.
21. capable, efficient and self-reliant in character
22. having love of home and country m their heart

Seven reasons why Extension is needed today

1. We are sustainers: of green revolutions
2. We are catalysts: of change – NAIP
3. We are an agency of empowerment: SHG/WIG/CIG
4. We are human infrastructure: Multiplier effect
5. We are contextualizers: more than GOOGLE-how to use it
6. We are synergists: ICAR-SAU-DEPT-FARMERS
7. We are collaborators: PPP mode ICT etc

The central task of extension is to help rural families help themselves by applying science, whether physical or social, to the daily routines of farming, homemaking, and family and community living.

- [1] 1965: Agricultural extension has been described as a system of out-of-school education for rural people.
- [2] 1966: Extension personnel have the task of bringing scientific knowledge to farm families in the farms and homes. The object of the task is to improve the efficiency of agriculture.
- [3] 1973: Extension is a service or system which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting social and educational standards.
- [4] 1974: Extension involves the conscious use of communication of information to help people form sound opinions and make good decisions.
- [5] 1982: Agricultural Extension: Assistance to farmers to help them identify and analyse their production problems and become aware of the opportunities for improvement.
- [6] 1988: Extension is a professional communication intervention deployed by an institution to induce change in voluntary behaviours with a presumed public or collective utility.
- [7] 1997: Extension [is] the organized exchange of information and the purposive transfer of skills.
- [8] 1999: The essence of agricultural extension is to facilitate interplay and nurture synergies within a total information system involving agricultural research, agricultural education and a vast complex of information-providing businesses.
- [9] 2004: Extension [is] a series of embedded communicative interventions that are meant, among others, to develop and/or induce innovations which supposedly help to resolve (usually multi-actor) problematic situations.
- [10] The term "university extension" was first used by the Universities of Cambridge and Oxford in 1867 to describe teaching activities that extended the work of the institution beyond the campus. Most of these early activities were not, however,



related to agriculture. It was not until the beginning of the 20th century, when colleges in the United States started conducting demonstrations at agricultural shows and giving lectures to farmer's clubs, that the term "extension service" was applied to the type of work that we now recognize by that name.

In the United States, the Hatch Act of 1887 established a system of agricultural experiment stations in conjunction with each state's land-grant university, and the Smith-Lever Act of 1914 created a system of cooperative extension to be operated by those universities in order to inform people about current developments in agriculture, home economics, and related subjects.

Three acts passed by the US has paved way for the present Agricultural Extension system in India:

1. *The Hatch act established the Agricultural experiment stations;*
2. *The Morrill act has paved way for the creation of Agricultural Universities on the Land grant college pattern;*
3. *The Smith Lever act of 1914 which has paved a way for the establishment of Cooperative extension service, similar to our Departments of Agriculture and other line departments*

HATCH ACT

The Hatch Act of 1887 (ch. 314, 24 Stat. 440, enacted 1887-03-02, 7 U.S.C. § 361a et seq.) gave federal funds, initially of \$15,000 each, to state land-grant colleges in order to create a series of agricultural experiment stations, as well as pass along new information, especially in the areas of soil minerals and plant growth. The bill was named for Congressman William Hatch, who chaired the House Committee of Agriculture at the time the bill was introduced. State agricultural stations created under this act were usually connected with those land-grant state colleges and universities founded under the Morrill Act of 1862, with few exceptions.

Many stations founded under the Hatch Act later became the foundations for state cooperative extension services under the Smith-Lever Act of 1914.



Congress amended the act in 1955 to add a formula that uses rural and farm population factors to allocate the annual appropriation for agricultural experiment stations among the states. Under the 2002 farm bill (P.L. 107-171, Sec. 7212), states will continue to be required to provide at least 100% matching funds (traditionally, most states have provided more). On average, Hatch Act formula funds constitute 10% of total funding for each experiment station. (7 U.S.C. 361a et seq.).

MORRILL ACT

The **Morrill Land-Grant Acts** are United States statutes that allowed for the creation of land-grant colleges, including the **Morrill Act of 1862** (7 U.S.C. § 301 et seq.) and the **Morrill Act of 1890** (the **Agricultural College Act of 1890**, (26 Stat. 417, 7 U.S.C. § 321 et seq.) Land-grant colleges

The purpose of the land-grant colleges was:

Without excluding other scientific and classical studies and including military tactic, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life.[4]

Under the act, each eligible state received a total of 30,000 acres (120 km²) of federal land, either within or contiguous to its boundaries, for each member of congress the state had as of the census of 1860. This land, or the proceeds from its sale, was to be used toward establishing and funding the educational institutions described above. The 1862 Act was extended to the former Confederate states; it was eventually extended to every state and territory, including those created after 1862. If the federal land within a state was insufficient to meet that state's land grant, the state was issued "scrip" which authorized the state to select federal lands in other states to fund its institution.[5] For example, New York carefully selected valuable timber land in Wisconsin to fund Cornell University.[6] The resulting management of this scrip by the university yielded one



third of the total grant revenues generated by all the states, even though New York received only one-tenth of the 1862 land grant.[7] Overall, the 1862 Morrill Act allocated 17,400,000 acres (70,000 km²) of land, which when sold yielded a collective endowment of \$7.55 million.[8] The state of Iowa was the first to accept the terms of the Morrill Act which provided the funding boost needed for the fledgling Ames College (now Iowa State University.)

With a few exceptions (including Cornell University and the Massachusetts Institute of Technology), nearly all of the Land-Grant Colleges are public. (Cornell University, while private, administers several state-supported contract colleges that fulfill its public land-grant mission to the state of New York.)

Smith-Lever Act of 1914

The Smith-Lever Act of 1914 is a United States federal law that established a system of cooperative extension services, connected to the land-grant universities, in order to inform people about current developments in agriculture, home economics, public policy/government, leadership, 4-H, economic development, coastal issues (National Sea Grant College Program), and many other related subjects. It helped farmers learn new agricultural techniques by the introduction of home instruction.

The appropriation for cooperative extension is shared between the states based on the following formula. Once the historic amount that has been allocated for "special needs" programs is set aside[1] and an additional 4% is reserved for USDA administrative costs, the remaining funds are allocated:

- 20% shared by all States in equal proportions;
- 40% shared in the proportion that the rural population of each bears to the total rural population of the several States as determined by the census;
- 40% shared in the proportion that the farm population of each bears to the total farm population of the several States as determined by the census.

Except for the "1994 Land-grant colleges" for native Americans, each state must match its Federal cooperative extension funds.[3]

In addition, an amount no less than 6% of the total Smith-Lever Act appropriation is appropriated for the extension programs of the "1890 Land-grant colleges" (historically black colleges). These funds are also shared between the 1890 colleges by the 20%-40%-40% formula, with Alabama A&M and Tuskegee University treated as though they were in different states.

Four paradigms of agricultural extension

Any particular extension system can be described both in terms of both how communication takes place and why it takes place. It is not the case that paternalistic systems are always persuasive, nor is it the case that participatory projects are necessarily educational. Instead there are four possible combinations, each of which represents a different extension paradigm, as follows:

- **Technology Transfer** (persuasive+paternalistic). This paradigm was prevalent in colonial times, and reappeared in the 1970s and 1980s when the Training and Visit system was established across Asia. Technology transfer involves a top-down approach that delivers specific recommendations to farmers about the practices they should adopt.
- **Advisory work** (persuasive+participatory). This paradigm can be seen today where government organisations or private consulting companies respond to farmers enquiries with technical prescriptions. It also takes the form of projects managed by donor agencies and NGOs that use participatory approaches to promote pre-determined packages of technology.
- **Human Resource Development** (educational+paternalistic). This paradigm dominated the earliest days of extension in Europe and North America, when universities gave training to rural people who were too poor to attend full-time courses. It continues today in the outreach activities of colleges around the world. Top-down teaching methods are employed, but students are expected to make their own decisions about how to use the knowledge they acquire.



- **Facilitation for empowerment** (educational+participatory). This paradigm involves methods such as experiential learning and farmer-to-farmer exchanges. Knowledge is gained through interactive processes and the participants are encouraged to make their own decisions. The best known examples in Asia are projects that use Farmer Field Schools (FFS) or participatory technology development (PTD).

There is some disagreement about whether or not the concept and name of extension really encompasses all four paradigms. Some experts believe that the term should be restricted to persuasive approaches, while others believe it should only be used for educational activities. Paulo Freire has argued that the terms 'extension' and 'participation' are contradictory.[7] There are philosophical reasons behind these disagreements. From a practical point of view, however, communication processes that conform to each of these four paradigms are currently being organized under the name of extension in one part of the world or another. Pragmatically, if not ideologically, all of these activities are agricultural extension.

COMMUNITY DEVELOPMENT (NOW RURAL DEVELOPMENT) AND EXTENSION SERVICE IN INDIA

The community development programme in India aiming at the all-round development of the rural people and the Extension Service as a nation-wide organization to achieve these aims are of relatively recent origin in India. This new programme and administrative set-up of Extension Service is the outcome of several years efforts and reforms made over the years. The evolution of this programme and the new set-up are described in four stages:

Stage I - Pre-Independence Era (1866-1947)

Stage II - Post-Independence Era (1947-1953)

Stage III - Community Development and National Extension Service Era (1953-1960)

Stage IV - Intensive Agricultural Development Era (1960-onwards)

Stage I - Pre-Independence Era (1866-1947)

In India extension work has its beginning with a few outstanding individuals of a philosophic and philanthropic bent of mind. But they worked in most part in isolation with one another and without Government assistance whose interest had been roused through their official contact with the villagers. In others their imagination and sympathy enabled them to visualize a better way of life for the villagers. But the work of most of them was confined to relatively small areas. A study of the more prominent of these endeavours by Government officials, private individuals and institutions during the first half of the present century will give an insight which should be helpful in understanding the background of the community development.

The attempts made by the individual persons and private agencies include:

1. Etawah Project
2. Nilokheri Project
3. Gurgaon Experiment
4. Shriniketan Attempt
5. Sewagram Attempt
6. Marathandam Attempt
7. Servants' of India Society, Pune, in Tamilnadu, Uttar Pradesh and Madhya Pradesh;
8. Sir Daonel Hamilton's Scheme of Rural Reconstruction at Sundarban in Bengal;
9. Rural Reconstruction Work by Christian Missions through Allahabad Agricultural Institute:
The Christian College, Nagpur;
10. Adarsh Seva Sangh, Pohri, Gwalior,
11. Sarvoday Programme in Bombay Province.

A few attempts of extension pre-independence era are explained below:

Gurgaon Experiment

Rural uplift movement on a mass scale was first started by Mr. F.I. Brayne, Dy. Commissioner in the Gurgaon district of Punjab in 1920. The work gathered momentum after 1933 when Mr. Brayne was appointed as Commissioner of Rural Reconstruction in the Punjab. In 1935-36, the Government of India granted Rs. One crore for the work



which acted as a stimulus. After that the work was transferred to the Cooperative Department and Better Living Societies were organized to take up this work in the villages.

Objectives:

1. To increase agricultural production.
2. To stop wastage of money on social and religious functions.
3. To improve healthy standard of the people.
4. To organize welfare programmes.

Activities:

1. Appointment of village guides.
2. Propaganda through films, folk songs, dramas etc.
3. Rural Economics and domestic Economics Schools.

Short Comings:

1. A one man show.
2. Village guides were un-experienced and untrained.
3. No comprehensive planning.
4. No continuity in the work.
5. Limited to few villages.
6. Force not persuasion.

Shriniketan Attempt

In 1908, Shri Rabindranath Tagore, under his Scheme of Rural Development work, started Youth Organizations in the villages in the Kaligram Pargana of his Zamindari (West Bengal). He tried to create the field workers who could identify themselves with the people. In 1921, he established a Rural Reconstruction Institute at Shantiniketan, in collaboration with Mr. L.K. Elmhirst. A group of eight villages was the center of the programme.

Objectives:

1. To create a real interest in people for rural welfare work.
2. To study rural problems and to translate conclusions into action.
3. To help villagers develop their resources.
4. To improve village sanitation.

Methods to Achieve the Objectives:

1. Creating a spirit of self help.
2. Developing village leadership.
3. Organizing village scouts called "Brati Balika".

Activities:

1. Demonstrations on farmers' fields.
2. Dairy to supply pure milk and animals to farmers or breeding.
3. Poultry farm.
4. Training and organizing the weavers.
5. Training in tanning, pottery, embroidery, tailoring etc.
6. Film shows, meetings, village meals.

Short Comings:

1. Too much emphasis on 'Center'.
2. Confined to limited villages.
3. Tagore's interest in 'idea' catching on.

Sewagram Attempt

It was started under the guidance of Mahatma Gandhi as All India Spinners Association in 1920 and later as All India Village Industries Association at Wardha in 1933. Gandhi believed that the 'Salvation of India lies in Cottages'.



The Key Words of his Economy were:

1. Decentralize production and equal distribution of wealth and
2. Self sufficiency of Indian Villages.

Objectives:

1. To provide service to the under privileged.
2. To achieve self dependency.
3. To provide basic education to people.

Activities:

His 18 points programme for emancipation of villages included:

1. Promotion of village industries.
2. Basic and adult education.
3. Rural sanitation.
4. Upliftment of backward communities.
5. Upliftment of women.
6. Education in public health and hygiene.
7. Propagation of national language.
8. Love for the mother tongue.
9. Economic equality.
10. Organization of Kisans, Labours, Students etc.

Marathandam Attempt

This project was started by Mr. Spencer Hatch, an American Agricultural Expert in Travancore State under the auspices of Y.M.C.A. in 1921.

Objectives:

1. To bring about completed upward development towards a more abundant life for rural people spiritually, mentally, physically, socially and economically.

Activities:

1. Self help with intimate expert counsel working principles of the centre.
2. Agriculture.
3. Cottage Industries.
4. Community projects.
5. Bee Keeping.
7. Poultry Keeping etc.

Strong Points:

1. Special training of staff, their enthusiasm and sincerity was developed.
2. A comprehensive plan.
3. Started with the existing conditions.
4. Low cost.

Short Comings:

1. Lack of adequate funds.
2. Lack of Government banking.
3. Lack of continuous contacts with the villagers.
4. Religious standing of the institution.

Stage II - Post-Independence Era (1947-1953)

Grow-More-Food Campaign: The urgent need for stepping up food production was realized even in the pre-Independence era and a Grow-More-Food Campaign was started. Under the campaign, targets for increased agricultural production were laid down for the first time on an all-India basis.

But the campaign failed to achieve its targets. Soon after Independence (1947), the Central Government re-defined the objectives of the Grow-More-Food Campaign as the attainment of self-sufficiency in food grains by 1952, and simultaneously increased the targets of production of other crops to meet the shortfall as a result of the partition of the



country. At the same time, arrangements were made for integration and co-ordination of the entire campaign for increasing agricultural production. Some state governments associated the public with working of the campaign by setting up non-official committees at the village, taluka, district and state levels. The plans were revised from time to time to make the campaign more effective.

Grow-More-Food Enquiry Committee Report: Though efforts were made to revitalize the Grow-More-Food Campaign, it was observed that the system was not functioning properly and the cultivator's response to the programme was very poor. As a result, the Government of India in 1952 appointed a committee known as the GMF Enquiry Committee to examine the working of the Grow-More-Food Campaign.

The findings of this Committee revealed that the problem of food production was much wider than the mere elimination of food imports and that agricultural improvement was a very important part of a much wider problem of raising the level of rural life in the country. The Committee came to the conclusion that it was only by bringing about an appreciable improvement in the standards of rural life to make it fuller and richer that the rural masses could be awakened to take interest in not only increasing agricultural production but also improving their own conditions and creating a will to live better. The committee also pointed out that

- (i) all aspects of village life were interrelated,
- (ii) improvement could be brought about by a number of detached programmes operating independently,
- (iii) there was lack of unity of efforts,
- (iv) the available finances was not adequate, and
- (v) the rural community as a whole did not participate effectively in the campaign. In short, "the movement did not arouse nation-wide enthusiasm and did not become a mass movement for raising the level of village life".

In its recommendations, the Committee proposed the formation of development block, each consisting of 100 to 120 villages, and the appointment of revenue officers as

development officers or extension officers, assisted by technical officers for agriculture, animal husbandry, co-ordination and engineering. For actual work in villages, the Committee suggested the appointment of one village level worker for every five or ten villages. "He will be the joint agent for all development activities and will convey to the farmer, the lessons of research, and to experts the problems of the farmers, and arrange supplies and services needed by the farmers, including preliminary assistance in the animal and plant disease." The Committee also described broadly the functions of the extension service, the manner in which the extension organization would operate, the arrangements required in training of the required staff, the way in which non-official leadership should be associated with the work of village development at the village, taluka, district and state levels. The need for setting up an independent organization of the suggestions made, the manner in which the assistance should be rendered to the state governments as well as to villagers for development work, the role of the central and state governments in this effort was also emphasized by the committee.

Based on these recommendations, the Planning Commission, which was set up earlier by the government of India to prepare a plan for development consistent with the available resources, gave the highest priority to the development of agriculture and irrigation in the First Five-Year Plan. The Commission fixed substantially high targets of internal production and decided, as recommended by the Enquiry Committee, that the drive for food production should form part of plans for overall agricultural development, and that agricultural improvement in its turn should form an integral part of the much wider efforts for raising the level of rural life. The Commission prescribed "Community Development" as the method for initiating the process of transformation of the social and economic life of villages and "Rural Extension" as its agency.

The Etawah Pilot Project (1948-52): The idea of intensive all-round development work in a compact area was put into practice as a Pilot Project in Rural Planning and Development in the Etawah District in Uttar Pradesh in 1948, which can be regarded as a forerunner of the Community Development Project in India. Albert Meryger, an

American Engineer, played the key role in the initiation and implementation of the project. The programme was based on the principle of self-help, democracy, integrated approach, felt needs of the people, rigorous planning and realistic targets, institutional approach, co-operation between governmental and non-governmental organizations, close co-ordination between the extension service and the supply agencies and the collaboration by technical and social scientists. After an initial period of trial and error, a new administrative pattern was evolved. It percolated to the village level; the activities of different nation-building departments were channeled through one common agency and a multipurpose concept of village level worker was introduced. Each village level worker looked after 4-5 villages. The project was supervised by a district planning officer assisted by four specialist officers and other supporting staff.

Etawah Project

The idea of this pilot project was conceived in 1945 but was put into action in September, 1948 at Mahewa Village about 11 miles away from Etawah in United Province. Lt. Col. Albert Mayer of U.S.A. was the Originator of this project. Initially 64 villages were selected which then increased to 97. The Government of UP and Point-4 programme of U.S.A. provided help for this project.

Objectives:

1. To see the extent of improvement possible in an average district.
2. To see how quickly results could be achieved.
3. To ascertain the permanency and applicability of results to other areas.
4. To find out methods of gaining and growing confidence of the villagers.
5. To build up a sense of community living.
6. To build up a spirit of self help in the villagers.

Activities:

1. Broadening the mental horizons of the villagers by educative and persuasive approach.
2. Training of village level workers.

3. Co-ordination between Departments and Agencies.
4. Conducting demonstrations.
5. Focus on crop yields, soil conservations, animal husbandry sanitation and social education.

Strong Points:

1. Villager's participation.
2. Through planning and integrated approach.

Nilokheri Project

Shri S.K. Dey later Union Minister for community Development and Cooperatives up to 1965 was the central figure of this project. It was originally started to rehabilitate 7000 displaced persons from Pakistan. Later it was integrated with 100 surrounding villages making a rural cum urban township. The scheme was called as "Mazdoor Manzil".

Objectives:

1. Rehabilitation of the displaced persons from Pakistan.
2. Self sufficiency for the township in all the essential requirements of life.

Activities:

1. School
2. Agricultural Farm
3. Poly-Technique training centre
4. Dairy
5. Poultry Farm
6. Piggery Farm
7. Horticultural Garden
8. Printing Press
9. Garment Factory
10. Engineering workshop
11. Soap Factory



The Community Development Project (1952): As a result of the Grow-More-Food Enquiry Committee Report and the successful experience of the Etawah Project, 15 Pilot Projects were started in 1952 in selected states with the financial assistance received from the Ford Foundation. Besides helping to increase agriculture production and bettering the overall economic condition of the farmers, these projects were meant to serve as a training ground for the extension personnel. It was soon realized that for the creation of an urge among the rural population to live a better life and to achieve permanent plenty and economic freedom in the villages, a much bolder and dynamic effort was called for. It was recognized that the success of this new effort depended upon whole hearted co-operation of the beneficiaries, government officials and non-officials at every stage, the education of rural masses in the technique of rural development and the timely provision of adequate supplies of the needed inputs and other requirements.

For undertaking this new programme, the Government of India entered into an operational agreement with the Government of the U.S.A under the Technical Co-operation Programme Agreement. Under this Agreement, 55 Community Development Projects were started in different parts of the country on 2 October, 1952 for three years.

The Projects covered nearly 25,260 villages and a population of 6.4 millions. Each project, in turn, consisted of about 300 villages covering 400-500 square miles and having a population of about two lakhs. The project area was divided into three development blocks, each comprising 100 villages and a population of 60,000 to 70,000. The development blocks, in turn, were divided into groups of 5-10 villages, each group being in the charge of a multipurpose village-level worker. The main aims of these projects were: to increase agricultural production by all possible means, to tackle the problems of unemployment, to improve village communications, to foster primary education, public health and recreation, to improve housing, to promote indigenous handicrafts and small-scale industries and to improve the villager's lot through their

own primary effort. In short, the programme aimed at achieving all-round socio-economic transformation of the rural people.

Stage III - Community Development and National Extension Service Era (1953-1960)

In India, organized extension came into being in the year 1952 with the launching of Community Development Programme followed by National Extension Service in 1953 and its education and research studies began in 1955 with the initiation of Post Graduation Programme in Agricultural Extension Education in Agricultural College, Sabour, Bihar.

2.2 Community Development Programme (CDP):

Foundation for Extension Programmes in Agriculture in India

The Community Development Programme is a multipurpose extension programme which includes farm and non farm sectors of livelihood. Launched on 2nd October 1952. It achieved tremendous results and benefits in the field of agriculture, rural development, social and economic development.

The Community Development Programme (CDP) made a significant impact in the rural people for their own development in all aspects of their day to day life. It was so successful and purposeful that United Nations defined the Community Development Programme as “the process by which the efforts of the people themselves are united with those of governmental authorities to improve the economic, social and cultural conditions of communities, to integrate these communities into the life of the nation and to enable them to contribute fully to national programmes”.

The CDP which emphasized development in all spheres of people’s life slowly directed towards specific objectives attainment as over the years it was felt necessary.



National Extension Service

Rural development activities under Government sponsorship was started with the introduction of CDP. Within a few months of the launching of these pilot projects, it was prominently experienced that the people were ready even keen, for the programme. The people in all the project areas responded enthusiastically and indeed much beyond the expectations of the Government and the sponsors of the programme. This fact emphasized the need for a rapid extension of the programme to other parts of the country. But the country's resources were not sufficient to sustain a comprehensive plan of the same magnitude as contemplated in the first 355 projects. The Government therefore decided to launch alongside the community development programme another programme which was somewhat less intensive in character, called the National Extension Service programme. The National Extension Service programme was formulated in April 1953 and it was inaugurated one year after the 55 community projects that is, on October 2, 1953.

It was a major development in the sphere of rural reconstruction in India. Since the basic idea underlying both the community development and National Extension Service programme was the same, the two were integrated under one agency at the Centre as well as in the states. Both the programmes were complementary and interwoven and ran concurrently. The idea behind the National Extension Service Programme was to cover the entire country within a period of about 10 years, that is to say, by 1960-61.

The inter-relation between the community development programme and National Extension Service can be explained as below:

It is necessary to explain the inter-relation between the community development programme and the National Extension service. The movements have identical aims. The National Extension Service is a permanent organization and will cover the whole country. It provides the basic organization, official, non-official and a minimum financial provision for development. Further funds will be found from the central

Government and the State's own allotments under different heads. National Extension Service blocks in which successful results have been achieved with the maximum popular co-operation are selected for intensive development for a period of three years. This intensive development will depend on the available financial resources and local support and local support and enthusiasm.

The National Extension Service and the community development programmes have uniform unit of operation which is called a development block. It represents on an average 100 villages, with a population of 60,000 to 70,000 persons spread over an area of 150 to 170 square miles. But the N.E.S. blocks are not developed with the same intensity as areas under the community development blocks. Out of the areas developed as National Extension Service Blocks, selection is made periodically for intensive development work under the community development programme and the block which are selected are C.D. blocks. Only those blocks are selected which in their working showed good results and where people's participation had been in abundance.

Organizational Set-up for Community Development Extension Service: The organisational set-up for Community Development Programme runs from the national level through state, district and block levels to the village level and there are three main constituents of this new set-up.

- (a) The direct-line staff such as State Development Commissioner, B.D.O and Village Level Worker.
- (b) The auxiliary or specialist staff, such as different heads of technical departments at the state and district levels and extension officers at the block level.
- (c) Panchayati Raj System - The Zila Parishads, Block Samitis and Village Panchayats.

(A) National Level: At the National level programme, the policies are formulated by the National Development Council presided over by the Prime Minister of India. Membership of the Council consists of the Central ministers of the concerned ministers, chief ministers of all states, and members of the Planning Commission. The Planning Commission provides guidance for Plan formulation and gives it approval to annual



and Five-Year Plans of the states as well as of the Centre. The Ministry of Agriculture and Irrigation is responsible for giving national guidance, policy formulation and technical assistance in regard to Agriculture Extension and Community Development (now Rural Development Programmes). In the Agriculture department, the Agricultural Commissioner, Government of India, assisted by a number of assistant commissioners and directors, with the supporting staff, is in charge of all agricultural development programmes at the national level. Within this Department, special mention may be made of the Directorate of Extension Training responsible for the training of Extension officers, VLWs, instructors of Village-Level Workers Training Centres and others and the Directorate of Farm Information which is concerned with the dissemination of new agricultural technology and innovations through various media.

(B) State Level: At state level also, there is usually a State Development Committee presided over by the Chief Minister of the state with the other concerned ministers as its members. This Committee is responsible for the state's plan and programmes and for fixing the targets for regions and districts. Besides this committee, there are usually a number of other advisory or technical committees.

As regards the actual administrative functioning, the State Development Commissioner is the top-level executive responsible for directing, co-ordinating and providing overall guidance for development programmes and maintaining a two-way channel of communication between the state governments and the Central government. He co-ordinates the activities of different development departments, such as agriculture, animal husbandry, co-operation, panchayati raj, health, education, irrigation, power and electricity. The heads of these technical departments are responsible for planning and implementing the technical programmes and for providing the necessary technical guidance, manpower and support.

(C) District Level: At the district level also, there is usually a District Development or District Planning Committee presided over by the District Collector or Deputy Commissioner. The other members of this committee are the heads of the departments

in the district, chairman and vice-chairman of the district boards, representatives of voluntary organizations, local bodies and members of parliament and state legislatures.

In the states, where the Panchayati Raj is operating, the Zila Parishads are responsible for planning, co-ordinating and consolidating the development programme in the district.

The District collector is the key official who co-ordinates the activities of all development departments at the district level. The district-level technical heads of agriculture, animal husbandry, co-operation, panchayats, public health, irrigation, education and rural industries are responsible for planning and implementing the development programmes relating to their departments. Administratively, they are responsible to the district collector on one hand and to their state heads of development departments on the other.

(D) Block Level: A district is subdivided into a number of community development programmes. The Block development officer is the head of the block team, and co-ordinates all the activities of the development departments at the block level. He is assisted by eight extension officers from different fields, namely agriculture, animal husbandry, health, co-operation, panchayats, engineering, social education and rural industry.

At the non-official level in the states, where the Panchayati Raj has been implemented, the Panchayati samiti (also called the Block), this Samiti) has the statutory powers for formulating and executing development programmes. The Samiti is assisted by the B.D.O and the extension officers. Wherever the Panchayati Raj is not working, there are block development advisory committees.

(E) Village Level: At the village level, the multi-purpose village-level worker is the main extension staff. He is the last extension functionary in the administrative hierarchy and is the main contact person. He is responsible for all developmental work at the village level, and forms a connecting link between the various technical departments and the



rural people. Usually, in a normal community development block, there are 10 village-level workers. Their number has been double in the Intensive Agricultural Development Programme (IADP) blocks.

On the non-official side, usually there is a Panchayat in every village or for a cluster of villages, and is responsible for planning and implementing the community development programmes and ensuring people's participation in them.

Stage IV - Intensive Agricultural Development Era (1960-onwards)

Keeping this in view, agriculture which was the main stay of Indian economy was given more thrust for its development and accordingly, various development programmes for agricultural production and productivity were launched since 1960s. The sole objective of these programmes were economic upliftment of the people of the country and taking them out from poverty line. All the programmes focused towards agricultural development by which large majority of rural people, who are dependant solely on agriculture were aimed for their socio economic development. The programmes initiated over the years till date are:

- Intensive Agricultural District Programme (IADP)
- Intensive Agricultural Area Programme (IAAP)
- High Yield Variety Programme (HYVP)
- Small Farmers Development Agency (SFDA) and Marginal Farmers and Agricultural Labourers (MFAL)
- Drought Prone Area Programme (DPAP)
- Command Area Development Programme (CADP)
- Integrated Rural Development Programme (IRDP)
- Training and Visit (T&V) System of Agricultural Extension
- The Intensive Cattle Development Project (ICDP)
- Training of Rural Youth for Self Employment (TRYSEM)
- Development of Women and Children in Rural Areas (DWCRA)

- National Agricultural Extension Project (NAEP)
- Technology Mission on Oilseeds (TMO)
- Jawahar Rozgar Yojana
- MGNREGA
- National Horticultural Mission
- RKVY(Rashtriya Krishi Vikas Yojana)
- National Agricultural Innovation Project (NAIP)

All these programmes, though not attempted towards development of agricultural extension but definitely production and productivity of their farming operations and other rural enterprise which ultimately helped in obtaining more income and livelihood security. But all the programmes followed extension approach to reach to its clients and target groups to provide them with education, information, knowledge, skills, understanding and other related matters so as to empower them in accomplishing their goal of economic upliftment.

2.3 Extension Strategy for Agricultural Development

Agriculture extension plays a pivotal role in rural and agriculture development by combining farm and non-farm sources of livelihood.

Seventy five percent 75% of world poor (The World Bank in its 2000-2001 Report, estimates that about people who have to survive with less than one dollar a day) live in families of farmers and farm labourers. This implies that any programme aiming at poverty alleviation has to give considerable attention to agricultural development. And agricultural extension will be an important and significant element in such an agricultural and rural development programme. The definite objectives of Agricultural Extension in the present era will be :

- Helping farmers to increase their standards of living by increasing Farm income & yields of crops and animals by combining farm and non-farm sources of income



- For Sustainable Rural livelihood and developing the farms, farmers need not only financial capital but also need social, physical, natural, and a healthy Human capital (Sustainable rural livelihood framework of DFID) and extension system has to educate farmers to access these.

Hence, in global competitiveness of high quality, low cost agricultural products in WTO regime, Indian farmers have to prepare themselves to meet the challenges. To make it possible, agricultural scientists, extension personnel and agricultural administrators, backed by Government must work in tandem and the Agricultural research in ICAR Institutes and State Agricultural Universities also must change its focus and direction in meeting the challenges of the WTO regime to help, provide farmers the competitive edge over other farmers of the globe.

Agricultural Extension & Need of Reorienting Its Strategy

Agricultural Extension is central in formulating and disseminating knowledge and in teaching farmers to be competent decision makers. Therefore, extension plays an important and significant role in most agricultural development projects.

Agriculture Extension has both public and private players and all stake holders put together must work on the PPPP (public, private, panchayat, partnership mode)

Challenges for Extension in the New Millennium

As we move into the new millennium, it will be increasingly necessary and definitely feasible to take a holistic approach to organize positive change in rural areas, helping farmer towards sustainable increasing productivity - particularly in the small - mixed farming systems in rainfed areas, in upland areas and in other places, which have been neglected. It also demands measuring success in terms of the **consumption** of rural people as well as their **production**. And that, in turn, will require agricultural extension systems which help farm men and women organize themselves in ways which empower them - to lead agricultural extension and to exert enough power and influence

over agricultural research system so that they generate useful practical information which fits the needs and interests of those farming people.

Generally, extension has to prepare itself to face six challenges in the new millennium. They are:

1. Control, accountability and sustainability in agriculture
2. Developing a comprehensive Agricultural Extension Policy
3. Addressing the Educational and Technological Needs of Target Clientele
4. Farm Women and Women Extensionists
5. Improving Communication Support in Extension through ICT
6. Strengthening Extension Management

2.4 Agricultural Development and Extension Programmes

So far, extension objectives have been to increase productivity at any cost and in the process have ignored the key issues like clients needs and problems, appropriate technology development and dissemination ensuring input supply and information services, training of farmers and extension personnel for knowledge and skill up gradation to cope up with the technological advancement, marketing and management.

Emerging Priorities in Extension in the New Millennium

In the present context of liberalized economy and globalization of agriculture time has come now for agricultural extension to cope up with the changing scenario with its new strategy and approach to reach farmers not only with basket of technological options, but also with information of new market opportunities and gain, more profit and sustainability of income. For the purpose, extension is to be redefined, redesigned and equipped with several solutions to the problems of different groups of farmers, with varied dimensions of land holdings, farmers situations and income. The priorities in these are:

1. Technological options and development in agricultural production process- the basket approach.



2. Location specific and need-based extension strategies and approaches.
3. Participatory extension for technology development and dissemination.
4. Linkages and coordination among concerned development departments and organizations.(PPPP mode)
5. Use of new communication channels and media support in extension.(ICT)
6. Human resources development and management in agricultural extension.
7. The cost sharing of extension services and privatization of extension.
8. Institutional innovations to build effective extension strategy.

Keeping these cardinal principles in view, following programmes were launched by Government of India to help farmers for their socio-economic development through improving agricultural production and productivity. Some of them are :

Intensive Agricultural District Programme (IADP)

With a focus on increasing productivity and production, IADP was launched in July 1960 in 7 selected districts of various states in its first phase and later extended to another 9 more districts in second phase during 1963-64.

This programme was aimed at integrated and intensive approach to solve the problems of agricultural production through adoption of package of improved practices. The achievements accomplished through this programme were tremendous and it really made a dent into the rural poverty for its eradication through agriculture. This programme was popularly known as Package Programme.

Intensive Agricultural Area Programme (IAAP)

To meet the demand of food for the vast population of the country, it was decided that atleast 20 to 25 per cent of cultivated area of the country should be earmarked and selected for intensive agricultural development. Accordingly in 1964, IAAP came into operation in 114 districts of the country. The IAAP's main objective was to bring about

the progressive increase in production of main crops in selected areas by intensive and coordinated use of various aids to production.

The IAAP partially achieved its prime objectives by increasing food production in the selected area and on the selected crops.

High Yielding Varieties Programme (HYVP)

The IADP and IAAP were concerned with the package approach and intensive agriculture and these programmes increased the food production to some extent. But in the later period, when yield production was stabilized, it could not meet the demand of the need of further food production and this experience directed the need of HYVP.

The HYVP came into being in Kharif 1966-67 with a sole objective to increase the total food production by utilizing high yielding seeds of selected crops. The selected crops were paddy, wheat, bajra, jowar and maize. The salient features of HYVP were : (1) Supply of inputs like seeds, fertilizer and plant protection chemicals, (2) Supply of credit, (3) Cooperative marketing, (4) National Demonstration and (5) Training.

These programmes achieved some significant result, particularly in the areas of increasing production and the awareness to the cultivators about available means of increasing production like high yielding seeds, fertilizers and plant protection chemicals. However, there were also failures in this programme like unfavourable seasonal conditions, susceptibility of some crops towards pests and diseases and incomplete adoption of package of practices by many cultivators.

During this period and after, it was felt that small farmers constituting around 60 per cent of the total cultivators require special support and development systems for their agro-economic development.



Drought Prone Area Programme (DPAP)

In India, approximately, 19 per cent of the total land is frequently affected by drought. To overcome this problem. Government of India launched the DPAP during 5th Five Year Plan in June 1973.

The basic objective of DPAP was to reduce the severity of the impact of the drought and stabilizing the income of the people, particularly, the weaker sections of the society together with restoration of ecological balance. Special emphasis of DPAP were :

1. Development and management of irrigation resources
2. Soil moisture conservation and afforestation
3. Restructuring of cropping pattern and pasture development
4. Changes in agronomic practices
5. Livestock development of small farmers, marginal farmers and agricultural labourers through special action plan.

The DPAP programme was in operation in 74 districts of 13 states of the country. This programme exceeded target in the areas of soil and moisture conservation, forestry and pasture development, distribution of milch animals, organization of sheep cooperative societies and in most of these areas, the programme exceeded the target levels. However, the DPAP had also some limitations such as beneficiary and area development programme oriented approaches could not solve the problems of poverty and unemployment to a greater extent.

Command Area Development Authority (CADA)

The Irrigation Commission observed that the utilization of irrigation potentialities was slow and not efficient which resulted in increase of drought prone areas. The National Commission on Agriculture too subscribed the same view that every old irrigation project should be upgraded so that existing irrigated areas can be provided with required irrigation and plan should be made to cover more areas under its operation. Based on these recommendations, Government of India established Area

Development Authority in July 1973 and later it was converted into CADA from June 1974. The basic concept of this CADA were coordination among the different departments like irrigation, soil conservation, agricultural extension, cooperation and credit agencies.

The basic aim of CADA was to bridge the gap between the irrigation potentialities and its actual coverage in irrigation of the land. The CADA's more important function was to utilize the water available through its various irrigation projects and to distribute the same under command area through modernized distribution system. Though this programme helped in achieving some objectives of availability of irrigation water through dam / canals, it could not meet the need / demands of vast area of land in the country and in the process wherever these facilities were available, the farmers of these areas got maximum benefits by utilizing irrigation water for their cultivation but other areas were deprived of it and gap widened between the two areas and its people.

The CADA helped in achieving increase of production by providing irrigation water and also helped the big farmers to invest more and also get the high returns. And it proved that irrigation and its proper management if provided the productivity of the crops can be increased in no time. This programme had some problems like proliferation of projects, escalation of costs, difficulties of land acquisition, non-availability of potential and actual cultivable command area.

Training and Visit (T & V) System of Agricultural Extension

The Training and Visit (T&V) system, the brain child of Dr Daniel Benor (World Bank Consultant) was introduced in India in 1974 for all round development of agricultural extension system in the country to introduce observation, training and technology transfer to the farmers and extension workers so as to enable them achieving greater productivity and production in the agricultural sector.

This new agricultural extension strategy was developed with a view to achieving acceleration of economic growth and reduce absolute poverty from poorer nations by



the end of 20th century on the suggestions of Robert S. Mc. Namara, the then President of World Bank in its annual conference held at Nairobi in 1970. This was world bank assisted project and introduced in number of countries beginning first in Israel.

In India this system was been introduced first in 1974 in two states viz., Rajasthan and West Bengal and then spread to another 16 states of the country aimed at building a professional extension service that is capable of assisting farmers in raising production and increasing incomes and of providing appropriate support for agricultural development. The important features of this system include professionalism, single line of command, concentration of effort, time bound work, field and farmer orientation, regular and continuous training and close linkages with research.

T & V system resulted in creation of a dynamic link between farmers, professional extension workers, and researchers. The impact of T&V system was readily apparent over a wide range of agro-ecological conditions in farmers' fields, whether irrigated or rainfed.

By adopting and implementing T&V system in its extension net work, India gained a lot in increasing its food production with scientific means coupled with effective technology transfer system.

National Agricultural Extension Project (NAEP)

The basic objective of NAEP was to bridge the gap between the well developed research system with that of extension system so that the transfer of technology takes place at a much faster rate resulting in higher production and prosperity in the rural sector in general and agricultural sector in particular.

In spite of these special extension efforts, there remained large gaps in achieving in certain sectors which needed more concerted attention.

2.5 Various Client Focussed Programmes and Projects in Agricultural Development

Small Farmers' Development Agency (SFDA) and Marginal Farmers and Agricultural Labourers (MFAL)

SFDA started with the objectives to help and identify the special problems of small farmers as producers and also identifying marginal farmers and agricultural labourers, so that necessary measures can be taken to boost their occupation and helping them to get appropriate income as wages for support to their cultivation.

SFDA was first introduced in 168 district level agencies covering 1818 blocks. Later MFAL was combined to make this as a composite SF/MFAL blocks.

The major achievements this programme brought were that all small farmers, marginal farmers and agricultural labourers came in one umbrella to help them, identify their problems and solve them with the support from Government. It also helped agricultural labourers to get their minimum wages from the land owners where they used to put their labour. The marginal and small farmers both got several subsidies from various agencies, identified by SFDA and MFAL for their cultivation practices, and as a result to some extent they could improve their economic conditions.

However, these programmes could not achieve fully the target as it did not cover whole area throughout the country and also it covered only one or two aspects of rural life and sections of rural people in selected blocks/districts. Local level planning and monitoring were absent in these programmes.

Integrated Rural Development Programme

The basic concept of IRDP was both on planning and implementation of rural development policies in an integrated system. It includes (1) coordination among different organizations involved, (2) improvement of vertical integration relationship among government agencies at village, block, district, state and central level, (3) giving



importance to local level administration in deciding the programmes, planning of projects etc. (4) optimum utilization of local resources and change in individual values and perception of rural people towards socio-economic changes in the village and more importantly, the people's participation in formulation, implementation and evaluation of the development programme.

IRDP included all the sectors in its operation to help support people in the rural area to attend their economic upliftment. The sectors included agriculture, animal husbandry, fisheries, horticulture, forestry, industry, marketing and service sectors. At the beginning, this programme brought tremendous impact and improved economic conditions. But at the later part of the programme, improper selection of beneficiaries had resulted in deprivation of benefits to genuine beneficiaries.

Because of the very nature of this problem and its huge machinery for implementation of the same in almost all blocks of the country, proper follow up was almost absent. Particularly after sanction of loans or distribution of some inputs to the beneficiaries for their economic development, no one kept track with the beneficiaries. The bench mark survey for selection of beneficiaries were not done as per plan and also there were lack of coordination among the development departments and people at the block level and in the process, participation from people were very much less in the programme. The problem also came up because of rigid approach of bureaucracy from the block and district level. However, IRDP brought the awareness among the rural people for their economic development and expected roles government should play for the purpose.

The Intensive Cattle Development Project (ICDP)

The initiation of Key Village Scheme in August 1952 was the first systematic attempt to improve the quality and productivity of cattle and buffaloes in the country. The ICDP was initiated in 1964-65. The objectives of the project were the same as the Key Village Scheme, but had much wider scope. It envisaged provision of a package of

improved practices to the cattle owners to effect a breakthrough in milk production (National Commission of Agriculture, 1976). The package included :

1. Cattle breeding
2. Castration of scrub bulls
3. Veterinary aid and disease control
4. Registration of milk recording
5. Introduction of high yielding milch cattle
6. Subsidies and incentives for milk production
7. Feed and fodder development including demonstration, distribution of fodder seeds, silage making and popularization of chaff cutters and
8. Dairy extension.

The programme was launched in the milk shed area of major dairy plants to ensure the increased and steady flow of milk to these plants. There is no doubt that ICDP did help in increasing milk production in milch animals in the country to a great extent.

Training of Rural Youth for Self-Employment (TRYSEM)

The Centrally sponsored scheme TRYSEM was launched by Government of India under Department of Rural Development on August 15, 1979. TRYSEM is a facilitating component of the IRDP. The major and significant objective of TRYSEM was to provide technical skills to the rural youth from the families below poverty line to enable them to take up self employment in the broad fields of agriculture and allied activities, industries, services and business enterprises. This system helped a lot of unemployed rural youth in the country side to earn substantial amount of income for their own maintenance and also were engaged in permanent livelihood earning. Though this programme could not overcome the huge unemployment in the country, it showed the path for their taking up own initiatives for self employment and earning for their own development.



Development of Women and Children in Rural Areas (DWCRA)

A unique programme, called DWCRA was started as a sub-scheme of IRDP in 1982-83 with the sole objective of improving the conditions of women and children in the rural areas. The rationale behind the programme was that the women's income is known to have positive correlation with the nutritional and educational status of the family and in building of positive attitude towards status of women. If they are developed and empowered, all care could be possible for the looking after of their children in a more desired manner. Through this programme, most of the rural women started earning some income and that enabled them to take care of them and their children's well being to a great extent.

The objective of DWCRA was to provide income generating activities to women and also to provide an organizational support in terms of a receiving system for the assisted women so that they could become effective recipients of goods and services available in that area. The unique feature of DWCRA was to help the women in a group instead of helping individually. Therefore, the group approach helped every individual of the group to think and perform better as impact of the group matters. This was very effective and many of the rural women got benefit out of this programme.

Though several programmes listed above were aimed at improving socio-economic conditions of rural people through agriculture and its allied areas, many of the limitations cropped up during the implementation of these programmes. The limitations were effectively related to organizational, structural and functional constraints which were very much identified during the long continuance of T&V system of agricultural extension and other related development programmes.

Technology Mission on Oilseeds (TMO)

Technology Mission was the special assignment of a task to a group of people to fulfill a technological programme within a given period of time. It was generally taken up at the national level to remove a persistent problem pervading the life of the people,

through time bound, result-oriented, multi-disciplinary, highly intensive programmes. The organizations and agencies involved in the programme were given specific responsibilities and the progress of work was closely monitored at the highest level. In implementing the programme, not only positive aspects were emphasized, but the retarding factors were also identified and steps were taken to remove them as quickly as possible. The programmes operated with liberal financial assistance and their implementation did not suffer at all due to non availability of funds. India took this task as a challenge and achieved to a great deal in oilseeds production in the country.

A major deficient area was oilseeds production for which the TECHNOLOGY MISSION ON OILSEEDS was initiated in May 1986. The main purpose was to make the country self-sufficient in edible and non-edible oils of plant origin and to minimize their imports. This was to be achieved through an integrated approach involving different developmental, scientific, banking, marketing and processing agencies. The Technology Mission on Oilseeds had the following strategy:

- i. improvements in crop technology
- ii. support to the farmers to apply improved production technology
- iii. improved post harvest technology; and
- iv. support to industry for applying post-harvest technology.

A comprehensive plan was prepared to increase the irrigated area under oilseeds, by replacing less remunerative crops by oilseeds and by adopting improved technologies, and better dry farming methods and practices. The extension methods include block demonstrations, training of farmers, subject matter specialists and extension agents; assured input supply and technology packages; field days, farmers' conventions; and communication through radio and television. Realizing the importance of a strong support system to farmers through transfer of technology, the Government of India initiated National Oilseeds Development Project (NODP) for sustained vegetable oil production.



Jawahar Rozgar Yojana

Jawahar Rozgar Yojana to provide employment to the rural poor was initiated in 1989. National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) were merged into this programme. The expenditure under the programme was shared by the Centre and the States on 80:20 basis. The central assistance under this programme was released to the districts direct. Not less than 80 per cent of the allocations under the programme received by the districts were given to the village panchayats. It was estimated that the programme will provide fuller employment opportunities to atleast one member of each family living below the poverty line who sought unskilled employment (Department of Rural Development, 1989).

MGNREGA

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is an Indian job guarantee scheme, enacted by legislation on August 25, 2005. The scheme provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage of ₹120 (US\$2.27) per day in 2009 prices.[1] The Central government outlay for scheme is ₹40,000 crore (US\$7.56 billion) in FY 2010-11.[2]

This act was introduced with an aim of improving the purchasing power of the rural people, primarily semi or un-skilled work to people living in rural India, whether or not they are below the poverty line. Around one-third of the stipulated work force is women. The law was initially called the National Rural Employment Guarantee Act (NREGA) but was renamed on 2 October 2009.

In 2011, the programme was widely criticised as no more effective than other poverty reduction programs in India. Despite its best intentions, MGNREGA is beset with controversy about corrupt officials, deficit financing as the source of funds, poor quality of infrastructure built under this program, and unintended destructive effect on poverty.

National Horticultural Mission

National Horticulture Mission is an Indian horticulture Scheme promoted by Government of India.[1]It was launched under the 10th five-year plan in 2005-06 to develop horticulture to the maximum potential available in the State and to augment production of all horticultural products (Fruits, Vegetables, Flowers, Plantation crops, Spices, Medicinal Aromatic plants) in the state. **The objects are:**

1. To provide holistic growth of the horticulture sector through an area based regionally differentiated strategies
2. To enhance horticulture production, improve nutritional security and income support to farm households;
3. To establish convergence and synergy among multiple on-going and planned programmes for horticulture development;
4. To promote, develop and disseminate technologies, through a seamless blend of traditional wisdom and modern scientific knowledge;
5. To create opportunities for employment generation for skilled and unskilled persons, especially unemployed youth;

RKVY (Rashtriya Krishi Vikas Yojana)

Rashtriya Krishi Vikas Yojana or National Agriculture Development programme is a State Plan Scheme of Additional Central Assistance launched in August 2007 as a part of the 11th Five Year Plan by the Government of India. Launched under the aegis of the National Development Council, it seeks to achieve 4% annual growth in agriculture through development of Agriculture and its allied sectors (as defined by the Planning Commission (India)) during the period under the 11th Five Year Plan (2007-11).

The scheme is essentially a State Plan Scheme that seeks to provide the States and Territories of India with the autonomy to draw up plans for increased public investment in Agriculture by incorporating information on local requirements, geographical / climatic conditions, available natural resources/ technology and cropping patterns in their districts so as to significantly increase the productivity of Agriculture and its allied sectors and eventually maximize the returns of farmers in agriculture and its allied sectors.



National Agricultural Innovation Project (NAIP)

The Government of India has launched the National Agricultural Innovation project with a credit support of the World Bank. The ICAR is operating the Project. The overall objective of the project is to facilitate accelerated and sustainable transformation of Indian agriculture for rural poverty alleviation and income generation by the application of agricultural innovations through collaboration among public research organizations, farmers' groups, NGOs, the private sector and the civil societies and other stakeholders. The National Agricultural Innovation Project contributes to the sustainable transformation of Indian agricultural sector to more of a market orientation to relieve poverty and improve income. The specific aim is to accelerate collaboration among public research organizations, farmers, the private sector and stakeholders in using agricultural innovations. The project has four objectives.

1. Strengthen the Indian Council of Agricultural Research (ICAR) as the catalyzing agent for managing change in the Indian National Agricultural Research System (NARS) by focusing on: 1.1 Information, communication and dissemination system; 1.2 Business planning and development; 1.3 Learning and capacity building; 1.4 Policy and gender analysis and visioning; 1.5 Remodeling financial management and procurement systems; and 1.6 Project implementation.
2. Fund research on production-to-consumption systems.
3. Fund research on sustainable rural livelihood security.
4. Support basic and strategic research in the frontier areas of agricultural science features

The project will have a strong and transparent governance strategy for efficient working. Institutional and implementation arrangement will be fully streamlined to follow modern financial management, procurement system, knowledge management, and a results framework and monitoring which will ensure continuous progress and achieving the expected output. Systematic economic and financial analysis will be pursued along with close monitoring of environmental and social safe guards. Another major component of the project is a strong institutional learning and capacity building

plan for self-renewal of National Agricultural Innovation System. The plan includes comprehensive training need assessment, harnessing modern ICT in knowledge and education dissemination management for agriculture, capacity building to deal with globalize agricultural market and economy, capacity building for visioning and foresight etc.

First line extension and Regular Extension?

Today the first line extension is an outreach extension education programme done by the ICAR institutes and State Agricultural universities to the line departments in order to orient them with new technologies and processes emerging in the field. While regular Extension refers to the extension activities and programmes done by the line departments to farmers directly.

Agricultural Universities(Linking Teaching, Research and Extension)in India

While the various administrative set-ups, were tried and adopted, another notable innovation for improving the standard and quality of agricultural education, research and field extension (extension education), was introduced in India in the form of agricultural universities in various states. The first such university established in 1960 was the Govind Ballabh Pant University of Agricultural Science and Technology at Pantnagar(Uttar Pradesh). Subsequently, in each state one (in some states more than one) agricultural university was established and at present there are 53 Agricultural universities functioning performing the integrated task of teaching, research and extension in India. For extension education programmes and activities, each of these Universities has a directorate of extension education, headed by a director who is supported by a team of subject matter specialists from all the major disciplines, such as agronomy, animal husbandry, soil science, entomology, plant pathology, horticulture, agricultural economics, agricultural engineering and extension education. The directorate of extension education of the university is primarily responsible for keeping the extension personnel of the states department of agriculture up to date with the new agricultural technology, communication of new agricultural technology to farmers, the

training to farmers and extension personnel bringing out suitable extension literature for use by the farmers and extension workers and carrying out extension-education programme and developmental activities in selected areas.

2.6 Extension Programmes in other countries Bangladesh

The Comilla project in Bangladesh which aroused the interest of the rural development workers all over the world could be considered a giant leap forward for the extension work in that country. In early 1960s (the then East Pakistan), a National Academy was started at Comilla to train government officials in rural development. Particularly, Kotwali Police Station of the District was the experimental laboratory for developing and testing rural development methods focusing agriculture development. By trial and error, the Academy developed a comprehensive approach which features a particular interest to extension agents that facilitated an agreement between the local people and the Academy to carry out some activities like - organizing themselves into village cooperatives; and it became the principal agency for non-formal education which is the theme of agricultural extension.

Sri Lanka

Sri Lankan agriculture is characterized by a substantial diversity in farming systems. The majority of farmers operate small farms at subsistence levels, while the others produce crops/livestock on a commercial scale.

The extension approach centers around collective action by many departments as against a single department and emphasizes use of group extension methods. The basic concepts underlying the above approach are the farmer centered, whole farm, bottom-up participatory planning in the preparation of divisional, district and provincial programmes based on farmer needs identified through problem census, problem analysis and problem solving processes. It was envisaged to establish Farmer Reference Groups (FRGs) with common interests and similar resource endowments. The FRGs

were to form the most important link between the extension officer and the farming community.

Indonesia

The Integrated Pest Management (IPM) programme was launched in 1989 as a conscious decision by the Indonesian Government to come to terms with environmental degradation. It is said to be the first large scale attempt systematically to introduce more sustainable agricultural practices as a national, public sector effort.

The IPM extension approach is based on the Farmer Field Schools (FFS) which are non-formal in character and last for the main part of the rice growing season. There is a training field divided into one section following the IPM recommendations and another field following the more conventional agricultural extension service's advice. Lecturing is hardly used, instead trainees are encouraged to observe the fields and question the findings in an agro-ecosystem analysis. This is presented to the whole field school group and then discussed. Active members of groups are encouraged to train other groups, in farmer-to-farmer dissemination, which is seen as an important strategy for mass replication.

The programme has already inspired the World Bank to base the new National Extension Project on the IPM farmer field school model. Within the programme, there is work going on to generate funds from local governments. So far, the programme has reached relatively elitist farmers and ways of reaching the mass of Indonesia's rice farmers need attention.

The Philippines

Under the Local Government Code of 1991, the Congress of The Philippines decentralized authority to local Governments to manage and supervise 'basic services', including agricultural extension which had until then been the responsibility of the Ministry of Agriculture. Resources and assets were transferred as well as powers to



generate resources locally for funding development projects. This required a total reorganization of the extension system. The extension methods used range from individual to group extension, from mass to folk media, and IT (information technology). In more recent programmes, the Key Production Area (KPA) development approach is used which focuses on priority areas best suited for specific commodities which are based on agro-climatic suitability and the availability of markets for the products. By this approach, efficient utilization of scarce resources is ensured and the farmers' investments paid off. The empowerment of farmers and fisherfolk plays a central role in the approach and agrarian reform will give farmers access to land and water resources.

Building on the Philippine tradition of 'schools on the air' a pilot project was established in 1992 with the Government and The Philippine Council for Agriculture, Forestry and Natural Resources Research and Development. After having established the outside information need of local farmers (by participatory methods), short-term training programmes are broadcast on the air, accompanied by printed materials or videos. Community members are also being trained to prepare radio scripts.

China

Along with china's rural reform, the rural economy and social environment have been changed considerably. These have been summarized as follows:

- The managerial unit changed from commune and brigade to the individual household . As a result of these organizational changes, every peasant household runs a small farm, which on an average is 0.5 ha of farmland;
- Traditional agriculture switched to modern and commercialized agriculture;
- The farming system has been changed, many young farmers and many experienced farmers have gone to other sectors;
- There has been an increase in farmers' requests for technology, managerial and marketing knowledge; and
- The market approach has been increasingly embraced in agricultural production.

The first national extension programme 'Harvest Programme' was started in 1987. This programme contributed greatly to the rural development and farmers' income in China, and is still in the process of development. Beijing Agricultural University established an extension department in 1994. Several centers were established to use new ideas to conduct extension work. Besides, the Scientific Technology Committee of the Ministry of Agriculture is working for improving the cooperation among agricultural research, agricultural education and agricultural extension. Thus, the Chinese Government is trying to do two things at the same time:

- To establish a new extension system as soon as possible at all levels from State for farmers; and
- To make the extension system function efficiently.

The challenge now facing the Chinese extension system is that there is a lack of money to support the system that has been set up. The overall demand for technology innovation and diffusion now appears to be far greater than when the collective system of rural production was intact. While demand has risen, the practical difficulties of meeting this demand have also multiplied, as the system has to serve millions of production units, as against limited numbers under the previous collective system of rural production was intact. The situation has worsened because of lack of funds from the Government. It seems that, the Government will gradually reduce financial support to the extension organization and farmers will have to pay some money for the service they receive.

In this context, Chinese Government is envisaging some changes for the extension system in China. These are -

1. It is necessary to shift agricultural extension from the mandatory approach to other (participatory, for example) approaches.
2. The extension system needs to be strengthened, especially at the lower levels, Not only more staff, but also more training is needed.



3. The Government should have long-term planning approach and design a consistent policy
4. Farmers' organizations need to be developed.

Australia

In 1990, a community based LANDCARE programme was launched which is a grassroot initiative with Government support. For implementation of soil and water conservation programmes, community based Land care groups will be crucial as they will provide points of convergence for local action.

In Australia, the Land care movement provides a framework for community action to effect a substantial impact in terms of widespread reversal of land degradation, protection of native vegetation and improvements in the economic and social well-being of rural Australia. It has been extremely effective in mobilizing community participation growth and spread in all States and territories in Australia. The community participation in this movement has been able to surpass the policy, institutional and legislative responses to the pursuit of ecological sustainability.

The United States of America

The United States of America is noted for its University-based extension. Within the USA, State Universities have traditionally cooperated with local countries and the USDA (United States Department of Agriculture) in doing extension, besides education and research. The extension goals of the Land-Grant Colleges have shifted from practical education to technology transfer and, more recently, to a much broader concept of human resource development.

With the emergence of strong private and other public sector research and development organizations and dramatic changes within the agricultural production sector, Cooperative Extension Service is facing new challenges with regard to coordination and cooperation. Apart from its traditional roles, networking will become a

primary role. In this model, industry as well as intermediate and end-users of knowledge become part of the extension system.

While the Cooperative Extension Service of the United States is still the only system in which the main extension function remains within the University, some developing countries, notably India, have integrated educational institutions into practical extension work. The main contribution of educational institutions to extension will be the training of qualified personnel. Some Indian agricultural universities have come close to the US model without taking over the full load of extension work. In the field, they have taken over functions which are only inadequately performed by the Ministry, thus supporting general extension work by the States. Remarkable features are direct assessment of clients' needs, user-oriented research, quality training for State personnel, and a strong linkage between academic education and field practice.

2.7 Let us sum up

Several well defined extension approaches and systems for agricultural development have been practiced and are being practiced in several countries of the world since the beginning of the country. But not a single approach of system is found to be proper or suitable universally. Each one has its own advantages and limitations.

As reported by various extension scientists throughout the world, there are four district extension approaches followed in various parts of the world. These are :

1. Commodity - focused approach in extension
2. Community development-cum-extension approach
3. Technical innovation-centered approach
4. Clients focused approach in extension

The commodity focused approach aimed at increasing production and productivity. This approach is based on technical, administrative and commercial requirements of the single or a few number of crops.



The community development-cum-extension approach which is largely predominant in India and in limited extent in Africa and other parts of the world, has been rated so far as one of the most effective systems for raising production and productivity of crops together with their socio-cultural development of rural and farming community. In this approach, specific agricultural extension responsibility of the grass root level lies with the Village Extension Worker (VEW) or village extension agent. Together with agricultural activities he is expected to do several other social, economic and educational development works. This approach, therefore, has diluted village extension agent's overall work emphasis and as a result it has dispersed both his attention and accountability.

The innovation centered approach in extension centers around the technology transfer from outside the farm and transmitting the readymade technology to the users without considering their acceptability and capability to use the same. In this system the socio economic and cultural contexts are not taken into account and perhaps this is the greatest drawback of this approach for not making much headway in the countries where these are being followed.

The clients-focussed approach is a new school of thought advocated by various present day social scientists and development administrators. This approach is simplified and understood by the term Training and Visit (T&V) systems which is an organizational approach putting the farmer and his constraints, abilities, and needs at the Centre of the whole extension effort. This is also called holistic approach as it mobilizes the entire extension machinery and research systems to serve the clients and the ultimate producer. There is a new budget system in this approach to disseminate innovation and technical recommendation for the benefit of the farmer for enhancing his farm productivity and production.

As an effective management system, this Training and Visit or client focussed approach tries to overcome the problems of bureaucratic governmental procedure in extension - visits, meeting, training, supervision and demonstrating. Most important of

all this approach tried to sustain and improve research and extension linkage by conducting adoptive trials of research results at farmers fields. Though it is not full proof, this T & V system has been able to achieve to a certain extent the desired objectives of agricultural orientation in India. To make the system more effective and result oriented, perhaps, there are need to address the following issues.

Issues to be Addressed

From the experiences of several extension projects in India and other parts of the world and form the reports of several case studies, one significant conclusion can be drawn that the basic strategy of agricultural extension must be changed, restructured and reoriented to cater to the needs of the clientele.



Unit-3

Extension Methods – Individual, Group and Mass

Structures

- 3.0. Objectives
- 3.1. Introduction
- 3.2. Extension Through Individual Contact Methods
- 3.3. Extension Through Group Contact Methods
- 3.4. Extension Through Mass Contact Methods

3.0 Objectives

After completion of this unit, you will be in a position to:

- Learn various channels of communication to reach target audience.
- Understand individual, group and mass methods and its advantages and disadvantages to use in extension programme activities, and
- Select and decide in using suitable extension methods, based on the needs and characteristics of target groups.

3.1 Introduction

The extension worker is essentially a teacher. He must visualize the problems in proper perspective and organize the meaningful learning situation for effective learning. It calls for appropriate use of different teaching techniques. Most of the success in bringing about the desired changes in behaviour of learners depends upon the skill of the extension worker as teacher in choosing the teaching techniques most effective to the relevant situations.

In case of Agricultural Extension, the main theme of teaching happens to be the adoption of innovation by individual farmer and subsequent diffusion of the same in the community. Thus, the innovation or idea of innovation becomes hard core, raw material or the message which needs to be treated in palatable way with the help of the extension teaching methods for effective communication. This is a complex phenomenon for the reason that the adoption of an innovation is an individual decision making process. This process involves the stages of awareness, interest, evaluation, trial and adoption. In each stage of this process, it calls for an effective and thoughtful grouping of effective teaching methods to lead the learners towards the desirable changes.

Added to this, the farmers do not adopt an innovation at the same rate or extent as they get distributed into different categories such as innovators, early adopters, early majority, late majority and laggards. For each group of this clientele, the extension worker has to design and arrive at appropriate combination of teaching methods. Still further, the characteristics of innovation itself dictates to certain extent the method that need to be selected for dissemination of agro-information.

Extension workers' main job is to educate the rural people. Extension methods are the tools of the extension workers. These tools are called extension-teaching methods. Extension teaching methods may be defined as the devices used to create situations in which communication can take place between the extension worker and learner.

Effectiveness of the teaching methods depends on the combination of the same. Research studies have conclusively shown that the adoption of innovation is positively related to the combinations of different extension teaching methods, at different stages of learning.

The choice of a channel or method of communication, also known as extension teaching method, generally depends on the number and location of the target audience and the time available for communication. They are categorized as individual, group



and mass methods. Each of the methods has both advantages and limitations. The extension agent has to choose a particular method or combination of methods according to the needs of the situation.

Extension Through Individual Contact Methods

Individual Method

In individual method the extension agent communicates with the people individually, maintaining separate identity of each person. This method is followed when the number of people to be contacted are few, are conveniently located close to the communicator, and sufficient time is available for communication. Some examples of individual method are : Farm and home visit, farmers' call, personal letter, adaptive or mini kit trial and farm clinic.

The advantages of the individual method are :

- Helps the extension agent in building rapport.
- Facilitates gaining first hand knowledge of farm and home.
- Helps in selecting administrators and local leaders.
- Helps in changing an attitude of the people.
- Helps in teaching complex practices, and
- Facilitates transfer of technology effectively.

The limitations of the individual method are:

- This method is time consuming and relatively expensive.
- It has low coverage of audience, and
- Extension agent may develop favoritism or bias towards some persons in the method.

The individual methods are :

Farm and Home Visit: It is a direct face-to-face contact by the extension agent with the farmer or homemaker at their farm or home for extension work.

Objectives

1. To get acquainted with and gain confidence of farmers and homemakers.
2. To obtain and / or give firsthand information on matters relating to farm and home.
3. To advise and assist in solving specific problems, and teach skills.
4. To arouse interest.

Farmers' Call: It is a call made by farmer or home maker at the working place of the extension agent for obtaining information and assistance.

Objectives

1. To get quick solution of problems relating to farm and home.
2. To enable the farmer and homemaker to bring specimens of diseased plants or insects, pests etc. for proper identification of the problem.

Personal Letter: This letter is written by the extension agent to particular farmer or home maker in connection with extension work. This should be regarded as a substitute for personal contact.

Objectives

1. To answer enquiries relating to problems of farm and home.
2. To send information or seek cooperation on important extension activities.

Adaptive or Minikit Trial: It is a method of determining the suitability or otherwise of a new practice in farmers' situation. This may be regarded as an on farm participatory technology development practice in which farmers choice and farmers opinion about the practice are most important.



Objectives

1. To test a new and promising practice under the resources, constraints and abilities of the farmer.
2. To find out the benefits of the new practice in comparison to the existing one.

Farm Clinic: Farm clinic is a facility developed and extended to the farmers for diagnosis and treatment of farm problems and to provide some specialized advice to individual farmers. The extension agency may set up farm clinics in the village and / or in the organization's headquarters and sub-centres, where the relevant subject matter specialists, in collaboration with the extension agents, discuss, diagnose and prescribe treatment to farmers' problems, meeting those persons individually, on fixed place, day and time.

3.3 Extension Through Group Contact Methods

Group Method

A group may be defined as an aggregate of small number of people in reciprocal communication and integration around common interest. In this method, the extension agent communicates with the people in groups and not as individual persons. This method is adopted when it is necessary to communicate with a number of people simultaneously, who are located not far off from the communicator and reasonably good time is available for communication. The examples of group methods are result demonstration, method demonstration, group meeting method, small group training, field day or farmers day and study tour or exposure visit.

The advantages of the group method are:

- Enables, extension agent to have face to face contact with a number of people at a time.
- Can reach a select part of the target group.
- Facilitates sharing of knowledge and experience and thereby strengthen learning of the group members.

- Satisfies the basic urge of people for social contacts.
- Motivates people to accept a change due to group influence.
- Less expensive than individual method due to more coverage.

The limitations of the group method are :

- Wide diversity in the interest of the group members may create a difficult learning situation.
- Holding the meeting may be regarded as an objective in itself and
- Vested interests, caste groups and village fractions may hinder free interaction and decision making by the group members.

The group methods are:

Result demonstration: It is a method of motivating the people for adoption of a new practice by showing its distinctly superior result. The demonstrations are conducted in the farm or home of selected individuals and are utilized to educate and motivate groups of people in their neighbourhood. This is a very effective method for the transfer of technology in a community.

Objectives

1. To show the advantages and applicability of a newly recommended practice in farmer's own situation.
2. To motivate groups of people in a community to adopt a new practice by showing its result.

Method demonstration: It is relatively short-time demonstrations given before a group of people to show how to carry out entirely new practice or a old practice in a better way. It is essentially a skill training, where the emphasis is on effectively carrying out a job, which shall improve upon the result.

Objectives

1. To teach skills and stimulate people to action.
2. To get rid of inefficient or defective practices



Group meeting: It is a method of democratically arriving at certain decisions by a group of people, by taking into consideration the members' point of view. Group meetings and discussions aim at collective decision making and at improving individual decision making by using the knowledge and experience of group members.

Objectives

1. To prepare a favourable climate for discussion and help in better understanding of the problem by pooling the knowledge and experience of a number of persons.
2. To facilitate in-depth discussion by involving a small number of participants.

Small group training: It is a technique of imparting specific skills to a group of people who need them by creating appropriate learning situation. This is an effective method for transfer of technology.

Objectives

1. To impart the needed skills to a small group of people.
2. To motivate people to adopt new practices through skill training.

Field day or farmers day: A method of influencing the people to adopt a new practice by showing what has actually been achieved by applying the practice under field conditions. A field day or farmers' day may be held in a research farm or in a farmer's field or home.

Objectives

1. To convince the participants about the applicability of the practice in their own situations.
2. To motivate them to adopt the practice by showing its performance and profitability under field conditions.

Study tour or Exposure visits: In study tour, a group of interested persons accompanied and guided by one or more extension agents moves out of their neighbourhood to study and learn significant improvements in farm and home elsewhere.

Objectives

1. To expose the visitors to a new and different situation which shall help in changing their outlook and extend their mental horizon.
2. To understand the gap in technology adoption.

3.4 Extension Through Mass Contact Method

Mass Method

In this method, the extension agent communicates with a vast and heterogeneous mass of people, without taking into consideration their individual or group identity. Normally group boundary gets obliterated. This method is valid when a large and widely dispersed audience is to be communicated within a short time. There may be a few communicators such as the extension agent and some subject matter specialists. The size of the audience may be a few 100s in mass meeting, few 1000s in campaign and a few lakhs in newspaper, radio and television. A few examples of mass methods are farm publications, mass meeting, campaign, exhibition, newspaper, radio and television.

Advantages of mass method are :

- It is suitable for creating general awareness among the people. It helps in transferring knowledge in farming and changing opinions.
- Large number of people are communicated within a short span of time.
- Facilitates quick communication in times of emergency.
- Less extensive due to more coverage.

Few limitations in mass methods

- It is less intensive method.
- Little scope for personal contact with the audience.
- Generalized recommendations hinder application by individuals.
- Little control over the responses of the audience, and
- Difficulty in getting feedback information and evaluation of results.



Mass methods are:

Farm publication: It is a type of publication prepared by the extension agency in printed form, containing information relating to the improvement of farm and home. Farm publications are of various types such as leaflet, folder, bulletin, newsletter, journal and magazine. Farm publications may be used singly or in combination with other extension methods.

Objectives

1. To reach a large number of people quickly and simultaneously at a low cost.
2. To provide accurate, motivating, credible and distortion free information.

Mass meeting: It is held to communicate interesting and useful information to a large audience at a time. The size of the audience for mass meeting may be a few hundreds, but at the time of fairs or festivals, it may be few thousands.

Objectives

1. To focus attention of the people on some important topic.
2. To create general awareness about a programme or project and to announce its progress.

Campaign: It is an intensive educational activity for motivating and mobilizing a community to action to solve a problem or specify a need urgently felt by it. The duration of a campaign may be for a single day on a theme like 'Water for Life', for a few weeks as in Rat control, for a few months as in Vanamahostava (tree planting) and for a few years as in 'Grow More Food' campaign. Campaign on certain themes (say, environment, disease control etc.) may be organized over the whole world. Rat control can effectively done through campaigns only by involving all the farmers in the villages.

Objectives

1. To create mass awareness about an important problem or felt need of the community and encourage them to solve it.

Exhibition: It is a systematic display of models, specimens, charts, photographs, pictures, posters, information etc. in a sequence around a theme to create awareness and interest in the community. This method is suitable for reaching all types of people. Exhibitions may be held at the village, block, sub-division, district, state, national and international levels.

Objectives

1. To promote visual literacy.
2. To acquaint people with better standards.

Newspaper : It is a bunch of loose printed papers properly folded, which contains news, views, events, advertisements etc. and is offered for sale at regular intervals particularly daily or weekly. Newspapers are usually printed on a special type paper, known as newsprint.

Extension agent cannot exercise any control over the newspaper, big or small. However, by establishing a good rapport with the editor, reporter etc. a reasonable support for extension work may be obtained. Newspapers may support extension work by publishing news of extension activities and achievements, extension recommendations and package of practices, success stories, market news, focusing farmers problems, advertisements issued by extension organizations, input dealers etc. Newspaper is a good medium of communication in times of crises and urgent situations. Most of the Indian language daily newspapers devote a page or a part of it on agriculture and rural development on a fixed day of the week.

Radio: It is an electronic audio medium for broadcasting programmes to the audience. This medium is cosmopolite in approach and is suitable for communication to millions of people widely dispersed and suited in far-flung remote areas. Availability of low cost transistor sets has helped radio to penetrate deep into the rural life.

Radio is suitable for creating general awareness amongst the people, help change their attitude and reinforce learning. The medium is extremely convenient for communication

in times of crises and urgent situations. People with no education or very little education and those who are not in a position to attend extension programmes personally, can take advantage of this medium and build up adequate knowledge and skill. It reaches a large number of people at a very low cost. The programmes may be listened to while one is engaged in farming or household work.

Farm and Home broadcasting

The scope and structure of Farm and Home broadcasts have since changed and enlarged to meet the diversified needs and interests of the rural audience which grew in size over the years. The broad objectives of Farm and Home broadcasts are -

1. To inform the farming community about the latest scientific techniques of increasing production in all important farm enterprises.
2. To inform the non-agricultural rural population about the subsidiary and agro-based enterprises for improving their earnings.
3. To help the rural people to participate in constructive agricultural and social programmes for betterment of rural life.
4. To inform the rural women on improved home making, on supporting their male counterparts on improved farming and to encourage them to participate in decision-making for progress of scientific farming.

Television: It is an electronic audio visual medium which provides pictures with synchronized sound. Television combines immediacy of radio with the mobility of cinema and can carry messages over long distances at all relatively low unit cost. It is cosmopolite in approach and can be used to create instant mass awareness.

AEM-101

Introduction to Agricultural Extension Management (4 Credits)

Block-II

New and Emerging Dimension in Agricultural Extension

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Unit-1

Revitalization of the Agricultural Extension System

Structures

- 1.0. Objectives
- 1.1. Introduction
- 1.2. Historical Perspective
- 1.3. T&V System
- 1.4. Extension Reforms
- 1.5. Salient features of ATMA
- 1.6. Recommendations of NCF
- 1.7. XIth Plan Approach Paper
- 1.8. Dovetailing strengths of T & V System in ATMA
- 1.9. Summing Up

1.0. Objectives

After going through this unit, you should be able to understand

- Need for reforms in Agricultural Extension
- Salient features of reforms in Agricultural Extension
- Dovetailing the strengths of T & V system
- Policy approaches for reforms in Extension

1.1. Introduction

Agricultural extension has a crucial role to play in the context of growing demands of agricultural production in a sustainable manner. Reforms in the system envisage an extension service more broad-based and holistic in content and scope, thus beyond agricultural technology transfer. Its normal task of transferring and disseminating

appropriate technologies and agronomic practices would not be sufficient. Extension agencies, services and functionaries will need to exercise a more proactive and participatory role, serve as knowledge information agents, initiating and facilitating mutually meaningful and equitable knowledge based transactions among primary producers, agricultural researchers and trainers. All this needs to be done in an effective and cost efficient manner.

The need for reforms in Agricultural Extension has been explicitly raised in the National Agriculture Policy; the report of Expenditure Reforms Commission, as well as, the Tenth Plan Approach paper. Keeping the recommendations of these policy initiatives in view, and to provide policy directives for extension reforms, a broad Policy Framework for Agricultural Extension (PFAE) has been developed by the Ministry of Agriculture, Govt. of India.

The five major guiding elements of the Policy Framework are as follows:

- Reforming Public Sector Extension.
- Promoting private sector to effectively complement, supplement and wherever possible to substitute public extension.
- Augmenting Media and Information Technology Support for Extension.
- Mainstreaming Gender Concerns in Extension.
- Capacity Building/ Skill up-gradation of farmers and extension functionaries.

The reforms enlisted above have been pilot tested under Innovations in Technology Dissemination (ITD) component of World Bank funded National Agricultural Technology Project (NATP) with effect from November, 1998 in seven states viz. Andhra Pradesh, Bihar, Himachal Pradesh, Jharkhand, Maharashtra, Orissa and Punjab covering 4 districts in each State. An autonomous institution – Agricultural Technology Management Agency (ATMA) has been established in these project districts as a registered society representing various stakeholders, including farmers, in project planning and implementation.



1.2. Historical Perspective

The basic extension machinery in India today is the outcome of the short-lived Grow More Food (GMF) campaign that was started by the then Food Minister Shri K.M. Munshi in 1947. This campaign fizzled for want of a formal extension organization. In 1948, Albert Meyer spearheaded the first post-independence extension program in the district of Etawah, in Uttar Pradesh. This was the first example of peoples' participation in rural development. It also marked the beginning of the multi-purpose, village extension worker that exists even today in India. Experiences generated through this pilot project were the precursors of the Community Development Programme (CDP) that was initiated in 1952 by the Indian Planning Commission. The program was scaled up in 1953 as the National Extension Service (NES) to provide widespread extension coverage and with greater people's participation. This arrangement became the permanent extension setup for the country.

The late 1950s saw large-scale food deficits, thus compelling the Government to abandon its comprehensive rural development strategy and to concentrate solely on increasing food production. In April 1959, an agricultural production team sponsored by the Ford Foundation highlighted the importance of food self-sufficiency. This Team, in its report entitled "India's Food Crisis and Steps to Meet It," suggested that intensive efforts should be made to increase food production by using a combination of technical know-how and concentrating manpower and resources in selected areas. This was the beginning of the Intensive Agricultural District Program (IADP) or, as more commonly known, the *Package Program*.

1.3. T&V System

The introduction of the Training-and-Visit (T&V) extension system was an important milestone in the history of extension in India. The basic premise of T&V was that there was enough technology available awaiting diffusion to and adoption by farmers. The T&V extension system was first introduced in 1974-75 on a pilot basis in

the Chambal Command area of Rajasthan and Madhya Pradesh. Based on positive feedback, the project was further extended to 17 other states in 1978-79.

The Village Extension Worker (VEW) was the most important link at the field level under this system. The number of farming households to be covered by one VEW was rationalized to a range of 300 to 1200 families. The identified number of families was divided into eight groups and 10 per cent of farmers of the group were identified as contact farmers. The VEW would then visit the contact farmers according to a well-planned schedule covering the circle of eight groups at least once in a week or a fortnight depending on the situation. Two days were fixed during this period for two types of training: a one-day fortnightly training conducted by the Subject Matter Specialists (SMSs) to expose a group of 30-40 VEWs operating in the area to three to four selected agricultural practices and another one-day weekly programme informally coordinated by the Agriculture Extension Officer. Thus, out of twelve days in a fortnight, a VEW would spend eight days in the field, two days in training and two days clearing pending work.

Strengths of T & V System

The main strengths of the Training and Visit (T&V) System were the close Research and Extension linkage which provided an opportunity for the Subject Matter Specialists (SMSs) and the extension staff at Sub-divisional and Block level to interact regularly through monthly workshops. The main purpose was to build-up technical skills of Subject Matter Specialists (SMSs) regularly so that they can meet effectively the actual technological needs of farmers and adapt the recommendations suitably. The other purpose was that researchers and SMSs discuss and formulate relevant production recommendations for subsequent transfer to Agricultural Extension Officers and Village Extension Workers in the next fortnightly training sessions and ultimately reaching farmers through Contact farmer.



The other strength of the T&V system was the continuous trainings of field level functionaries by SMSs. This was made possible due to the availability of adequate manpower at all levels. The other important feature of T&V was, the Village Extension Worker (VEW), visiting farmers' field through contact farmers regularly on a scheduled day, to advise and train farmers on recommendations of relevant agricultural technology and to encourage them to adopt.

Constraints of T & V System

The research studies have revealed that T&V system had not created uniform impact. It achieved success mainly in irrigated areas for the selected crops like Rice and wheat. The system did not give due emphasis to other enterprises such as animal husbandry, fisheries, horticulture etc. Even within the agriculture, no visible impact was created on the crops, which are grown under rainfed agriculture like millets, pulses and oil seeds. The large increase in staff from district to village level put a heavy burden on state resources, with most funds being spent in meeting the salary component. The large contingent of village level workers were educated up to secondary school level and therefore were not able to transfer the technology as intended due to their poor absorption of the know-how. The other constraints observed were:

- i) Multiplicity of Public Extension System
- ii) Narrow focus of the Agricultural Extension System
- iii) Lack of farmer involvement in Extension programme planning
- iv) Lack of local capacity to validate and refine technologies
- v) Absence of public sector linkages with private sector
- vi) Lack of gender concern
- vii) Lack of involvement and coordination among line department functionaries
- viii) Absence of Technology assessment and refinement and lack of targeting in extension

Even though, the project came to an end in early 1990s, the T & V System was continued in some states. Over a period of time, the states also modified the system due to lack of resources to fund basic extension activities. However, the following

constraints were also observed in the post T&V extension systems across the states in the country in addition to above constraints:

- i. Lack of transparency and accountability
- ii. Inadequate technical capacity among the extension functionaries
- iii. Supply driven rather than market driven extension
- iv. Lack of emphasis on farmers' trainings
- v. Inadequate operating resources and financial sustainability

1.4. Extension Reforms

Extension Reforms were introduced during 2005-06 by the Department of Agriculture & Cooperation (DAC), Ministry of Agriculture, Government of India a major intervention in addressing the constraints as observed in T & V and post T & V system by making the extension system farmer driven and farmer accountable through process and institutional reforms mechanism. The institutional mechanism in the form of Agricultural Technology Management Agency (ATMA) at district level was pilot tested under Innovations in Technology Dissemination (ITD) component of National Agricultural Technology Project (NATP) in seven states and 28 districts from 1998 to 2004. The key features of reforms are:

- i. New institutional arrangements – Decentralized decision making
- ii. Convergence of line departments – gap filling mode
- iii. Multi agency extension strategies – encourage private sector (minimum 10% allocation)
- iv. Broad-based extension delivery through Farming Systems Approach (FSA)
- v. Group approach to extension through Farmers Organizations (FOs) and Commodity Interest Groups (CIGs)
- vi. Gender concerns-Minimum 30% allocation
- vii. Sustainability of extension services – Minimum 10% beneficiary contribution
- viii. Bottom-up planning

1.5. Salient Features of ATMA

ATMA is established at district level as an autonomous institution providing flexible working environment involving all the stakeholders in planning and implementation of extension activities. ATMA is a unique district level institution, which caters to activities in agriculture and allied sectors adopting a farming systems approach and convergence of programmes of related departments. Local research and extension priorities are set through Strategic Research and Extension Plans (SREPs), which are developed using participatory methodologies.

ATMA is registered under the “Societies Registration Act of 1860” that has considerable operational flexibility. It operates under the guidance of a Governing Board (GB) that determines program priorities and assesses program impact. The executive head of ATMA is known as the Project Director (PD) and reports directly to the ATMA Governing Board.

One of the most important activities undertaken by ATMA is to prepare SREP, which consist of detailed information about agriculture and allied sectors in the district. The purpose of preparation of SREP is to identify research and extension needs of the district. This helps in undertaking only those extension activities which are needed by farmers in the district. SREP is prepared with full participation of farmers and their representatives at different levels. Technical officers of agriculture and allied departments as well as from KVKs and other research institutions fully participate in preparation of SREPs.

Based on the research-extension strategies given in the SREPs, block/ district level plans are developed by ATMA institutions. The State Extension Work Plan developed at state level is a consolidated activity-wise plan incorporating all the district level plans and the state level activities.

In order to provide needed Human Resource Development (HRD) support in the innovative areas of extension delivery, State Agricultural Management and Extension

Training Institute (SAMETI) has also been established in each state. They run regular training courses for the line departments apart from being study centres for the PGDAEM(Post graduate diploma in Agricultural Extension Management run by MANAGE)

1.6. Recommendations of National Commission on Farmers (NCF)

The National Commission on Farmers (NCF) has examined the issues relating to farmers and made the following recommendations.

- i. Commodity based farmers' organizations should be promoted to combine the advantages of decentralized production and centralized services, post-harvest management, value addition and marketing, for leveraging institutional support and facilitate direct farmer-consumer linkage. It would provide small farmers 'power of scale'.
- ii. Considering that majority of our farmers are small and resource poor and depend heavily on public good technologies and information, the public sector agricultural extension men and women should be empowered and sensitized to meet the demands particularly by forging research-extension-education-farmer-market linkages.
- iii. Farmer to farmer learning is the most credible and effective. For this purpose, Farm Schools may be established in the fields of outstanding farmers and awardees of nationally recognized awards for farmers.
- iv. Recognizing the input dealers and suppliers were second most common source of information for farmers, regular trainings of the dealers / suppliers / retailers should be organized not only to update their knowledge but also to improve their communication skills and attitudes to empower farmers with new information on inputs use and farming operations.
- v. ICT should be effectively harnessed to empower rural men and women through Every Village a Knowledge Centre movement with farming system and season specific information as well as market and price information.



1.7. XIth Plan Approach Paper

The XIth Plan Approach Paper has given high priority to the revitalization of the extension system. Some of the important thrust areas mentioned in the Approach Paper are:

- i. Revitalization of extension system focusing on known technologies.
- ii. Improvement of research-extension linkages.
- iii. Convergence of schemes of Ministry of Agriculture.
- iv. Encouragement of partnership between civil society organization and Government / Panchyat Raj Institutions (PRIs)
- v. Mainstreaming gender concerns.

1.7a. XIIth Plan strategies for Extension

RURAL TRANSFORMATION

The following seven major flagship programmes are operating in rural areas.

- (1) Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
- (2) National Rural Livelihood Mission (NRLM)
- (3) Indira Awas Yojana (IAY)
- (4) National Rural Drinking Water Programme (NRDWP) and Total Sanitation Campaign (TSP)
- (5) Integrated Watershed Development Programme (IWDP)
- (6) Pradhan Mantri Grameen Sadak Yojana (PMGSY)
- (7) Rural electrification, including separation of agricultural feeders and Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY).

MGNREGA

Experience thus far suggests that while MGNREGA is generating employment, the technical soundness of design and quality of works undertaken in MGNREGA falls short of what is needed to ensure land productivity enhancement. There appear to be

two critical areas in regard of MGNREGA that need to be addressed and resolved in the Twelfth Plan. First, the technical capacity at the local level has to be significantly enhanced. This is in regard to planning, design and quality of works, as well as of their maintenance. Planning for MGNREGA on a mini-watershed and aquifer basis would improve outcomes. To strengthen the demand-driven character of the scheme and guarantee legal entitlements, it is important to record applications for work. There is a clear case for establishing a pool of local 'barefoot' engineers/technical assistants who could be trained up through an appropriate mechanism, enabling them to fulfil the need for technical and managerial capacity in MGNREGA, as well as in other rural infrastructure projects

Second, it is important that the selection of works reflects the needs, aspirations and priorities of the local people, without which the community will not necessarily have a sense of ownership of the project. The latter is a vital component of the concept of rural infrastructure creation. The training of a pool of local youth in technical skills must also incorporate their ability to act as social mobilizers and ensure the involvement of Panchayati Raj Institution (PRI) representatives at every level of the process. They would be guided in this process by a dedicated team of technical professionals (to be created) at each cluster of around 30 villages that broadly correspond to the boundaries of a mini-watershed and aquifer.

National Rural Livelihoods Mission (NRLM)

The real power of the SBL model lies in the economies of scale created by Self Help Group (SHG)-Bank linkage Federations (comprising 150–200 SHGs each). This is evident, for example, in bulk purchase of inputs (seeds, fertilisers etc.) and marketing of outputs (crops, vegetables, milk, NTFPs etc). They can also provide larger loans for housing and health facilities to their members by tying up with large service or loan providers. A variety of insurance services can also be made available, including life, health, livestock and weather insurance. It has also been shown how doing business with SHG Federations can help public sector bank branches in remote rural areas



become viable entities. National Rural Livelihoods Mission can only be successful if it is tied up with livelihood programmes such as improved agriculture, dairying, marketing, etc. Thus, the SBL and livelihood programmes are complementary to each other and their simultaneous implementation is the key to poverty alleviation. Incomes earned through livelihood initiatives need to be saved. Of these savings, women are the best custodians. These savings must, in turn, be reinvested in livelihood options that raise incomes, setting up a virtuous cycle. The distinctive focus of the NRLM is on Federations of SHGs that become powerful units of economic empowerment, enabling the poor to radically alter the balance of power in the markets they participate in as both producers and consumers.

Indira Awaas Yojana (IAY)

Success of IAY is by making it a loan product offered by SHGs. Finally, to transform IAY into a larger habitat development programme, we need to ensure domestic water, sanitation, clean fuel and electricity with housing. This calls for deeper convergence across various flagship programmes.

Sanitation and Drinking Water

A 2008 study covering 162 NGP Gram Panchayats in six States shows that only 4.0 per cent of GPs were genuinely open defecation free. In 32.0 per cent of the GPs, more than 40.0 per cent of the people are not using the toilets built for them under TSC including non-acceptance by local communities, water pollution especially in shallow water table regions, and waste of public funds. It is also clear that use of toilets cannot be sustained without provision of water supply and many NGP villages have slipped back because the promised water supply never materialized. Equally, safe drinking water cannot be ensured without quality sanitation in place. Sanitation and drinking water programmes have to be converged at all levels of implementation. Since rural drinking water is overwhelmingly supplied by groundwater, there is an urgent need to

adopt an aquifer management perspective so that the demands of irrigation do not lead to a drying up of drinking water sources.

The separation of feeders supplying power to tube-wells from other rural feeders ensures that villages can get full day three-phase power for domestic use, schools, hospitals and village industries while farmers get around eight hours of full-voltage three-phase power according to a pre-announced schedule. Predictable, reliable, high-quality, even if rationed in amount is better than the earlier erratic, poor quality supply that incentivized both power theft and extensive mining of groundwater since pumps were left on to benefit from electricity when it became available .

Integrated Watershed Management Programme (IWMP)

Institutional building needs the involvement of local people and social mobilisation has, therefore, to be an important component of the programme. Master Trainer Organisations that are specially dedicated to this task have to be developed on an urgent basis. Likewise, empanelment of credible institutions from academia and the voluntary sector for monitoring, evaluation and social audit is necessary to infuse the programme with accountability and quality. Finally, the distinguishing characteristic of the new IWMP approach is its emphasis on livelihoods, especially for families without any assets. There are many government and non-government organisations in India who have done pioneering work in this regard and the Department of Land Resources (DoLR) will need to facilitate partnerships of each state government with carefully selected institutions to carry this process forward with momentum.

National Rainfed Areas Authority (NRAA) could play a major anchoring role in infusing the IWMP programme with quality. For this it needs to be greatly strengthened through inclusion of experts in social mobilisation, institution building, rural management, rural livelihoods and rural technology and people with experience in implementing watershed programmes. Civil society representatives could also form part of the governance structure of NRAA to provide a perspective, expertise and

experience from the grass-roots level. The NRAA also needs to be provided as much professional autonomy as possible in its functioning.

Farm Sector

About half of our population is either wholly or significantly dependant for their livelihoods on some form of farm activity – be it crop agriculture, horticulture, animal husbandry or fisheries. With low levels of infrastructure and human development, and in a context replete with inequalities and uncertainty, Rural India views its future transformation with both hope and trepidation. Expansion of farm incomes is still the most potent weapon for reducing poverty. Non-farm income opportunities such as post-harvest operations, maintenance of farm equipment, etc. – offer a virtuous cycle connecting expansion of farm activity to that of rural non-farm income opportunities.

Farm Sector Growth and Rural Incomes

We need to ensure that 4.0 per cent average growth, if not more is achieved in the Twelfth Plan period. Although rural incomes have increased and rural poverty has reduced over the years, the gap between urban and rural incomes has widened quite sharply because agriculture has grown slower than other sectors and because employment growth in non-agriculture has not been enough to sufficiently reduce the population dependent on agriculture. Productivity gains from the Green Revolution reached a plateau by the Eighth Plan end, causing per capita food grain production to decline thereafter. Agriculture did diversify towards horticulture, animal husbandry and non-food crops, but agricultural GDP growth averaged only 1.9 per cent during 1997-98 to 2004-05. Farm incomes increased even less since terms of trade turned against agriculture during this period, indicating inadequate demand and lack of rural purchasing power.

There was clear evidence of technology fatigue, run-down delivery systems in credit, extension and marketing services and of insufficient agricultural planning at district and lower levels. Two major schemes namely RKVY (Rashtriya krishi vikas

yojana) & NFSM (National Food security Mission) were introduced consequent to the NDC (National development council) resolution of 2007. Many rainfed areas are now substantially contributing to food basket of the country. National Rural Employment Guarantee Act (MGNREGA) to dovetail employment security with land and water conservation n, and the Backward Regions Grants Funds (BRGF) have enabled Panchayati Raj institutions in poorer regions to make their own plans. In addition to enhancing the scope of these initiatives, and making modifications as suggested by the various working groups, the Eleventh Plan introduced the Rashtriya Krishi Vikas Yojana (RKVY). This put in effect the NDC resolution to 'introduce a new scheme for Additional Central Assistance (ACA) to incentivize States to draw up plans for the agricultural sector more comprehensively, taking agro-climatic conditions, natural resource issues and technology into account, and integrating livestock, poultry and fisheries more fully.'

There has been a positive response as agricultural GDP growth accelerated to average 3.7 per cent growth during 2005-06 to 2010-11, partly because of initiatives taken since 2004. This, however, is still below the 4.0 per cent target set in successive plans from Ninth Plan onward and has not been sufficient to prevent unacceptably high food inflation in a context of very volatile world prices and in the wake of a severe drought in 2009. Nonetheless, although high food prices are clearly a set-back for inclusive growth, this has improved agriculture's terms of trade and prevented further fall in farm incomes relative to overall GDP (agriculture's share in nominal GDP in 2010-11 was about the same as in 2004-05). While this has restored confidence to some extent, inflation itself is causing concern among farmers who are not only facing higher costs and but also adverse effects of certain policies adopted to cope with inflation, e.g. export bans. Moreover, there are some farmer concerns arising from the effect on wages of MGNREGA. Higher wages and assured availability of jobs have resulted in scarcity of farm labour at least in some seasons.

The Twelfth Plan should explore the feasibility of synergizing activities of MNREGA with agricultural operation.

Demand and its Composition

On the demand side, a 9.0 per cent growth of the economy as a whole is expected to generate the demand to support 4.0 per cent growth in agriculture with foodgrains growing at about 2.0 per cent per year and non-food grains (notably, horticulture, livestock, dairying, poultry and fisheries) growing at 5.0 to 6.0 per cent.

The challenge is how to feed India's growing population with rising incomes, but limited land and water resources. The economy is expected to grow strongly and, as the latest NSSO survey data for 2009- Household expenditure reveals, an average household still spends nearly half of its expenditure on food and food products. Thus, pressure on food demand is likely to remain strong over the Twelfth Plan period while consumption is likely to be more diversified as cereals now account for only 15.0 per cent of the total consumption expenditure.

The food consumption basket is getting increasingly diversified and though cereals still dominate, this dominance is being increasingly eroded by rising expenditure on fruit, vegetables, milk, eggs, meat and fish which together is sometimes referred to as the 'high value' segment. This transformation of the Indian food consumption basket is in-line with expectations. The NSSO data also shows that between 1993-94 and 2004-05, the per capita human consumption of cereals increased among the poorest 5.0 per cent of the population, while it fell among the remaining 95.0 per cent. The decline was also sharper in rural areas than in urban ones. However, the demand for cereals used in animal feed is accelerating.

Issues of food security have moved to the forefront of international discussions in recent years and in this context, the question is sometimes asked whether India will be able to feed herself or become dependent on food imports. The fact is that we have been a net exporter of cereals for most years since 1990. In 2010-11, despite bans on export of

wheat and non-basmati rice, India exported over 5 million tonnes of cereals comprising 2 million tonnes of basmati rice and 3 million tonnes of corn, while simultaneously adding substantially to stocks of wheat and rice. Also, the balance of evidence suggests that there is enough untapped potential for productivity improvements on Indian farms to enable us to meet cereal demand from domestic production without having to become dependent on food grain imports on a net basis. The key to ensuring long-run food security lies in targeting cereals productivity to increase significantly faster than the growth in population, so that adequate land becomes available for other agricultural use.

Production

On the supply side this calls for action on several fronts and the precise mix varies from one agroclimatic zone to the other. However, a matter of national priority from view of both food security and sustainability is to fully extend the green revolution to areas of low productivity in the Eastern Region where there is ample ground water. Bringing Green Revolution in the Eastern India (BGREI) has been introduced as a sub scheme of RKVY from 2010-11. This should be supplemented by investment in infrastructure, particularly in power, logistics and marketing. The more general, but significant points of intervention on the production side are identified below:

Water Management

The first and perhaps the most important component is vastly superior water management. These include a wide and diverse range of problems, objectives and means of resolution

- A focus on Command Area Development and the rehabilitation and physical modernisation of existing major irrigation systems.
- Extensive rainwater harvesting assisted by space-based maps with active ground-truthing and convergence with other development schemes.
- Comprehensive aquifer mapping and extensive ground water recharge.



- Move towards sprinkler and drip irrigation and away from flood irrigation
- Assuring irrigation to much more land far beyond the present 42.0 per cent of arable land
- Strengthening of drinking water resources
- Integration of these activities with existing surface reservoir based canal irrigation.

Micro-irrigation schemes to ensure access to water in more areas and encouragement of efficient methods of water-use are a natural extension to efforts in rainwater-harvesting and decentralized impounding of water, including that in farm ponds. National Mission on Micro Irrigation is being implemented to address the issue. Imaginative use of these initiatives can enable assured protective irrigation for less water intensive crops in the rainfed regions.

Soil Nutrient Management

The second major input that is needed is the preservation of soil fertility and nutrition management. Soil is the basic natural resource that supports life on earth. Millions of small organisms live in healthy soil which is rich in organic matter. A living soil ecosystem nurtures and nourishes plants by providing a healthy medium to take roots and through a steady supply of nutrients. Indiscriminate use of synthetic chemical fertilizers can seriously disturb the natural soil ecosystem. Chemical fertilizers are highly subsidized in India and the amount of fertilizer subsidy has grown exponentially during the last three decades from a mere Rs. 60 crore in 1976-77 to an astronomical Rs. 61,264 crore in 2009-10 and is likely to exceed the budgeted subsidy of Rs. 58,000 crore in 2010-11. Such heavy subsidies often encourage an imbalance in soil nutrition. Although there is still a need to increase fertiliser use in many parts of the country, the overuse of chemical fertilizers in many other areas has resulted in severe degradation of soils. Since synthetic chemical fertilizer use is conditional upon assured availability of water, the water constraint in rainfed areas demands exploring alternative ways of enhancing soil fertility.

The ongoing change in the subsidy regime to nutrient-based subsidy (NBS) and deregulation of retail price must be completed soon to improve nutrient uptake efficiency and minimize waste and contamination of groundwater and water bodies. Application of customized mixtures and slow release forms of fertilizer, combined with micro-biological cultures, will have the threefold effect of (a) improving the efficiency of fertilizer use and therefore, of the large subsidies involved, (b) preventing contamination of ground water and (c) improving the nutritional status of the soil by working in a complementary manner with the natural eco-system of the soil.

Existing policy needs to be improved by incorporating best practices of soil fertility management. These include:

- Adoption of a farming systems approach with livestock and commons as an integral component of the farm;
- Generation of biomass for bulk addition of organic matter in the soil to maintain proper soil health. We should educate the farmers not to burn standing crop residue but to plough it into the soil;
- In situ degeneration of biomass through sole cropping/inter-cropping/bund cropping of green manure crops;
- Recycling of farm and household waste through use of intensive nutrient recycling methods such as composting, including the use of vermiculture;
- Producing and encouraging use of bio-fertilizers at regional and local levels, along with adoption of bio-dynamic farming methods;
- Crop rotations to enrich soil (e.g. to include pulses and leguminous crops). Multiple cropping which enriches soil should be encouraged instead of mono-cropping;
- Pooling existing soil testing data into a System of Soil Nutrition Management (SSNM), which will enable better-informed soil nutrition management and quality extension work; and
- Integration of the activities of Indian Council of Agricultural Research (ICAR) institutions,
- State Governments, fertilizer and seed companies and other agencies to generate synergy.

New Technologies for the Farm Sector

Technology is the main prime mover of productivity in agriculture where natural resources are fixed. Studies have shown that at least one-third of the future growth in productivity should come through innovations in crop technologies. Public sector technology generation often fails to take into account farmers' needs, perceptions and location-specific conditions for each crop, leading to significant gaps between the varieties released by public sector institutions and the number of varieties actually used by the farmers. Private sector research and the seed industry often focus on those crops and varieties which have adequate scale (massive markets) and scope (repeated sales). As a result, some crops/crop groups get little research attention. This phenomenon is most visible in predominantly rainfed crops like pulses and some oilseeds, which are in urgent need of a technological breakthrough. For instance, per capita net availability of pulses has remained stagnant at the level of around 40 grams per day since early 1990s, indicating very slow growth of production and yield. India imports a very significant proportion of its requirement of edible oil. Significant breakthroughs are required to improve production technologies of these predominantly rainfed crop groups. Moreover, since climate change will require coping with increased stress, it is necessary to remain abreast with latest advances in bio-technology and make full use of marker-assisted breeding methods. An acceptable set of protocols and a clearly defined regulatory mechanism are required so that transgenic food crops can be cleared if advantages of doing so vastly outweigh any precautionary misgivings.

Investment in agricultural research and development to bring out new varieties and breeds for a wide range of crops and animal resources is a priority in the farm sector. India's expenditure on agricultural R&D and education is currently about 0.6 per cent of the GDP from agriculture and allied activities and this definitely needs to be raised at least to 1.0 per cent. Technology generation in India is largely undertaken by the public funded National Agricultural Research System (NARS) comprising the ICAR and State Agricultural Universities (SAUs). A worrying feature is that States currently

under-funded SAUs, leading to both shortage of skilled human resources and of location-specific problem solving. Central funding of NARS must therefore involve ways of incentivising adequate State spending. This is particularly so in the case of rainfed agriculture where there is a need for different ways of working in these public research organizations. The shift from mere technology generation to greater understanding of contexts is imperative; with enhanced research on seasonality, location-specific soil-crop-water interactions and linkages with other rural resource demands like drinking water. Successful varietal development for rainfed areas is possible only if decentralized research and information generation are tuned to agroclimatic features at the district and block levels, with participatory research and extensive infrastructure and facilitation of local seed banks. The latter will be a necessity for responsive seed replacement and support in the event of climate variability and change. Increased allocation to research and extension must go hand-in-hand with institutional changes in public sector R&D and in the role mandated for Krishi Vikas Kendras (KVKs).

Extension reforms through the Agricultural Technology Management Agencies (ATMA)

Technology dissemination is currently being augmented by extension reforms through the Agricultural Technology Management Agencies (ATMA) at district level. These attempt to integrate the current extension work within Departments of Agriculture (which are under-staffed and rely on transfer of technology with almost no feed back into research and policy) with KVKs and also active participation of farmer groups, private sector and civil society organizations (CSOs), Special effort needs to be taken to transfer learnings from more successful areas to others so that the ATMA model can live up to its expectations. The ATMA concept needs to be strengthened, although possibly not as a stand-alone scheme. On the development side, extension involves planning and its implementation so that ATMAs are best suited to operate as the domain agency reporting to District Planning Committees. On the technical side, there is need to better integrate into ATMAs the problem-solving capacities of



KVKs and the feed-back loop these offer to SAUs and NARS. The guidelines of RKVY need a re-look so that ATMAs and KVKs can together bring better convergence at the district level and below between planning, research and extension.

Rainfed Agriculture

Within the farming sector, rainfed agriculture is a major constraint in raising overall agricultural growth and bridging regional inequalities. Some 200 million hectares in India constituting 62.0 per cent of the total geographical area of the country fall in this category and represent the geography with the largest concentration of poverty. They span several agro-ecological regions.

Productivity of rainfed agriculture has lagged, causing widespread distress. This is due to inadequate support in terms of soil management, seed availability, provision of water, support price, market access, agricultural research investments, etc. The most visible aspects of this distress are farmer suicides on the one side and the rising tide of left wing extremism on the other. But even at their low land productivity levels, the absolute contribution of rainfed agriculture is by no means small. It accounts for 56.0 per cent of total cropped area, 48.0 per cent of the area under food crops and 68.0 per cent of that under non-food crops. In terms of crop groups, 77.0 per cent of pulses, 66.0 per cent of oilseeds and 45.0 per cent of cereals are grown under rainfed conditions. As estimated by the Technical Committee on Watershed

Programmes in India (2006), even in the best possible scenario of irrigation development, about 40.0 per cent of the additional supply of foodgrains (and even more of oilseeds and animal products) needed to match the future rise in demand will have to come from the rainfed segment of Indian agriculture. 7.26 However, the rise in productivity will not come from a mechanical extension of the water intensive Green Revolution model. A comprehensive policy package needs to be visualized to revitalize rainfed agriculture. This package must be a combination of several locally relevant components, designed to enhance the productivity of rainfed farming, working within

water constraints and to stabilize interand intra-seasonal risk-proofing of rainfed production systems. Since the key to all this is increased local planning, it is heartening to note that agricultural growth during the Eleventh Plan is likely to be higher in rainfed than in irrigated areas, in part because of the incentives and flexibility offered by the architecture of RKVY. Nonetheless, the present situation demands that this framework be extended to encompass more fully livelihoods, agriculture and nutrition in the rural areas of India's dry lands.

The Twelfth Plan must envisage and enable convergence between livelihoods, availability and access to food, ecosystem and human health. Water management plays a key role in achieving a breakthrough in rainfed agriculture and watershed development has been a major support enabled by the state through its own schemes and in partnerships with several private and voluntary sector organizations. However, the kind of transformation sought in agriculture and food security is possible only with greater attention to other components of rainfed farming, with substantial investment and policy support. This will require an increase in resources to put in place necessary supporting infrastructure. It is however worth keeping in mind that rainfed areas produce the current levels of foodgrains, pulses, oilseeds, with a mere 6.0-8.0 per cent of the expense of national (irrigation, fuel and fertilizer) agricultural subsidies. The National Rainfed Areas Authority which was set up as an expert advisory body to aid convergence between activities of different departments has so far met with limited success. It is now attached to the Planning Commission, which may improve its influence at State and lower levels, particularly if steps are taken to widen its footprint by having regional centres that help to co-ordinate expertise with NARS and Civil Society for better implementation of the Plan activities in the rainfed areas.

Policy should encourage the production and consumption of millets which is a rich source of nutrition, and has been a part of the traditional diets of communities in many parts of India. Emphasis on local production and local procurement/purchase of millets should be linked to both the ICDS and Mid Day Meal programmes in such regions.



Initiatives taken for nutritional security through Intensive Millet Promotion needs to be sustained.

Seed Systems

Seeds are a critical input for long-term sustained growth of agriculture. Timely availability of certified quality seeds with good yield potential continues to be a major problem. In India, more than four-fifths of farmers rely on farm-saved seeds leading to a low seed replacement rate. Concerted efforts are essential in ensuring timely availability of seeds as well as increasing the Seed Replacement Rate (SRR). The National Mission on Seeds has been formulated with a view to upgrade the quality of farm saved seeds and also to enhance SRR. There is also a need to look for synergies with the private sector so that goals set out in the mission are achieved. The responsibility of ensuring adequate seed availability to the farmers lies with the agencies involved in making available certified seeds from the breeder seeds. Since the private sector has emerged as the major source for hybrid seed and other planting material especially in the high value segments, it is necessary to comprehensively review the structure of subsidies and certification in the seed chain so that farmers have better choice and quicker access without diluting regulatory standards.

Rainfed areas are vulnerable to high climatic risks and the seed systems have to be oriented towards meeting shortages on account of this risk. In rainfed areas, wastage of seeds due to prolonged dry monsoon spells immediately after sowing is a very common occurrence. In such a situation maintaining seed diversity is important from the point of view of reducing rainfall risks. There has to be an assured availability of a second batch of seeds for repeat sowing, if the first sowing fails. In cases of prolonged dry spells, the local seed systems must be capable of providing seeds of contingency or alternative crops. Fodder seeds are always a scarce resource which local seed systems could produce and supply.

A programme of seed banks in villages could ensure that a range of seed material is maintained.

A possible method of doing this is through creation of community level seed banks with buffer stocks of seed material for various crops. These can be designed to cover a specified village/area, depending on the extent of purchased seed and the rate of seed replacement. These seed banks should be considered as a necessary common infrastructure for rainfed farms supported by the government on a regular basis. Over time, these seed centres may become autonomous and self-reliant.

Promotion of IPM/NPM Practices and SRI

Successful adoption of NPM (Non-Pesticidal Management) and SRI (System of Rice Intensification) in several rainfed and irrigated cropping systems in the past decade, has led to increased policy and research attention to these systems. While some state governments, Andhra Pradesh, Tamil Nadu, Bihar and Orissa have been particularly attentive to increased adoption of these productivity enhancing, cost-effective and eco-friendly production practices, a nation-wide support for such knowledge-intensive (as opposed to input-intensive) alternatives that are ideal for rainfed areas, is still missing. 7.33 Use of chemical pesticides in India jumped from 154 tonnes in 1954 to about 90,000 tonnes in 2008 at an average of 0.5 kg/ha. The use of pesticides is high in a few states such as Andhra Pradesh, Karnataka, Maharashtra, Gujarat and Punjab (accounting for nearly 40.0 per cent of total pesticide use in the country). The liberal and continual use of pesticides has disturbing consequences on the farming system, particularly due to the development of resistance, resurgence of insect pests and decline in population of the natural enemies of pests. Several organic and bio-pesticides have been shown to be more effective in managing crops in an environmentally sustainable manner. However, there is the need to substantially step up investments in research and technology development in such options, enable local access to expertise on pest-host interactions, and access to quality products for pest management. These options could also be based on locally available resources, which



will go a long way in reducing the cost of cultivation in farming. The agricultural research system could conduct multi-location field trials in different crops to identify crop-and location-specific methods of Integrated Pest Management (IPM) and Non-Pesticidal Management (NPM), in a participatory research framework.

Land and Tenancy Reforms

Legislation regarding ceiling on land ownership has not had the impact to the extent that was envisaged because redistribution of land declared surplus is being held-up on account of litigation. There beneficiaries and there have been many benami transactions which together serve to defeat the purpose of the legislation. Issues of land rights are also a major problem in the case of land on which tribal people have had customary use. In the Twelfth Plan, effort must be made to deal constructively and effectively with these outstanding matters.

At the same time, there is need to give a fresh look at tenancy legislations. These need to permit leasing of land where small farmers, who would otherwise be unviable, are able to lease out their lands to others and bring in the inputs that are needed to increase productivity. The small or marginal land owner may even be employed on the land by the new tenant farmer. There is also need to record small and marginal tenants so that they can access credit without threatening future rights of the land owner. The key to both these is that leasing should be possible without jeopardizing the property rights of the original land owner.

Livestock and Fisheries

Dairy farming has led to the opening up of new income opportunities for rural households and is an important instrument which provides the opportunity to not only fight poverty but also improve the nutritional intake of rural families. While the dairy industry has done reasonably well in the past, there is considerable scope to improve its potential. Inadequate fodder availability, poor access to cattle health centres and low yields associated with inadequate progeny standards are constraints that need to be

tackled. During the Twelfth Plan, the dairy sector will be strengthened under the proposed National Dairy Plan. This should supplement efforts of Animal Husbandry Departments in areas of progeny tested semen for artificial insemination and expansion of fodder availability through innovative means. Simultaneously, facilities of animal health centres need to be upgraded and the disease control systems made more effective on the veterinary side. Similarly, in the area of fishing, there is need to clearly define the role of Fishery Departments and the National Fishery Development Board, with the former concentrating more on policy and fishers' welfare while development activities are increasingly taken over by the latter. 7.37 In the drylands and mountain ecosystems, livestock contribute anywhere between 50.0 to 75.0 per cent of total household income of the rural population. Support to these massive and highly diverse livestock populations in these regions is lacking. A comprehensive programme is necessary that specifically raises the capability of the rural poor to conserve and manage their livestock and fisheries resources, and enables them to derive sustainable incomes from these resources. The programme should focus on the dependence of rural poor on small ruminants like goats, pigs and promote a range of fodder options for them. Decentralisation and convergence of policy support for these options is crucial for diversification of livelihoods in small-holder farming.

Linking Small Producers with Markets

Small and marginal farmers now constitute over 80.0 per cent of farming households in India. They have only very small quantities of marketable surplus. Moreover, their staying power is low because of their extreme poverty. As a result, these farmers sell off most of their produce in the local markets at very low prices immediately after the harvest. Thus, farmers suffer even in years of a good harvest, since they are not able to get good price realization. The obvious solution is for these farmers to aggregate their produce and reach bigger markets where they can get a better price for their produce. This was the original idea behind Marketing Co-operatives but these have delivered effectively only in a few cases. Alternative models based on the idea of

Producers' Companies and Commodity Interest Groups are now beginning to take off. Moreover, with the growth in the Self-Help Group (SHG) movement and development of SHG Federations across the country under the NRLM, options for crop produce aggregation and collective marketing are widening. Banks could fund this activity, with the use of liquid instruments like warehouse receipts. The idea is to collect the produce of the members of the co-operative, producer companies or SHG federations, aggregate the produce, put it in the local warehouses and borrow from the banks against the warehouse receipts. The system of warehouse receipts has begun to operate only recently. The institutional structures, including a regulator, are now in place and it is expected that the Twelfth Plan period will see substantial volumes flowing through the system.

As per existing rules, banks provide a credit of up to 75.0 per cent of the value of the produce as a loan to the producer. The Member-driven body (SHG federation, co-operative or Producer Company) can use this money to distribute to its members for their immediate consumption and other needs. When the price in the market goes up, this body repays the bank loan, releases the produce from the warehouse and sells it in the market.

Basic infrastructure in rural areas for storage and marketing of produce needs to be set up to link producers with regularly functioning markets. Small multi-functional units like warehouses, providing value added services for the farming community, should be encouraged. Banks and other financial institutions in villages need to provide the required finance to entrepreneurs in this field. They may also be motivated to extend credit to the setting up of such units if they receive support from the Government; as such activities could be capital intensive. Opportunities for value addition of the aggregated produce should also be considered. District and lower level planning must have a specific component for mapping the requirements of processing value adding infrastructure. The infrastructure should include common storage places for seeds, other inputs and agriculture produce within the village and at the bulking points.

Crop Insurance

Small and marginal farmers, particularly rainfed farmers face partial or total crop losses due to risks associated with farming. Of these some (like the pestilence problem) are under the control of the farmers but risks associated with weather fluctuations are beyond their control. The traditional coping mechanisms of the farmers for addressing these risks are not adequate and their distribution is highly uneven. Crop insurance has come up as an important tool for risk mitigation for small and marginal farmer households in particular. It is well known that only less than 10.0 per cent of the farmers in India are covered with currently prevailing crop insurance products. The key weaknesses of current crop insurance products arise from the nature and distribution of risks associated with farming. For instance, climate risks are often highly spatially correlated and an area-based approach comes up with estimates of huge losses which could be beyond the capacity of the insurer to pay. The long-tailed distribution of risk, with events of high severity occurring at a low frequency, puts the price of conventional crop insurance products beyond the reach of small and marginal farmers.

The principal crop insurance scheme is the National Agricultural Insurance Scheme (NAIS) which presently encompasses subsidy on 10.0 per cent of the premium to small and marginal farmers, with the expense on the subsidy being equally shared between Central and State Governments. The scheme is demand driven and although a large number of farmers (11.4 million in kharif 2010) availed of this programme (with the total sum insured being Rs. 25,500 crore), the fact is that not enough farmers are availing of this scheme. The reasons are believed to be a combination of lower subsidy, delayed claim settlement, lack of basis in 50 districts covering most States. This has a slightly different design, including higher subsidy and accelerated settlement. The MNAIS scheme is yet to be rolled out in the rest of the country.

All these point to the need for innovative insurance products such as weather-based crop insurance which is based on a deficit rainfall approach. Since rainfall is an objective parameter measured independent of the insurer as well as the clients, the

moral hazard associated with conventional products does not exist here. Effectiveness of the product largely depends on synchronizing the policy initiation date and the sowing date and in calculating compensation based on actual rainfall in each village. We need to increase the density of rain gauge stations to get good insurance products capable of offering customized services at a village scale. We must also remember that crop insurance as a risk mitigation measure is effective only in combination with risk reduction measures like soil and water conservation, use of seed varieties with good yield potential, adoption of sustainable agricultural practices, inter-cropping and diversification of cropping pattern. Hence, the pre-requisites for good crop insurance models are:

- Research to evolve location specific insurance products;
- Capacity building of various stakeholders like farmers' organizations, SHGs, co-operatives, producer companies, banks and insurance companies to offer viable and robust crop insurance products;
- Insurance education for the small and marginal farmers;
- Investment in infrastructure like automatic rain gauges and data collection systems;
- Favourable regulatory environment for various insurance delivery institutional mechanisms; and
- Adoption of a comprehensive agricultural package for reducing risk associated with farming, especially in rainfed areas.

Improving Marketing and Logistics

Road connectivity, development of horticulture, dairying & other animal husbandry and expansion of cash crops, provide the necessary wherewithal for greater market access of the farm sector. This is particularly important for the segment of 'high value' agriculture, where demand pressures are going to be most intense in the coming years, and major investments will be needed in the development of efficient value chains to save on high wastages and intermediation costs. This is logically the domain of

the private sector, but significant reform in the institutional set up is necessary for such investments and capacities to be realized. Unless this part of the chain is modernised and private investment drawn into it, the intermediation process for farm products, especially perishable products, will remain antiquated with considerable wastage, low net realization to the farmers and high consumer prices.

The inadequate facilities for storage of products also results in considerable seasonal fluctuations in the price of products. There is a great imperative to modernize the logistics of farm produce and achieve the same through a combination of favourable policy and private investment and initiative. The necessary steps include:

- Prioritise reform of APMC Acts to allow private sector markets and contract farming. If full amendments to the APMC legislation are hard to achieve, we should at least free perishable products from regulatory provisions so that a national market can emerge for these. While a few State Governments have gone a significant distance by amending the APMC legislation, more State Governments seem to be adopting an ambiguous position. While accepting the need for reform they are hesitating to move decisively forward on this issue. This was an important item in the 2007 NDC resolution that is yet to be implemented fully.
- Encourage involvement of private investment, including corporate retail, either directly or through contractual arrangements, in cold-chain and food processing activities.
- Strengthen rural electric power distribution, such that modern storage and processing facilities can become technically viable in these areas.
- Ensure last mile connectivity, so that private investment can be more forthcoming across the nation. Encourage corporate retail to tie-up with local aggregators, whether these are Co-operatives, Producer Companies, SHG Federations, or rural entrepreneurs.

Common Pool Resources

Common pool resources (CPRs) or 'commons' play a key role in household food security in many parts of the country. These are characterized by rainfed agriculture and

mixed farming systems. Several studies have shown that in rainfed regions, the subsidy derived from CPRs form a critical contribution to both livestock and agricultural production systems. The commons-livestock-agriculture interface is the foundation from which multiple production systems of rainfed areas derive their resilience. NSSO 54th Round estimated that the share of common pool land resources in the total geographical area of the country was around 15.0 per cent. Chopra and Gulati (2001) have re-classified India's Agricultural Land Use Statistics data for 1991 to estimate the extent of common pool resources in 16 major states. Adopting this methodology, they estimate that the share of common pool land resources is around 26.0 per cent of the total geographical area of the country.

In rainfed regions, the subsidy derived from commons forms a critical contribution to both livestock and agricultural production systems. Hence, we need to strengthen the symbiotic relationship between commons, livestock and agriculture. This calls for a shift in orientation towards viewing commons in a livelihood framework as an essential part of the survival strategies of farming households. The critical role that commons play in livelihood security in rainfed regions should inform the current ongoing discussion on the 'productive use' of the commons.

For revitalizing the commons and strengthening the production systems of rainfed areas, the following measures need to be adopted:

- Formulating a 'Commons Policy' with emphasis on security of tenure to the user community;
- Initiating a community-led process of recording claims, verification and consolidation of community rights on common lands and to get such rights recorded in Record of Rights at Gram Panchayat level;
- Devolving management and use rights of commons to village/habitation institutions as part of the decentralization process;

- Stepping up public investments (to the extent of Rs 20,000 per hectare) for revitalising common land and water resources; a large proportion of these investments can be met through convergence with MGNREGA;
- Developing a programme architecture at district and at sub-district level aligning interventions on CPRs within the larger natural resource management programmes;
- Constituting an overarching planning and regulating authority at the district level where sectoral plans on agriculture, water, forests, industry and infrastructure are nested; and creating a robust database on common land and water resources as a decision-support to sustainable use of CPRs.

Expected Output

The combined outcome of the above listed initiatives should result in significant increase in farmers' incomes and in food production both in terms of quantity, quality and range. In the backdrop of the price trends in the international food markets, it would be prudent to plan not only for self-sufficiency in basic food production, but also to maintain a surplus. This surplus can contribute to meeting critical food shortfalls in the neighbouring countries of the region and may strengthen a peaceful climate in the region. In the case of fruits and vegetables, milk eggs, meat and fish and also of pulses, there is a need to ensure that output grows at a rate significantly faster than that of cereals so as to service the expanded demand in these areas. Overall, during the Twelfth Plan period annual output growth of about 1.8 to 2 per cent is envisaged for cereals with rice output likely to grow by around 2 per cent. The output growth rate for pulses will have to be stepped up. Thus, the overall foodgrain output is expected to be around 2.0 per cent or slightly higher. Horticulture and animal husbandry products are expected to register output growth of 4.5 to 6.0 per cent, while that of oilseeds are expected to exceed 3.0 per cent. Overall, that would give an output growth of between 4.0 and 4.5 per cent in the sector. 7.50 The expanded output of the rural sector is expected to impact rural livelihoods in the following way.

- Higher productivity in farming
- Higher value for farming especially in horticulture, dairying and animal husbandry



- Expansion of scope for supportive services which include rental for farm equipment and fees for providing mechanized services such as tilling, sowing and harvesting.
- Major expansion of post-harvest activities, including storage and processing
- Expansion of services that relate to equipment maintenance and transportation
- Encouraging the establishment of small and medium sized agro-based industries
- Expanding the scope for non-agro based small and medium industries wherever it may be feasible.

At another level, the output should be reflected in greatly improved health and nutritional outcome. This would not only be a result of higher rural incomes, but also the availability of more locally produced nutrition, as well as intensive monitoring and effective intervention through government programmes.

Finally, the result of these initiatives should be seen in improved schooling outcomes, as well as much greater dissemination of employment related skills. In order to provide all the inputs that have been discussed above, the instruments for public intervention must be both comprehensive in terms of touching all available institutional arrangements and also participatory.

1.8. Dovetailing strengths of T & V System in ATMA

The delivery of extension services under the T&V System was through the Village Extension Worker (VEW), who was the most important link at the field level. The T&V System had adequate staff for the purpose from district to village level. However, the extension system is currently facing several manpower constraints-

- i. Shortage of public extension functionaries.
- ii. Need for continuous upgrading of their knowledge and skill.
- iii. They are also engaged in several other official activities.

With a view to building upon the existing extension system, it is essential that available public extension functionaries are fully utilized in the delivery of extension

services. Their knowledge and skills may be upgraded on a continuous basis through training and other capacity building initiatives.

The revitalized extension system must have a mechanism to provide training and capacity building support to extension functionaries belonging to both governmental and non-governmental sectors. The Strategic Research and Extension Plans (SREPs) prepared by district ATMA through bottom up participatory processes provide an excellent base for identifying training needs of extension functionaries and technological needs of farmers in the district. At present the concept of SMSs is institutionalized in the form of Krishi Vigyan Kendra (KVK) with multi - disciplinary team of scientists at district level in almost all the districts in the country. The State Agriculture Universities and ICAR institutions provide an impressive network of institutions having the requisite knowledge base. The SAUs/KVKs and ICAR institutions are to be involved in providing holistic institutional training to extension functionaries belonging to both governmental and non-governmental sectors.

The main form of extension support under the T&V System was contact between VEWs and "Contact Farmers". VEWs had the target of visiting Contact Farmers in villages so that each Contact Farmer was covered at least once in a week or a fortnight depending on the situation.

As recommended by the NCF, the focus of extension support is now required to be on a group of farmers rather than on individual Contact Farmer. Accordingly, Commodity Interest Groups (CIGs) may be promoted to, inter-alia, provide them the 'power of scale'.

The requirement of extension support has since become more complex. It has been observed by the NCF that "seeing and harvesting is believing". Frontline demonstrations are required to be promoted in the field of CIG leaders.

The NCF has also recommended that about 50,000 Farm Schools may be set up. As such, Farm Schools may be set up at Block/Gram Panchayat level to provide season



long extension support to CIG leaders and other farmers. It would include training/interaction at least once in a fortnight.

The CIG leaders in turn would have the responsibility of disseminating information and knowledge to other farmers within the same village or in the neighbouring village.

Exposure Visits and other forms of research-extension-farmer interaction would provide additional extension support.

Some of the other improvements needed over the T&V system are promoting farming systems approach and convergence of activities of allied departments, marketing aspects, focus on rainfed areas and participation of farmers in planning, decision making and implementation of extension activities. The revitalize system needs to address these concerns as well.

The mass media and ICT also need to be harnessed to provide right information to farmers at the right time.

1.9. Summing Up

We have learnt that the changes have been brought in the institutional and operational process to strengthen the public extension system. *If the concept of ATMA is implemented in true spirit it will facilitate the decentralize decision - making to the district level and increase farmer input into programme planning and resource allocation, especially at the block level, and increase accountability to stakeholders. It helps for coordination and integration, so that the programme thrusts such as Farming System Innovations, Farmer Organizations, Technology gaps and Natural Resource Management can be more effectively and efficiently implemented.*





Unit-2

Strategic Research and Extension Plan (SREP)

Structure

- 2.0. Objectives
- 2.1. Introduction
- 2.2. Strategic Research and Extension Plan (SREP)
- 2.3. What is strategic planning
- 2.4. Why strategic planning
- 2.5. Scope of strategic planning
- 2.6. Concerns of strategic planning
- 2.7. Need for strategic planning in agricultural development
- 2.8. The Contents of SREP
- 2.9. How to Develop SREP
- 2.10. Operationalisation of SREP
- 2.11. Summing Up

2.0. Objectives

After going through this unit, you will be in a position to

- Understand the need and importance of Strategic Research and Extension Plan (SREP)
- Learn the steps and process of developing the SREP
- Operationalize SREP

2.1. Introduction

Agricultural Technology Management Agency (ATMA) is mandated to develop a demand driven, situation specific, multi-actor oriented Strategic Research and Extension

Plan (SREP) to accelerate agricultural development in the district. The SREP is the process of identifying research and extension gaps in agriculture and allied sectors. It suggests an appropriate strategic plan for agricultural development of the district.

2.2. Strategic Research and Extension Plan(SREP)

During the last decade a number of management tools have been developed which are helpful in facilitating stakeholders involvement in an effective manner. Based upon these tools, a participatory methodology has been worked out for preparing SREP at the district level.

The ultimate objective of both research and extension system is to increase agricultural production. Formulating extension and research agenda based on producers' requirement results in technology that will be more acceptable to users. This also helps in allocation of resources to both extension and research activities to be taken up in the district. Therefore, the Strategic Research and Extension Plan (SREP) for each district is the need of the hour to address specific problems of the farming community, especially resource poor and other disadvantaged groups.

2.3 What is strategic planning ?

Strategic planning is a management task concerned with the growth and future of an organization. Its job is to ensure that the organization keeps moving in the right direction.

The following are some of the characteristics of strategic planning:

- A process in which the stakeholders of an organization (and others they invite to be associated to) join in strategic thinking and acting to create the best fit between the organization and its environment
- It is planning from outside in and from inside out.
- It gives detailed attention to strengths, weaknesses, opportunities and threats (SWOT) in terms of the organization, its mission, its vision and its environment



- It has to agree to the mission of the organization
- It should be in harmony with the organization's vision that is carefully developed and shared by the stakeholders
- Hopefully, it yields a strategic and implementable plan that constitutes the best fit between the external environment and internal capabilities.

In brief, strategic planning is

- What is intended to be achieved in future?
- How to get there?

It involves fundamental choices about

- Organization's mission or goal to pursue,
- Programme and services to offer to accomplish the goals
- How to mobilize and utilize the needed resources, people, money, expertise and facilities etc.

2.4. Why strategic planning ?

Strategic planning

- Serves as a road map for the organization
- Lends a framework for systematic handling of operational decisions
- Lays down growth objectives of the organization and also provides strategies needed for achieving them
- Ensures the organization remains a prepared organization
- Ensures that the organization takes care of needs of the stakeholders
- Ensures best utilization of the organizations' resources
- Serves as a coping mechanism against uncertainty arising from environmental change
- Helps the organization to understand trends in advance and provides the benefit of a lead-time for taking crucial decisions and actions.
- Helps avoid haphazard response to environment

- Provides the best possible fit between the organization and the external environment.
- Helps build competitive advantages and core competencies
- Draws from both intuition and logic
- Prepares the organization to not only face the future, but even shape the future in its favour

2.5. Scope of Strategic Planning

- To be strategically alert
- To be future oriented
- To be able to take risks in tapping opportunities
- To be insulated against environmental threats
- To develop the competence for assimilating changes faster
- To respond effectively and more economically
- To bring convergence
- To be able to generate large resources
- To gain expertise in technology, extension and market support systems

2.6 Concerns of strategic planning

- Future – long-term dynamics is its concern; not day-today task
- Growth - direction, extent, pace and timing of growth
- Environment - the fit between the organization and its environment
- Strategy – strategy is its concern; not the operational activities
- Integration – integration is its concern; not a particular function
- Creating core competencies / competitive advantages creating long-term, sustainable, organizational capacity is its concern

2.7 Need for strategic planning in agricultural development

The present mechanism of planning and implementation of agriculture and allied development programmes is centralized in nature. This top down approach focuses on individual commodities / enterprises rather than on a holistic / integrated approach. It is ad-hoc in nature and does not involve all actors. The farmers are considered as receivers of benefits rather than as responsible partners who can influence the production process. To address the aforementioned issues, under “Extension Reforms Scheme”, ATMA of each district is required to develop a Strategic Research and Extension Plan (SREP) by involving all stakeholders.

The development and use of SREP would help in the following aspects:

- Get an overview of the prevailing scenario in the district
- Explore and understand the problems and opportunities in different farming systems, preference and priorities of the farming community
- Facilitate long-term visioning and strategic planning for agricultural development in the district in a concerted manner
- Facilitate involvement of all actors at different levels in the development process and, in the long run, share the load on the public extension system
- Facilitate integration of and redesigning the on-going developmental programmes for the benefit of the farmers
- Development of annual action plans for each block in respect of the prevailing Agro-Ecological Situation
- Develop farmer centered, market oriented, extension-research management system

2.8. The Contents of SREP

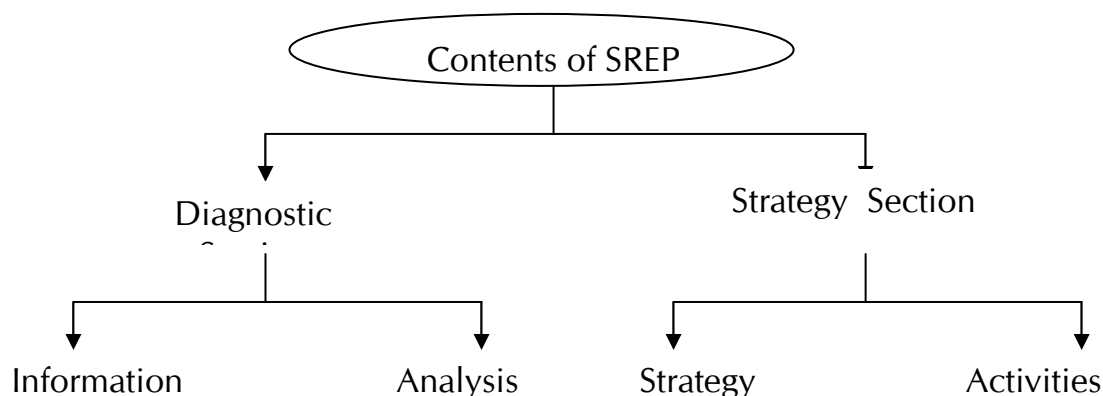
The extension and research interventions would differ across the Agro-Ecological Zone (AEZ) as per prevailing Agro-Ecological Situations (AESs) between crops, livestock, and farming systems as affected by roads, markets, input supply outlets,

service facilities, and between farm households as a reflection of their resource endowment and socio-economic status.

Therefore, in formulating a SREP, the following guiding principles should be kept in view.

- Identify and build on important farming system innovations or success stories that may intensify or diversify existing farming systems and, thereby, increase farm household income
- Increase farmers access to markets, technologies and, resources through farmers' groups and organizations
- On-farm collaborative technology development, testing and refinement to address serious technological gaps in the existing farming systems
- Promote appropriate natural resource management (NRM) plan for building and maintaining the sustainable production systems within each AES.

The SREP will have two sections; and each section will have two subsections as under:



Diagnostic Section:

Information sub-section (For the District)

- **General features:** Geographical area, number of sub-divisions, blocks, gram panchayat, villages etc in the district. It may be supported with a map showing



the boundaries of blocks with major cities, towns, roads, railway lines etc. River streams maps, floods, droughts, Natural calamities-Frequency & periodicity of occurrence (Source- Dist. Statistical Hand Book, Bureau of Econ. & Statistics)

- **Agro-climatic information:** Rainfall (quantity and distribution pattern), temperature and relative humidity etc. (Source- Dist. Office)
- **Agro-ecological situations:** Agro-eco Zones, Agro-ecological situations, features, area and percentage with maps, Weather information related to crop production, (Source- SAU , NBSS & LUP, Nagpur)
- **Demographic data:** Population of male, female and children, breakup of caste, literacy, age groups, Total No. of households, Farm size based classification into Landless; Marginal; small; Medium; Large, (Source - Dist Statistical Officer, Line Depts., Revenue records, and Census)
- **Information on land based systems:** Agricultural, Horticultural, Fisheries, Animal resources etc. in respect of area, production, productivity, seed, farm mechanization, fertilizer consumption trends etc Post-harvest losses, Organic manures used , Organic produce, medicinal and Aromatic Minor Forest Produce etc. in the district. (Source- Dist. Offices, SAU's, Other Institutions)
- **Infrastructure Facilities:** Physical resources like offices, farms, factories, nurseries, veterinary hospitals, research stations, training institutes , staffing pattern with qualification and major roles, Soil testing labs, Aqua culture labs, Diagnostic labs, hatcheries, IPM - Service Providers, Agri- clinics & agro-service centers, Soil Health and Water quality, food products and quality control labs etc. (Source- Dist. Offices, SAU's, Other Institutions)

Land (Soil/ Water/ Vegetation):

Soil: 1. Extent and severity of soil erosion (Mild / severe / very severe); 2. Problem Soils (Extent & Severity): Saline / Alkaline / Sodic soils; Diara land; Tal land; Affected by meandering rivers; 3. Current Fallows - Time series data & reasons for the area remaining fallow; 4. Permanent Fallows (Source: Revenue Records, or Bureau of Economic Statistics); 5. Soil Types (Texture, structure & depth): Sandy, Sandy loam, Loamy sands, Loams, Clay loam, Clay.

Water: Exploitation of Ground Water, Time series data (Open well_ / Bore wells, number of tube-wells and its irrigation potential), Present Status of surface water bodies (Tanks / Ponds) and area under their command , present status of catchments and the water body - conversion of tanks to percolation tanks, if any., Back waters where ever applicable, Assured water supply periods and other sources of irrigations. (Source : Ground water Department and M I Departments).

Vegetation: Area under private land use - Public land use (Time series data), Crops and cropping systems including diversification in private land, Grass lands, multi-purpose trees and bio-mass production, Area under Forest (Protected or reserved - Open Forest) (Source: Agriculture Department, Horticulture and Forest Department).

- **Rainfed Areas:** Length of growing period, assured moisture availability period (Source : SAU's)
- **Irrigated area:** All Irrigation sources and area and percentage under each category (block wise / AES wise), sources of irrigation with area and percentage in respect of each source (block wise / AES wise) (with separate maps), irrigation projects nearing completion. Quality of Irrigation water (Salt, Nitrate, Magnesium, Fluoride, Arsenic etc.), Period of assured irrigation through ground water and surface water, Canal water - Potential created and actual irrigated area (Source: Ground Water, M I & Irrigation Departments, Dist. Offices)
- **On-going developmental programmes:** Extension and Research activities of different line departments, ZRSs, KVKs and DRDAs etc with scheme-wise break-up of funds for extension & research development works.
- **Funding :** Total requirements, Funds allotted, Gap / shortfall; Constraints as perceived by ground level workers (Source-Dist. Offices)
- **Information on markets:** Local, panchayat, block, district, regional and national markets that serve the district in respect of crops, fruits and vegetables, livestock and livestock products sericulture and fisheries etc along with quantity of commodities handled, Position of *Shandys* and quantities and qualities of commodities handled



- **Contract farming:** Present contracts existing in the district and their analysis (Source-Dist. Offices)
- **Agro-Processing facilities :** Packing materials, present status and alternatives, Types of Processing Units (Mini Dal Mills, Mini Flour Mills, Mini Rice Mills, Pulp & Plank Mills, aromatic extraction plants etc., Raw material availability for processing industry (Source: Dist. Industry Office) Agro - processing facilities inside and out side the district that caters to the product of the district (number, location, capacity built-in and utilised etc) in respect of each commodity (Source- Dist. Offices)
- **Agri-credit:** Agricultural credit from banks, cooperatives, informal credit sources etc with break up and volume, accessibility to farm households from different resource and socio-economic groups. SHG's: Micro credit, KCC and Gold card Holders, on farm water Management, Defaulter Status, Details of Crop Insurance, Number of farmers availing institutional credit and number of farmers not availing institutional credit. Number of farmers not availing any credit (Sources - Dist. Offices, Lead Bank).
- **Marketing infrastructure :** Storage, cold chains, pack houses, grading etc commodity wise, with number, location, capacity, tariff etc (Source- Dist. Offices)
- **Input and service facilities:** **Available inside and also out side the district that cater to the needs of the district, in respect of different land based enterprises, Custom hiring, Input service providers (Institutional and individual), services of Kisan Mitra & Gopal & any other para-technical services. (Source- Dist. Offices)**
- **Farmers' Groups and Organizations-** Number, purpose, structure, activities undertaken, membership (norms and type), linkages with other organizations, sources of income, Water User Association, SHG's, UG's, CIG's, RMG groups (Male / Female & Mixed) Shepherds,, CBAs (Cattle Breeders Assoc.) sponsored by BAIF Dairy Co-operatives, PACS, LAMPS Recognized NGO's as service providers. (Source- Dist. Offices)
- **Private sector organizations and NGOs:** Private sector organizations and non-governmental organizations engaged in development, extension and research

activities in respect of various land based enterprises, with nature of activity, spread target groups, membership etc. (Source- Dist. Offices)

- **Information and Communication Technology:** Computer, TV and Radio stations, telecommunication and Internet facilities etc Print media, (News Papers, Magazines, Bulletin and Handouts).

Information From Representative villages

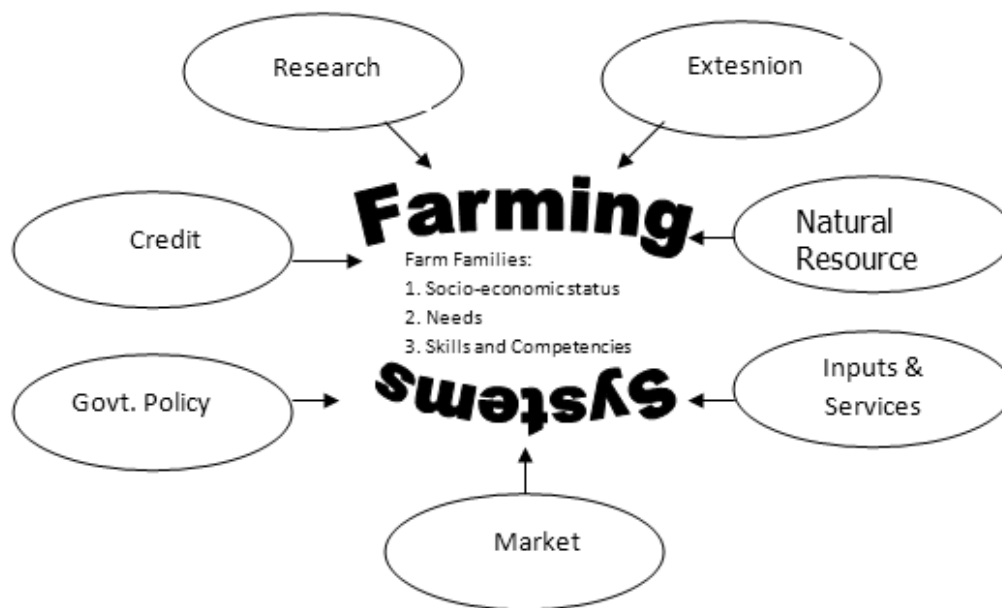
- Geographical Area: Cultivable area, Land under cultivation, Rainfed area, Area under forest, Pasture, Current fallows, Degraded lands, Saline and problematic lands, Common lands, etc. in hectares.
- Population: Male, Female, Children, Literacy, percentage of Male and Female, number of households, number of farm families, number of landless, Shepherds, artisans etc.
- Rainfed and Irrigated Area: Area and percentage under each category, sources of irrigation with area and percentage in respect of each source; Well irrigation (ha); Tube wells (ha); Lift Irrigation (ha), Tank Irrigation (ha), Canal Irrigation (ha), River irrigation (ha) and Jaal lands, irrigation project near completion and potential area covered, etc.
- Number of Farm Households: Size - Small, Marginal, Large, landless, Different farming systems, Components (Enterprises) of farming systems, Cropping pattern (Irrigated and Rainfed), Cropping intensity (Irrigated and Rainfed) Crop wise area production, productivity
- Land and soil: Land utilization statistics (area and percentage) soils, their problems and their distribution with maps. (Source- PRA to be done)
- Farming Systems: Characteristics of the farming community resource situations (operational holdings, farm machinery, draft power, family labor, income, etc. Predominant existing Farming Systems (with combination of enterprises), profit generated from each enterprise (Source- PRA to be done)
- Agro - Processing Facilities: Facilities inside and out side the village that caters to the produce of the village (number, location, capacity built-in and utilized etc) in respect of each commodity. (Source-PRA to be done)



- Information on markets: local, panchayat, block, district, regional and national markets that serve the village in respect of crops, fruits and vegetables, livestock and livestock products sericulture and fisheries etc along with quantity of commodities handled. (Source-PRA to be done)
- Storage facilities: Commodity wise, with number, location, capacity, tariff etc available in the village or near by, that serve the village. (Source-PRA to be done)
- Agricultural credit: From banks, cooperatives, informal credit sources etc with break up and volume, accessibility to farm households from different resource and socio-economic groups. (Source-PRA to be done)
- Input and Service Facilities: Facilities available inside and also out side the village that cater to the needs of the village, in respect of different land based enterprises. Custom hiring, input providers, services of Kisan Mitra and Gopal, para-technical services. (Source-PRA)
- Farmers' groups and organizations: Number, purpose, structure, activities undertaken, membership (norms and type), linkages with other organizations, sources of income etc. (Source-PRA to be done)
- Private sector organizations and non-governmental organization: Organizations engaged in development, extension and research activities in respect of various land based enterprises, with nature of activity, spread target groups, membership etc. (Source-PRA to be done)

STRATEGY SECTION

Each identified existing Farming System needs to be analyzed in terms of its interaction with other options of farming systems. The core entity operating the Farming System is the farmer and his family. Farming Systems have evolved over a period of time through a process of farm level experimentation.



Analysis of existing farming systems and enterprises

This covers pattern of ownership, development, and utilization of land and water resources under different farming systems over a period of time under each AES including INM and IPM practices recommended and adopted. This exercise is carried out by the multi-disciplinary team of officers from line departments, scientists from ZRS and KVK in the district (preferably an economist in the team) supported by a trainer.

The influence of resource situations on the existing farming systems:

Thereafter it is necessary to analyze the major existing farming systems under different AES in terms of its productivity and income. Gaps in adoption of improved production technologies vis-à-vis the recommendation in respect of different farming situations of crop/commodity in each enterprise, inter-dependence of different enterprises under varying farming system and resource availability.

It is also, necessary to analyze the on-going research activities in the project district and the past recommendations from the research stations in the light of needs generated for research and the gaps in adoption identified through earlier analysis. The steps for analyzing are as follows:

**Steps for analysis of existing farming system:**

- a) Identify the predominant Farming Systems existing (for resource poor and resource rich) in each AES and carry out economic analysis of different existing farming systems (cost benefit ratio)
- b) Look for an innovative farming system introduced by any individual farmer in the AES (Success Stories)
- c) Look for a farming system recommended and introduced by ZRS or SAU's, and other research Institutions in the AES
- d) Work out the new opportunities and missing enterprises in each of the existing farming system (System has to be re-looked for its diversification or intensification to increase overall returns by optimum use of available resources. ******(SWOT-analysis)
- e) Presenting Basket of Options and take the consent and opinion for its implementation. Use matrix ranking to identify the best fit option for AES
- f) The Comparison of the existing farming system vis-a-vis the suggested farming system will provide the gaps and the strategies to be planned.

**** SWOC analysis: (Strengths, Weaknesses, Opportunities, Challenges)**

SWOC analysis is carried out in respect of different Farming Systems, as observed in each AES. SWOC analysis is very useful tool in developing strategies as it helps in identification of -

- Current strengths within existing farming systems and success stories,
- Weaknesses within the existing farming systems,
- Opportunities, which are advantageous for optimal exploitation of the existing farming systems in terms of providing, scope for new market opportunities, new technologies, services etc.
- Real potential threats to the natural resource base, existing farming systems and markets etc.

The identified issues and also the findings of SWOC analysis are to be shared with the farmers to prioritize the issues with commonality of understanding.

Steps for analysis of existing farming situations for each crop / commodity:

- Identify different Farming situations in which a crop or commodity is grown under each enterprise (Based upon factors like *time of sowing, previous crop, source of irrigation, problematic soils etc.*).
- Identify the existing practices (production practices) followed by the farmers
- Collect the recommended practices given by the SAU's or any other research institutions
- Identify the gaps by comparing the existing practices followed by the farmers with recommended practices
- Re-synthesized the technological package with the help of the scientists in the team to refine or modify the recommendations and assess the extent of gap in adoption
- Assess the reasons for Gap in adoptions by probing the farmers and on the basis of reasons for gap in adoption in the production system the strategic issues are identified.

Strategy Formulation:

Strategy sub-section: This section spells out strategies for research and extension for each AES in respect of different program components.

In this sub-section strategies would be developed on the basis of prioritized strategic issues, separately for extension and research. This exercise is to be carried out by the team constituted of line departments, KVK and ZRS scientists in the district along with an economist supported by the trainers. Generally speaking, strategies would be developed on the following categories.

Categories of strategy:

- i. Diversification and intensification of existing farming systems
- ii. Improvement of productivity / income from different enterprises / commodities in exiting farming systems (Sustainability of natural resources and enabling the farming community (male and female) to command the extension system is to be built into these components)



- iii. Sustainability of the production system
- iv. Capacity building of extensionists, researchers, farmers, market players and other partners like NGOs, etc.
- v. Dovetailing and re-designing of various on going schemes of agriculture and other line departments and research institutions in the public, private and NGO sector
- vi. Market led extension for enhancement of profits with focus on post harvest technologies and value addition
- vii. Promotion and use of ICT in extension
- viii. Promotion of Public Private Partnership,
- ix. Mainstreaming Gender concern (Empowerment)
- x. Any other programme component considered necessary for the project / area

Activity Sub-section:

The strategies can be helpful in achieving the goal / objectives of the project only when translated into action. Therefore, it is necessary to spell out different activities under each category of the respective program component. While describing the activities it is desirable to describe the unit and unit cost of each activity and also total number of units (with total cost) that may be necessary to achieve desired results. Subsequently, block level annual action plan has to be prepared by the block technical teams for each AES prevailing in any block basing on activity schedule.

Care should be taken to see that the normal on going type of activities are not undertaken as part of the Block Action Plans under NATP. Rather innovative activities in line with objectives of NATP should form the schedule of activities.

2.9. How to Develop SREP

SREP is to be demand driven while it is in consonance with the prevailing Agro-ecological, socio-economic situations and also the developmental goals of various government departments. This is developed with a bottom-up approach. While it gives

importance to the main clients i.e. the farming community, it does consider the views of the other stakeholders in the agricultural development scenario. Hence, the methodology for developing SREP for any NATP district is different from the method presently in vogue in different line departments of the government in formulating plans and strategies for their activities. The steps for developing SREP are outlined hereunder:

STEPS IN DEVELOPING SREP

STEP - I	Orientation of District Team
Purpose	<ul style="list-style-type: none">• To understand the concepts and principles of Reforms in Extension• To sensitize on operationalisation of SREP in the district
For Whom	<ul style="list-style-type: none">• District heads of agriculture and line departments• Heads of ZRS, KVK , NGOs and other research institutions, FOs and Private players working in the District.
Content	<ul style="list-style-type: none">• Concepts of Reforms in Extension including proposed institutional arrangements• Roles and responsibilities of district heads of line departments, research institutes and other actors• Organization and Management structure - Existing and expected under Reforms in Extension• Need for SREP• What is SREP - How it is different from regular plan• Contents of SREP• Collection of appropriate Secondary data at the district in the given formats.• Maps: Relevant maps to be collected• How to develop SREP
By Whom	<ul style="list-style-type: none">• SAMETI of concerned State
Duration	<ul style="list-style-type: none">• 3 days



STEP - II Identification of Agro-eco-situations (AES) within the district

Purpose

- For location specific planning
- Selection of representative villages for primary data collection
- To carry out the survey in representative villages by following participatory approaches

Activities

- Contact / check with ZRS/SAU for AES information
- If AES have not been identified by SAU under NARP earlier, then identify AES in consultation with the scientists of ZRS / SAU
- Appraise District heads about AES, Planning on the basis of AES
- Develop a block wise and AES wise map of the district
- Find the spread (area & percentage) of each AES in each block
- Select representative villages in each AES
- Informing villagers and making arrangements for survey, interaction and field visit

Criteria for selection of villages

- AES having substantial spread, (area in more than one block) representative village have to be selected from any one of these blocks.
- If one block has more than one AES, then representative village has to be selected for the AES having maximum area
- Representative villages should be selected on the basis of - size, accessibility, availability of different farming systems of that AES, diversity in socio-economic resource situations and farmers' cooperation

Constitution of AES Team

- Select at least one member from each major discipline for each AES from the officers working in respective blocks
- Block level officers are responsible for carrying out the participatory data collection
- Representation of women, research scientists and NGOs in each team
- Notification about constitution of team by the District Collector

By Whom

- SREP Team of the District

Duration

- 3 days

STEP - III Training of AES team

Purpose • To enable AES team members to carry out survey for collection of data and information in a participatory manner for preparation of SREP

Trainees • AES team members

Content • Concepts and Principles of Reforms in Extension
• Participatory tools / techniques (PRA, FSA, FSBE etc.)
• Sustainability issues - IPM, INM, SRM, NRM, ITK, etc
• Marketing and processing information
• Identification of success stories
• Checklist / format for collection of data and information (primary and secondary)

Activity • Designing training frame work
• Finalization of dates and venue and informing the trainees
• Finalization of trainers and informing the dates and venue
• Finalizing the arrangements of logistic (lodging, boarding, training facilities, transport etc)
• Arrangement of training material, aids etc.,

By Whom • SAMETI Facilitators

Duration • 1 week (7 days)

STEP-IV Data collection through participatory approaches

Purpose • To assess and document farmers, needs, perceptions, priorities and problems
• To collect primary data using PRA, Semi Structured Interviews, Focused Group Discussions and formats to develop strategic research and extension plan (SREP) based



on farming systems approach

- To find out factors influencing sustainability
- To identify and document success stories/ case studies
- To study the socio-economic status of the community so as to organize themselves for empowering them to have command over future extension system
- To study existing support and service facilities
- AES team members,

By Whom

Material required

Activity

- Checklist, formats and PRA material
- Informing the villagers about the field visits in advance
- Planning for field exercises - 1 day
- Visit to village for collection of information by using participatory methodology - 3 days
- Review and sharing of collected information and planning for second visit by AES Team at a common place - 2 days
- Second visit to the villages (2 days) for
 - Collection of missing data and information
 - Discussion regarding possible options / solutions / mechanism to overcome problems.
- Consolidation, sharing data / information and presentation to district level team - 2 days

Duration

- 10 days

STEP-V Data analysis, identification and prioritization of research and Extension issues

Purpose

- To find out the relevance of collected data / information with the scope of SREP
- Compare primary data with secondary data to identify critical issues, problems, needs, opportunities, threats / risks
- Analyze the data for identification and to prioritize issues

- Sharing the outcome with farmers for confirmation, prioritization and further suggestions
- By Whom**
- AES team and facilitators and an economist
- Activities**
- Cross checking of collected primary data with secondary data
 - Checking the information with objectives and requirements
 - SWOT analysis of farming systems under each AES to:
 - Identify current strengths within existing farming systems
 - Identify weaknesses within existing farming systems
 - Identify opportunities for optimal utilization of resources
 - Identify possible threats to natural resources, markets and farming system
 - Identification of strategic issues on extension and research
 - Share the information with the villagers
 - Prioritize extension and research issues with reference to the problems, needs etc. with the villagers and then jointly develop an agreed basis for strategy
- Facilitation**
- SAMETI facilitators
- Duration**
- 10 days
- STEP-VI** **Developing strategies for research and extension issues in the district**
- Purpose**
- To redesign the existing development, extension and research programmes and operational mechanism through innovative ways for increasing income of farming community by bringing in changes in the existing farming systems.
 - To make use of farming system innovations and success stories in planning for intensification and or diversification of existing farming systems to increase farm house hold income
 - To exploit scope for organizing farmers into interest groups to empower them to have access to technologies, resources and markets
 - To address serious technological gaps to increase production and productivity of and income from existing farming systems



- To suggest measures for natural resources management on sustainable basis
 - To suggest direction for development
 - To involve all actors in the participatory process for development
- By Whom**
- District team with an agricultural economist, NGOs etc.
 - AES teams
 - Facilitator

Activities

Develop an outline / frame work for SREP on the basis of project thrust areas such as -

- Intensification and diversification of existing farming systems
- Improvement in production, productivity and income of different commodities within existing farming systems.
- Develop strategies to address these issues
(Strategies for research and extension should be separate and complementary to each other)
- Develop strategy for sustainability of the participatory extension system in the long run
- Strategy for involvement of private sector and NGOs into research, extension and development system
- Strategies for Capacity Building to operationalize the project
- Strategies for promotion and use of ICT.
- Strategies for empowering the community by promoting men and women organizations and their capacity building
- Strategies to promote linkage with marketing and agro processing units.
- Strategies for enhancement of profits with focus on post harvest technologies and value addition.
- Strategies for promotion of public-private partnership.
- Strategies for mainstreaming of gender concerns.

Facilitation • State facilitators

Duration • 6 days

STEP VII - Developing Activity Schedules

Purpose: To spell out activities necessary to translate strategies into action
To specify the size of units, total units required, cost per unit and total cost in respect of each activity.

By Whom - * District team
* AES team
- * Block functionaries

Activities:

- Suggest activities for implementation of each strategy for research and extension separately
- Logical and sequential arrangement of activities
- Decide size of units and unit cost for each activity
- Decide total number of units and total cost for completing the activity during project period
- Find project cost in respect of research and extension strategies
- Compilation and production of SREP document

(NB:- while working the details of cost the provisions in the on going schemes should be considered)

Facilitation: State facilitators

Duration: 6 days



STEP -VIII: Approval of SREP

Purpose:

- To have approval of the Governing Board of ATMA.
- To build common consensus
- To authenticate SREP as a plan document
- To accept SREP as a basis for agricultural development in the district

By Whom-

- Management Committee, ATMA
- Governing Board, ATMA

Activity:

- Consideration of SREP by Management Committee of ATMA
- Recommendation by M.C. to Governing Board for approval
- Approval by G.B. with changes if necessary
- Production of adequate copies
- Submission of District plan to state nodal officers for compilation and preparation of SEWP to be submitted to Govt. of India for approval

Facilitation- State facilitators

Check List For Each Step In Developing SREP

CHECK LIST for STEP-I - Orientation of District Team

Constitution-

District Head of - Agriculture, Horticulture, Soil conservation, Animal Husbandry, Dairy Development, Fisheries , Sericulture, marketing, forest, irrigation etc.

Scientists of State Agriculture University/ Zonal Research Station and Krishi Vigyan Kendra working in the district.

NGO representatives

Topics-

Concepts of extension reforms, ATMA -its constitution, objectives, functions, Roles and

responsibilities of different actors, Organization and Management patterns – existing and expected under reforms, Strategic Research and Extension Plan (SREP) – What , Why, How to develop and operationalise, content of SREP field visits.

Reading and Training materials -

Manual on SREP guidelines, Reading material on above topics, Rules and Regulations and Memorandum of Association of ATMA

CHECKLIST for STEP II- Identification of AES, Constitution of AES team and logistic arrangement

Factors for Identification of AES

- Altitude
- Soil type
- Rainfall
- Irrigation
- Topography

Criteria for selection of AES team

1. One Team for each AES consisting of representation from different line departments viz., agriculture, horticulture, soil conservation, animal husbandry, fisheries etc. and any other department important in the district
2. Representation from research institutes and KVK for important disciplines
3. Representation from NGOs, one in each team
4. Adequate representation of women in the teams
5. Members should have following abilities / characteristics
 - Ability to listen and communicate effectively especially to farmers
 - Belief in participatory approach
 - Technically competent and sound
 - Capable of and willing to work hard and travel extensively
 - Amicable and open to suggestions
 - Good understanding regarding block and district
 - Capable of perspective and strategic thinking
 - Good probing skills



Logistic arrangements-

1. Locate residential training facilities in the district having lodging boarding, class rooms etc.
2. Vehicles for mobility of teams and trainers during the training and collection of data during village visits
3. Lodging and boarding arrangements for AES teams in and around the representative villages
4. Inform the villagers well ahead of time
5. Provision of training and teaching materials and stationeries

CHECKLIST for STEP-III- Training of AES Teams

Topics -. Extension Reforms - Concepts, Principles, Operational modalities, Participatory tools and techniques- PRA, FSA, FSBE, Identification and analysis of Success Stories, ITK, Sustainability issues, understanding and use of formats and check lists for collection of information and data , Course framework enclosed

Reading and Training materials -

Reading material on each topic, Manual on SREP-Guidelines and brief on extension reforms, Chart paper, Marker pens, OHP transparencies and markers, OHP, TV, VCP,etc.

CHECKLIST for STEP IV: - Data collection through participatory approaches

1. Collection of data and information – primary and secondary
 - Background information of village
 - Information on land, soil, irrigation-
 - Distribution of farm households under different resource situation (No. & % under each) based on;
 - Land holding
 - Irrigation availability
 - Family income
 - Identification of major farming systems
 - Identify 3-4 major farming systems through PRA techniques like - social and resource mapping, focused group discussion etc.
 - Categorize them on the basis of source of income i.e. primary, secondary, tertiary, etc, with number of families and percentage.

- Collect information on the following for future analysis:
- Find out the strengths and weaknesses in the existing farming systems that support or adversely affect the farming systems
- Find out the scope for intensification of the farming system through overcoming problems in production (gaps in adoption), processing, marketing etc of any commodity under an enterprise in the farming system.
- Also find out scope for intensification by strengthening any enterprise through optimal utilization of available resources
- For diversification and intensification of any farming system study the trends in farming systems – changes made since 1970 in the farming systems with causes thereof.
- Switch over in the enterprises
- Addition / deletion of any enterprise / commodity
- Strengthening of any enterprise / commodity within farming system
- Major shift in the enterprises as a source of income (i.e. from primary to secondary & like wise)
- Due to influence of government policy, opening new market avenues, processing, storage, irrigation, communication, and other infrastructure facilities etc leading to intensification and diversification of any farming system.
- Find out scope for replication of success stories for adoption in the farming systems
- Find out the technological gaps in productivity and income from various commodities and enterprises under farming systems
- Consolidate the data and information, share it with other AES teams
- Share it with farmers for verification, modification, if any, and collect missing data and information
- If required, visit any other village under same AES, preferably in same block, to collect data and information on success stories enterprises and / or systems relevant to the concerned AES.
- Maps to be produced (of the representative village)-

(PRA Maps.)

* Social Map * Resource Map * Transect Map * Matrix Ranking

* Seasonality Map * Timeline * Venn Diagram * Any other



CHECKLIST for STEP-V: Data analysis, identification and prioritization of research and extension issues

A. Rechecking of data:

1. Each departmental representative has to make a detailed presentation about their respective sectors to other officers and scientists of the district.
2. Recheck collected data and information with departmental information (secondary data)
3. Check that all the formats are completely filled
4. List out incomplete data and information and also the data or information which does not agree with secondary data, for further collection and verification in the village.
5. Revisit the village for verification of data/information if required.
6. Finalize information and data base for analysis

B. Analysis of data and information:

Conduct SWOT analysis of major farming systems under each AES on the basis of points mentioned in checklist for Step-IV

Find out the possible strategic issues on the basis of outcome of analysis for sharing with the farmers

Visit the village to share and prioritize with the farmers' needs based on strengths, weaknesses,, opportunities and threats which would form the basis for developing the strategy.

CHECKLIST for STEP VI and VII -Developing SREP and Activity Schedule

1. Categorize SWOT analysis report which will be utilized for developing strategies under - a) Diversification and/or b) Intensification of farming systems and c) Improvement in production, productivity and income under different existing farming systems
2. Note separately the points that influence sustainable NRM practices and farmers' organizations
3. Put the information collected from the farmers under the above categories.
4. Develop strategies on the basis of SWOT analysis findings for each category - for research and extension separately.
5. Prioritize the strategies as per demand of the farmers
6. Develop strategies under following groups-

A. Extension

A.1. Which can be implemented by ATMA

A.2. Which needs policy decision / intervention of Government

B. Research

B.1. On farm research, technology refinement and validation to be funded by ATMA

B.2. Basic and other issues to be addressed by SAU & other research institutions

7. Find out requirements for sustainability of the extension system by considering the following issues-
 - a. Cost sharing
 - b. Public-private partnership
 - c. Role clarity of different actors
 - d. Human resource department
 - e. Community organization / farmers' organizations
8. Develop activities required to operationalise the strategies
9. Decide the Unit size which is easy for implementation, and can show appreciable results.
10. Fix the Unit cost for each activities to meet the cost of critical items basing on the prevailing prices

CHECKLIST for STEP-VIII - Production and Approval of SREP

The document should have following chapters

- 1) Introduction
- 2) Methodology
- 3) Background information of the district
- 4) Ongoing extension, development and research activities of departments, organizations, institutions in the district under Public, Private and NGO sectors
- 5) Identification, description and analysis of existing farming systems under each AES
- 6) Proposed extension strategies
- 7) Proposed research strategies
- 8) Schedule of activities for extension strategies
- 9) Schedule of activities for research strategies
- 10) Operational modalities and mechanism

2.10. Operationalisation of SREP

This section deals with the operationalisation of SREP after its approval by Governing Board of ATMA. The document of SREP acts as a template for setting a direction towards research, extension and developmental activities in the district. Further, it facilitates in the delineation of resource allocation across programme areas. Hence, SREP becomes a basic document for the development of work plans at block, district and state level.

Steps involved in Operationalisation of SREP:

Based on the experiences of implementation of SREP in erstwhile ATMA districts under ITD component of NATP, where in the operationalisation process can be categorized into five major areas, namely- Action Planning, Fund Flow Mechanism, Execution of Extension and Research Programmes and Monitoring of Filed Activities.

A. Action Planning:

Action planning as a specific step in operationalising the strategies would be introduced so as to implement them at grass root level. The strategies are long term in nature, where as action plan draws out a systematic approach in realizing these strategies step by step. Though strategies provide the possible future direction, action planning gives an outline of functional attributes in terms of what, when, where, who, (for) whom and how long with financial modalities. The process of Action Planning is as follows:

1. Project Director shall distribute copies of approved SREP to all GB, AMC, BTT and FAC members of the district. SREP is the basic document from which the BAP, DAP and SEWP are prepared and all the stakeholders in preparation of these plans should be thorough with the intricacies of SREP.
2. BTT members shall identify activities of SREP which are relevant to (AESs) their block
3. SREP acts as a guiding force for identifying the activities, however BTT and FAC members shall take the following issues into consideration for preparing BAP

- a) Extension activities identified in SREP;
- b) Group demands as identified by FAC members;
- c) On going schemes for dovetailing;
- d) Success stories identified for replication.

The above four dimensions need to be considered on annual/ seasonal basis in the joint meeting of BTT and FAC at each FIA for preparing the BAP.

4. FAC would approve this plan after incorporating necessary correction considering availability of funds and prioritized research and extension gaps. Convenor of BTT is responsible for sending the approved BAP to ATMA.
5. Project Director, ATMA shall organize AMC meeting and put-up the BAPs from all the blocks for technical scrutiny of their relevance as well as for dovetailing.
6. In the mean while, ATMA would prepare its ATMA level action plan based on the needs and priorities cutting across blocks boundaries and issues emanating out of SREP. However, PD ATMA must refer to the 'Cafeteria of Activities' given in the Xth plan scheme "Support to state extension programmes for Extension Reforms".
7. Once the AMC scrutinize the BAPs and ATMA level action plan, this will form the basis for District Action Plan (DAP). AMC shall prepare this DAP by keeping funds availability in view.
8. Project Director shall organize GB for discussing DAP. GB will prioritize the issues in DAP depending up on the availability of funds and approve the DAP. GB ensure that there shall be equitable fund allocation across the blocks.
9. Project Director, ATMA shall send the approved DAP to State Nodal Officer for preparation of SEWP with the facilitation of SAMETI and release of funds from GOI.

B. Fund flow mechanism

As per the primary document circulated by GOI under X Plan Scheme 'Support to State Extension Programmes for Extension Reforms', based on the SEWP the funds would be placed with an autonomous institute at state level identified by the state for its onward transmission to SAMETI and ATMAs.



1. Once the district receive the funds, the same shall be passed on to each FAC for execution of field programmes. The fund will be placed in a bank account jointly operated by Chairman, FAC and Convener BTT.
2. During monthly or fortnightly meetings conducted at FIACs, BTT members would take advance to carryout the activities identified in BAP. The advance has to be realized immediately after completion of the activities for which it was taken or after 15 days whichever is earlier along with a brief report.
3. Records like Cashbook, Proceedings register, Dead stock register etc. would be maintained at each FIAC by Convener, BTT.

C. Execution of Extension Programmes: Once the funds are received by the Convenor, BTT, the field programmes need to be executed. Extension Programs like Awareness Camps, Exposure Visits, Demonstrations, Trainings etc.,

D. Execution of Research Programs : Researchable issues identified in SREP shall be referred to Zonal Agricultural Research Extension Council (ZAREC) of ZRS or Scientific Advisory Committee (SAC) of KVK. The issues, which have been emerged during SREP, would be categorized into

- a. Long term researchable issues
- b. Short term researchable issues

The long-term issues shall be communicated to SAU, ICAR institutions for redressal. The short-term issues may be addressed with the help of local research institutions such as KVK and/or ZRS preferably through on-farm trials.

E. Monitoring of field activities:

- The block level and village level activities would be monitored on monthly basis at FIAC level. The progress made shall be reviewed during the first week of every month in the joint meeting of BTT and FAC members. The Convener of BTT shall compile the progress reports of all line departments and submit to Project Director, ATMA

- The review of progress of activities at district level should be undertaken by AMC during second week of every month after receipt of progress reports from the blocks GB shall review the progress every quarter
- Joint interaction workshop of GB and FAC should be conducted on quarterly basis under the Chairmanship of Collector to create common thinking platform.
- The monitoring mechanism at state level include submission of quarterly reports, field inspections, workshops etc by Inter- Departmental Working Group (ID WG) convened by State Nodal Officer

2.11. Summing Up

We have understood that Agricultural Technology Management Agency (ATMA) is mandated to develop a demand driven, situation specific, multi-actor oriented Strategic Research and Extension Plan (SREP) to accelerate agricultural development in the district. The SREP is the basic document, which will give a overview of the prevailing scenario in the district, problems, opportunities in different farming systems, preferences and priorities of the farming community, facilitate long term visioning and strategic planning for agricultural development in the district in the concerted manner.



Unit-3

Farming System Approach (FSA)

Structures

- 3.0. Objectives
- 3.1. Introduction
- 3.2 Concept
- 3.3 Definition
- 3.4 Need for Farming System Approach
- 3.5 What it is and What it does
- 3.6 Why Farming System Approach
- 3.7 Farming Systems Strategy
- 3.8 Methodology adopted for grounding the concept of FSA
- 3.9 Summing up

3.0 Objectives

After going through this unit, you will be in a position to:

- Understand the need, importance and concept of farming system approach
- Know various facets of farming system approach, its objectives, what it is; what it does and why
- Understand the activities to be carried out for the farming system approach
- Understand the methodology and extension strategy for an alternate and modified farming system suitable to the resource availability of the farmers

3.1 Introduction

Public sector extension in India has undergone several transformations since independence in 1947. Initially, the focus of extension was on human and community

development, but during the remainder of the 20th Century, there was a steady progression toward technology transfer within the policy framework of food security. The most significant development during the mid-seventies was the introduction of the Training and Visit (T&V) Extension management system.

By the 1990s, the Indian Extension system was at a cross roads. Since Extension had focused on disseminating Green Revolution technology for the major cereal crops for the past two decades, extension activities were largely carried out by state Departments of Agriculture (DOA). Other line departments, like Animal Husbandry (DAH), Horticulture (DOH) and Fisheries (DOF), had very limited extension capacity and primarily focused on the provision of subsidized inputs and services to farmers. In addition, these line departments operated largely independently, with very little collaboration between the departments and their field staff.

In the late-1990s, the Government of India (GOI) and the World Bank pilot-tested a new, decentralized, market-driven extension model under the National Agricultural Technology Project (NATP). This new approach was designed to help farmers diversify into high-value crops and livestock enterprises as a means of increasing farm incomes and rural employment (i.e. poverty alleviation). The key institution in implementing this new approach was the Agricultural Technology Management Agency (ATMA), which was to facilitate and coordinate “farmer-led” extension activities within each district.

The key elements of the ATMA model included: 1) organizing small-scale farmers, including women, into farmer interest groups (FIGs), 2) linking these groups to markets, 3) decentralizing extension decision-making down to the district and block levels; 4) taking a more “**farming systems**” **approach**, requiring the integration of extension activities across the different line departments. Now let us understand the farming system approach (FSA) through concept and definitions.

3.2 Concept

Farming system is an integrated set of activities that farmers perform in their farms under their resources and circumstances to maximize the productivity and net farm income on a sustainable basis. The farming system takes into account the components of soil, water, crops, livestock, labour, capital, energy and other resources, with the farm family at the centre managing agriculture and related activities.

The farming system conceptually is a set of elements or components that are interrelated which interact among themselves. At the center of the interaction is the farmer exercising control and choice regarding the types of results of interaction. The income from cropping alone from small and marginal farm is insufficient now to sustain the farmers' family. A judicious mix of any one or more of these enterprises with agronomic crops. Most complement the farm income and help in recycling the farm residues / wastes. The selection of enterprises must be based on the cardinal principles of minimizing the competition and maximizing the complementary it between the enterprises. Of late, the researchers on multi disciplinary approach greatly realized and started developing the various farming systems models in accordance with the agro-eco systems zones. Since 1978, both scientists, extensionists, anthropologists, social workers, administrators have been publishing many articles on FSRE in different journals.

Simmonds in 1984 explain the Farming System Approach as 'it is an academic activity comprising of theory, concepts, principles, approaches etc. It creates an opportunity for developing diversified models for different type of farmers and different category of farmers. New farming system approach models could be developed by means of on farm research and extension. It causes consequential a complex change which demands for Government interventions for farming systems development'.

BIGGS (1985) explained the concept of FSA as it is a problem solving approach for the farmer. Farming system approach requires commonly homogenous type of farmers.

It is an inter disciplinary approach. It is a participatory and bottom up planning It requires on farm trials. It depends on the concept of learning by doing and farming system approach needs socially desirable technologies.

Thus the concept of Farming System Approach can be summarized as a holistic approach, complex in nature, interrelated components, matrix of soils, plants, animals, power, implements, labour, capital and other inputs, influenced by political, economic, institutional and social forces.

3.3 Definitions

Farming systems approach relates to the whole farm rather than individual elements; it is driven as much by the overall welfare of farming households as by goals of yield and profitability. Farming systems are closely linked to livelihoods because agriculture remains the single most important component of most rural people's living and also plays an important role in the lives of many people in semi-urban areas.

Farming systems involve a complex combination of inputs, managed by farming families but influenced by environmental, political, economic, institutional and social factors. Research and extension institutions are increasingly aware that a holistic approach, drawing on both local and external knowledge, is necessary if they are to be effective in addressing poverty and sustainability.

“ Farming System is defined as a complex inter related matrix of soil, plants, animals, implements, power, labour capital and other inputs controlled in part by farming families and influenced to varying degrees by political, economic, institutional and social forces that operate at many levels. The farming system therefore, refers to the farm as an entity of inter dependent farming enterprises carried out on the farm”.

The farm is viewed in a holistic manner. The farmers are subjected to many socio-economic; biophysical, institutional, administrative and technological constraints.



3.4 Need for Farming System Approach

The need for Farming Systems Approach in the present scenario is mainly due to high cost of farm inputs, fluctuation in the market price of farm produce, risk in crop harvest due to climatic vagaries and biotic factors. Environmental degradation, depletion in soil fertility & productivity, unstable income of the farmer, fragmentation of holdings and low standard of living add to the intensity of the problem.

3.5. What it is and What it does

It is an approach for developing farm-household systems, built on the principles of productivity, profitability, stability and sustainability. All the components are complimentary and supplementary to each other. And the development process involves the participation of rural communities. The farming system approach emphasizes understanding of farm household, community inter linkages, reviews constraints and assesses potentials. And it combines improvements desired from better technology. It needs efficient support services and requires better policies. It is continuous, dynamic and interactive learning process based on analysis, planning, testing, monitoring and evaluation.

3.6. Why Farming Systems Approach

To develop farm – house hold systems and rural communities on a sustainable basis

To improve efficiency in farm production

To raise farm and family income

To increase welfare of farm families and satisfy basic needs.

An intensive integrated farming system addresses two issues, reduction in risk with the monoculture activities and promoting enterprise diversification and value addition and development of alternative income sources with efficient utilization of farm resources. And it brings about enterprise diversification for sustainability and additional benefits, better management of important farm resources like land, labor and capital etc. Provides an opportunity for effective recycling of the product and by-

products, helps to generate flow of cash to the farmers round the year by way of disposal of milk, fruits, fuel, manure etc., beside other agricultural output.

3.7. Farming Systems Strategy

In view of serious limitations on horizontal expansion of land and agriculture, the only alternative left is for vertical expansion through various farm enterprises requiring less space and time but giving high productivity and ensuring periodic income specially for the small and marginal farmers located in rainfed areas, dry lands, arid zone, hilly areas, tribal belts and problem soils.

The following farm enterprises could be combined:

Agriculture alone with different crop combinations

Agriculture + Livestock

Agriculture + Livestock + poultry

Agriculture + Horticulture + Sericulture

Agro-forestry + Silviculture

Agriculture (Rice) + Fish culture

Agriculture (Rice) + Fish + Mushroom cultivation

Floriculture + Apiary (beekeeping)

Fishery + Duckery + poultry

For meaningful execution of integrated farm-enterprises, the following activities should be undertaken by a multi-disciplinary team of extension professionals with farmer's participation and involvement at all stages.

- Thorough understanding of existing farming systems and their components
- Assessment of resource availability in the farm environment and identification of bio-physical, socio-economic, institutional, administrative and technological constraints
- Development of economic viable and efficient integrated farming systems suitable for various domains

- Diffusion of improved technology and receiving 'feed back' for further improvement of the system as a whole.
- Continuous improvement in components technology to fit into a given farming system
- Improvement in quality of farming system
- Research Extension linkage through "On farm Adaptive Research"
- Development of National and International linkages

3.8. Methodology adopted for grounding the concept of FSA

I. Identification of major socio-economic situations

- Understanding dominant enterprises and most common existing farming system
- Analysis of economic viability of existing farming systems
- Understanding relationship between different enterprises
- Analysis of linkages between different farming systems

II. Understanding the modifications made in existing farming system by innovative farmers

- Understanding the changing scenario in rural areas and its impact on existing farming system
- Identification of new market opportunities and its impact and relevance to socio-economic situation
- Suitable modification made by innovative farm families in existing farming system
- Type of modification made (diversification or intensification of the enterprises)

III. New options recommended by the Researchers/ Extensionists

- Identification of new suggested options by researchers/extensionists around each dominant enterprise
- Understanding the technological details about new options

IV. Economic analysis of recommended options and working out alternatives:

- Analysis of relative profitability of recommended options as compared to existing farming system
- Understanding of implications of each options with regard to reallocation of resource

V. In the absence of any recommendations, work out an alternate model by fine tuning the existing model (without major changes) considering the resources, market , profitability and sustainability

- Propose an alternate model by fine tuning the existing farming system by working out the possibilities of diversification or intensification of an enterprise.
- Work out the economic analysis and benefits of alternate model compare to existing and identify the gaps in knowledge and skill so as to adopt the new model
- Develop strategies and activities to over come the gaps in knowledge and skills
- Testing the effectiveness of recommended options over a period of time

Annexure - Working Manual for Farming Systems Approach and Case Studies are placed at Annexure 6.15 and 6.16.

3.9. Summary

Due to ever increasing population and decreasing per capita availability of land in India, there is little scope for horizontal expansion of land for food, feed, fuel and fibre production. Only vertical expansion is possible by integrating various farm enterprises requiring less space and time and ensuring periodic income to the farmer. The farming system approach, therefore, assumes great importance for sound management of farm resources to enhance farm productivity, reduce the degradation of environmental quality and improve the quality of life of farmers and above all to maintain sustainability in farm production and productivity.



Unit-4

Farming Situation Based Extension (FSBE)

Structures

- 4.0. Objectives
- 4.1. Introduction
- 4.2. Evolution of concept
- 4.3. Approach and analysis of NARP Concept
- 4.4. Analysis of crop / Commodity situations
- 4.5. Gap analysis for planning of extension strategy
- 4.6. Pilot Development Programmes
- 4.7. General Extension Programs
- 4.8. Summing up

4.0 Objectives

After going through this unit, you will be in a position to:

- Understand the need, importance and concept of farming situation based extension
- Understand the analysis of crop / commodity situation
- Understand the various steps involved in identifying the production gaps in adoption and re-synthesis of gaps
- Develop extension strategies to bridge the gaps based on the reasons for gaps in adoption and farmers solutions to the gaps
- Understand the concept of critical inputs and critical practices

4.1. Introduction:

A major challenge in Indian agricultural development in the present decade and beyond lies in the effective involvement of farmers in the extension and research programs. The continued stress is more on developing procedures or methods that encourages farmer's participation in planning and management of above programs. Involving farmers in the process of technology development can develop appropriate recommendations specific to crop situation. This requires major changes in the attitudes, approach and role of researchers and extensionists. As such an approach which provides active participation of farmer- researcher and extensionists in developing a modified or fine tuned technological recommendations specific to crop situation has been attempted through "Farming Situation Based Extension.

4.2. Evolution of concept:

In the past, several attempts were made in classifying climates and the agro-climates. Earlier attempts in classifying the agro-climatic regions were centered round the parameters like average rainfall or temperature that influences the crops / vegetation in abundance (Burgos, 1958, Trewartha, 1968). Thornthwaite's (1948) classification concentrates more on climatic factors that affect plant growth throughout the growing season. FAO considers an agro climatic zone as a level unit defined in terms of major climate and growing period, which is climatically suitable for certain range of crops and cultivars.

Planning commission has identified 15 resource development regions in the country, aimed at the regionalization of the Indian agricultural economy and to organize agricultural planning systems for 15 agro-climatic regions so identified and to develop policies for faster agricultural development on regional basis. The emphasis was made more on specific characteristics of prevailing agro-ecological parameters like soil topography, climate and water resources.

4.3. Approach and analysis of NARP Concept:

Under the National Agricultural Research Project (NARP) the country was divided into 126 agro-climatic zones for 17 states and 6 union territories of north eastern hill regions. The concept of zoning was mainly based on ecological land classification, recognizing various components like soils, climate, topography, vegetation etc. as major influencing factors. The zones were selected as contiguous areas within the state boundary and to the possible extent, zones homogenous physical characteristics such as topography, rainfall, soils etc. Each agro-climatic zone was upgraded with a Zonal Research Station (ZRS) for conducting research and generating technologies for that zone. The emphasis was on analysis of agro-ecological conditions and to develop balanced and coherent research programs directed squarely to the major problems limiting the agricultural growth in the zone. Through this process, technologies are being evolved separately for each of the major commodities, namely different agricultural crops, horticultural crops, livestock etc. Package of practices for respective commodities are specific to the zone, which are able to take care in a better way the requirements of the zone as compared to conventional approach in which generalized package of the commodity evolved for the whole state.

However, even within a NARP zone, each commodity is grown / managed under a number of situations. The production problem related to that commodity varies from situation to situation. The common package evolved even at the zonal level is not ideally suited for different situations of the concerned commodity. Likewise, extension needs for improving the productivity of that commodity also varies considerably from situation to situation within a given NARP zone. Hence there is a need to carry out situation oriented research and extension programs. The first step in this direction is to identify the farming situations under which each commodity is grown / managed in the zone. There could be two possible options to do the above job.

Option A: Farming Situation Based Research and Extension: Under this option, the entire area of the NARP zone is divided into number of situations based upon important

factors namely variation in rainfall, soil type and source of irrigation. Variation in soil type in terms of structure, texture, soil depth, soil reaction, drainage, landscape and variation in moisture regime linked with both rainfall and irrigation are the major considerations in delineating situations. Based on these factors, different farming situations are mapped in each NARP zone. As an example in southern Telengana zone a total of 18 farming situations have been identified keeping in view the variability in above factors.

Option B: Crop / Commodity Based Research and Extension: For applying this concept one Crop or Commodity at one time is a basis to proceed at the field level. It has been observed that each commodity is grown under a number of farming situations in a zone. The factors which determine the farming situation of a commodity includes not only the three fixed variables indicated above (rainfall, temperatures and soil), but also includes some of the flexible variables namely time of sowing, previous crop, source of irrigation, soil borne problems etc. These additional flexible variables also require situation specific approach with regard to development of technological package or extension of new technologies. When such factors are taken into account, even a single village or even a single farmer may have more than one situation of a given commodity. It may however be mentioned that a particular crop available with different farmers or different village within a NARP zone may still require a uniform technology and hence would not create unmanageable circumstances.

In the light of the above mentioned facts, MANAGE initiated a specific method "Farming Situation Based Extension" for participatory planning of extension activities. In this method, the crop / commodity situation in which it is grown is taken as the basis for resynthesising the blanket technological recommendations rather than an area as a whole. The crop situations are delineated with the agronomic factors like sowing time, previous crop, source of irrigation (canal, tank, well) soil borne problems etc. The variations in these micro level agronomical factors leads to different crop culture and

demands for a modified / refined technological package rather than a standardized technological package. The main features of this approach are:

- Analysis of major situations of a crop (within a given agro-climatic zone)
- Re-synthesis of the technological package of the crop (under each crop Situation) through a joint effort of researchers, extensionists and farmers
- Assessment of gap in the adoption of technology and using it as the basis for working out the required extension strategy

4.4. Analysis of crop / Commodity situations:

The difference in the crop situations is not due to micro-level variability in rainfall, temperature, soil type, etc., but mainly due to agronomic factors related to the crop namely, sowing time, previous crop, source of irrigation (in case of irrigated crops), location specific problem, etc. In southern Telengana Zone (of Andhra Pradesh) rabi groundnut is grown under 6 different situations (Table 1A&B) and Castor crop is grown under 5 different situations (Table2).

Table 1 A: Type of situations of Rabi-groundnut crop in Nalgonda District
(Andhra Pradesh)

Previous crop	Farming situations / source of irrigation			
	Well	Canal	Tank	Residual moisture
Paddy	1	2	-	-
Non-paddy	3	4	5	6

**Table 2: Type of situation in Castor crop of Mahabubnagar district
(Andhra Pradesh)**

Sowing time	Rainfed condition			Irrigated condition
	Normal field	Red Hearing Caterpillars endemic field	Root-wilt endemic field	
Early	-	1	-	-
Normal	2	-	4	5
Late		3	-	-

The field studies have revealed that production problems differ significantly from situation to situation. But at present, there is only one generalized technology for each of these crops. This raises a series of questions.

- How can a single 'package' be relevant for all the crop situations of a particular crop (within a NARP zone)
- Does it mean we need to have 6 different technology packages of rabi groundnut and 5 different technology packages of kharif castor in Southern Telangana zone?
- Can we afford to initiate 6 separate research programs for rabi groundnut and 5 for castor in the above zone of Andhra Pradesh.
- If not do we have the responsibility of refining the technology to the extension functionaries or the farmer's -community themselves.
- Lack of relevance of the generalized technology to the real crop-culture condition has been a serious concern of the research managers. This has led to a number of new concepts and research methods, which require participation of farmer as a co-research worker rather than a mere beneficiary.
- The following observations shall illustrate the significance of above point.
- The technology package must be evolved jointly by the scientists, farmers and extension persons (Krishna Murthy and Venkateswarlu 1978).
- "A farmer is the best agronomist for the situation under which he/she is working" (Appa Rao 1985) The possibility of developing technologies at research stations which can diffuse widely in dry regions is remote" (Gupta 1989)

- Agricultural research can be done in laboratories and experimental fields but agricultural technologies can be developed only in farmer fields. Since technology has both economic and ecological dimensions, technologies have to be location specific to be ecologically, economically and culturally sustainable" (Swaminathan 1989).

Such observations have been made by various persons all over the world, which have led to the evolution of farmer participatory research methods. The reviews and analysis on this aspect by *Chambers et al. 1989, Farrington and martin 1988, Marrill Sands 1989; and Biggs 1988*) have clearly brought out that these methods are complementary to the conventional research methods and can greatly enhance the efficiency of the technology generation process provided they are properly institutionalized.

Re-synthesis of technological package: If farming situations are to be identified through the fixed variables as in option-I, it would be essential to carry out decentralized on-station research in each of the concerned situations. Such a step in many locations does not appear to be feasible due to resource constraints. Hence there is a need to initiate an alternate participatory process involving the concerned scientists, experience extensionists and innovative farmers, through which the available package of technology could be resynthesized to meet the situation specific requirements. The alternate process is essentially based on the information about the suitability of each component in the generalized package for the crop situation, indigenous technical knowledge of the farmers and specific production problems for the concerned crop situation.

Based on the above information the original package of practices is thus resynthesized through elimination or addition of certain components. The resynthesised package may then be tested in farmer's fields under specific situations for validation and final recommendations. This participatory process of resynthesising the technologies, thus not only make use of original findings emerging from on-station research at NARP zonal level but also make use of indigenous innovations of farmers and field experiences of extensionists.

Under this approach one can easily work with larger number of situations arising on account of fixed variables but also flexible variables. To illustrate an example, the resynthesised package for six different situations of rabi groundnut in southern telegana

zone have been given in table-3 and for 5 different situations of castor have been given in table-4

Table 4: Specific technological packages for different farming situations of Castor Crop in Ranga Reddy district (AP) during 1992.

Sl. No	Item	Technology package for different situations				
		1	2	3	4	5
1.	Sowing time	End of May	End of June	End of July	End of June	End of June
2.	Variety	Aruna	GCH-1	Aruna	48-1	Gauch-1
3.	Seed rate (kg/ha)	10	5	10	10	5
4.	Seed method	Row planting	Square system	Row planting	Row planting	Square system
5.	Spacing (cm)	60 x 20	60 x 20	60 x 20	60 x 20	90 x 90
6.	Fertilizer (Kg / ha.)					
	Basal - N	18	18	28	18	18
	- P ₂ O ₅	46	46	28	46	46
	Top dressing (N)	20	20		20	40
7.	Method of fertilization	Furrow	Pocketing	Furrow	Furrow	Pocketing
8.	Pest/disease control for RHC	Bon fire	-	Bon fire	-	-
		Vegetative trap		Vegetative trap		
		Semilooper	Broad cast	Broad cast	-	Broadcast
		Cooked rice	Cooked rice	-	Cooked rice	Cooked rice
	Bihar hairy caterpillar	-	-	Hand picking	-	
9.	Disease-Root wilt	-	-	-	1.Tolerant variety	1.Tolerant Hybrid
					3.Avoid FYM	3.Avoid FYM

Refer table 2 regarding details of crop situations

4.5. Gap analysis for planning of extension strategy

Under the top-down approach, recommended package of practices is considered as the ultimate basis for technical planning of demonstrations and training programs. It has been observed that in many cases yield under the demonstration plots has not been found to be significantly higher than the yield of plots, which are outside the demonstration plots. This kind of experience has often created an impression that the improved technology does not appear to be promising under the farmers' field condition.

A critical analysis of the situation has, however, revealed that 70-80 percent of the inputs used in the demonstration plots are similar to those, which are used by farmers outside the demonstration plots. This partly explains the reasons for lack of desired results from the demonstration plots. Similarly in the training program there has often been a tendency (on the part of the trainers) to talk about the full package of technology of a given crop without any consideration to the existing level of its adoption by participating farmers. Such a situation creates disinterest among trainees / they are practicing farmers since a part of the technical content is already known.

Needless to mention, participatory approach for planning of extension strategy is crucial to overcome the above limitations. Under this approach 'gap in adoption' (rather than improved technological package) becomes the ultimate basis for planning of extension strategy. The details regarding the application of above approach has been discussed below:

Situation based participatory extension methods: The extension program can broadly be divided into the following two groups:

- The development programs eg. , NWDPPRA, NOP, NPP etc.
- General extension programme eg. T&V etc.

4.6. Pilot Development Programmes:

In case of pilot development programs, lot of funds are available for conducting demonstration on new technology. The level of supervision and monitoring in such programs is also high. The results of the demonstration are regularly compared with the existing practices of the farmers so that subsequent steps could be taken for promoting the new technology through the general extension program. Under such programmes budget utilization is considered to be one of the crucial parameter during the regular reviewing and monitoring. Hence planning for budget utilization becomes a part and parcel of the technical planning. The main features of the farmer participatory planning of extension programs for pilot project are as follows:

- Identification of gap in adoption (i.e. difference between existing practices and recommended practices)
- Assessment of total cost required for filling the above gap
- Analysis of critical inputs and critical practices (out of the gap in adoption) through proper prioritization of items. Normally the following three criteria are used for prioritizing the items out of the gap in adoption.
- Availability of the budget
- Availability of required input
- Relative profitability of different components in the gap

A specific example for identification of critical inputs / practices with respect to demonstration on rabi groundnut under NOP in Nalgonda district of Andhra Pradesh has been given in Table 5. In this particular case the gap in adoption consists of technological items like variety, fertilizer, herbicide etc. The total cost required for filling the gap worked out to Rs.1900 per ha. Keeping in view the available budget of Rs.1200 per ha. for the demonstration program under NOP and also other factors mentioned above, the prioritization of technological items was done. The resultant items out of the gap in adoption have been divided into the following two categories:

Critical inputs: It consists of those components of technological package which require cash investment and which are not being currently adopted by the farmers (table-5)

Critical practices: It consists of those improved cultural practices which are not being followed by farmers and which can normally be implemented through the family labour or draft power.

In the participatory approach for planning of extension strategy, the cost required for adoption of different items under improved technology is shared by the farmers and the host institution. Farmers contribute towards full cost of some of the improved inputs (which are adopted by them during last year) whereas host institution contributes only for critical inputs, which are completely new for these farmers. The investment by host institution towards critical inputs is however conditional in the sense that it shall be made only when farmers implement the required 'critical practices' at their own level.

Such an approach allows the institutional investment only for new inputs (critical inputs) and hence, it is likely to either provide a significant increase in yield as compared to outside plots or provide the required feed-back about the technological constraints. The linking of critical practices (as a prerequisite to the investment on critical inputs) shall help in minimizing the attraction of farmers towards subsidized inputs in the demonstration program.

4.7. General Extension Programs:

In the above program (particularly under T & V set up) there are no funds for conducting demonstrations. However, limited funds are available for organizing adaptive trials. Frequent visits and contacts with farmers are however made to train them about new technologies. Hence, for this kind of extension program, the following three categories of information are needed:

- What is the size of gap?
- Why the above gap exists?
- What specific actions should be taken to bridge the gap?

What is the size of gap?

The gap in adoption refers to the difference between improved practices and existing practices of the farmers. This gap obviously varies considerably with time and space depending upon the existing level of adoption by the farmers. Different crop situations within a given situation may also have different size of gap. Some of the situations may have large gap (Table 6) whereas others may have negligible gap as was found in case of kharif sunflower in Kurnool District of Andhra Pradesh (Table 7). The gap may also vary from farmer to farmer within a given village. Hence some kind of generalization may be required while describing the size of gap. For the sake of simplicity any item, which adopted by more than 30 percent farmers may be considered as the existing practice. In case there are striking differences from farmer to farmer, a separate categorization may be done on the basis of type of farmers (small, medium, large etc.) for the analysis of gap.

Why the gap exists:

After analyzing the gap in adoption, it is essential to find out from the concerned farmers the specific reasons for the gap so that appropriate follow-up action could be taken. Normally the gap could be due to any one of the following reasons:

- Lack of awareness, knowledge or skill
- Lack of conviction or motivation
- Fear of loss
- Lack of resources (finance), or availability of inputs etc.

The details about preliminary analysis of reasons for adoption gap in case of Rabi groundnut in Nalgonda District (A.P.) are given in Table 8.

What to do for overcoming the gap:

Gap in adoption would be bridged efficiently if appropriate extension strategy is worked out for each component of the gap. The specific reasons for the gap shall provide a lead to choose appropriate steps. Mass media approach may be needed for cases where lack of awareness is the main reason; skill oriented training program may be needed if gap is due to lack of a particular skill: adaptive trial or demonstration maybe needed depending upon whether the farmer has lack of conviction or fear of loss. In some cases exposure visits to other farmers' fields (where successful adoption is being done) shall be required if motivation is missing; obviously none of the above extension methods shall help if lack of resource / input is main reason for the gap. A typical example of the above approach has been given in table 8. Under this approach major emphasis is laid on using an appropriate extension strategy for each item (under the gap in adoption).

Table 5: Critical inputs for large size demonstrations on rabi g.'nut under NOP in Nalgonda District (AP) during 1991-92 Crop situation Previous crop: Paddy, Source of irrigation: Well, Sowing time: Early December

S N	Item	Existing Practices	Recommended Practices	Cost (Rs/ha)	
				Gap in adoption	Critical inputs/ practices
1.	Land preparation	Flat bed	Raised bed	240	120
2.	Variety	TMV-2	JL-24	FULL	-
3.	Seed rate pods (kg/ha)	170	230	900	450
4.	Seed treatment	NIL	Dithane M-45	50	50
5.	Fertilizer (kg/ha)				
	- P ₂ O ₅	DAP-125	SSP 375	160	160
	- K ₂ O	MOP-40	MOP-50	20	20
	- N	NIL	Urea 40	130	-
	-ZnS04	NIL	5	50	50
6.	Gypsum	NIL	250	100	100
7.	Pest/ disease control				
	-Leaf webber/aphids	1 spray	1 spray	-	-
	-Spodoptera (lt/ /ha)	1 spray	Monocrotophos 0.75 lit.	-	-
	Heliothis				
	-Leaf spot	Nil	Nil		
8.	Herbicide (lt/ha)	Nil	Butachlore 2.0 lit.	250	250
	TOTAL			1900	1200

Item No.1 is a critical practice as it can be done through family labor & bullocks whereas rests of the items are critical inputs.

Table 6: Critical inputs for large size demonstrations on rabi g.nut under NOP in Nalgonda District (AP) during 1991-92 Crop situation: 3 Previous Crop: Non-Paddy Source of irrigation: Well Sowing time: Early December

S N	Item	Existing Practices	Recommended Practices	Cost (Rs/ha)	
				Gap in adoption	Critical inputs/ practices
1.	Land preparation	Flat bed	Raised bed	250	100
2.	Variety	TMV-2	JL-24	FULL	-
3.	Seed rate pods (kg/ha)	170	230	900	400
4.	Seed Treatment (gm/ha)	NIL	Dilthane M-45 (500 gms)	50	50
5.	Fertilizer (k/ha)- P ₂ O ₅	DAP-125	SSP 375	160	80
	- K ₂ O	MOP-40	MOP-50	20	20
	- N	NIL	Urea 40	130	-
	-ZnS04	NIL	5	50	50
6.	Gypsum	NIL	250	100	100
7	Pest/disease control -Leaf Webber/aphids	(Name of the insecticide) 1 spray	1 spray	-	-
	-Spodoptera	1 spray	1 spray	-	-
	Heliothis				
	-Leaf spot	Nil	Dithane M-45 (2 kg) Bavistine(0.5 kg)	300	300
8	Herbicide (lt/ha)	Nil	Butachlore 2.0 lit.	250	100
	TOTAL			2210	1200

Table 7: Critical inputs for large size demonstrations on Kharif Sunflower under NOP in Kurnool District (AP)

Crop situation: Rainfed Ayacut area, Sowing time : June-July Type of land : Black soils Irrigated / Rainfed : Rainfed

S N	Item	Existing Practices	Recommended Practices	Cost (Rs/ha)	
				Gap in adoption	Critical inputs/ Practices
A.	<u>Inputs</u>				
1.	Variety	MSFH-17	MSFH-17	-	-
		MSFH-1	MSFH-1		
2.	Seed rate (kg/ha)	7.5	5.0	-	-
3.	Seed treatment	NIL	Capton/Thiram	50	50
4.	Fertilizer Basal (k/ha)				
	-N	20-35	30	-	-
	- P	20-57	30	-	-
	-K	37	30	-	-
	Topdress				
	- N	57	30	-	-
5.	Pest/disease control Heliothis	BHC-dust	Hand picking With thorn	-	-
	- Alternaria	Nil	Bavistin spray (Once in 3-4 yrs) 0.75 lit.	200	200
B.	<u>Practices</u>				
1.	Sowing time	June-July	June-July	-	
2.	Method of sowing	Seed drill	Seed drill with	-	-
		(goru)	para	50	-
3.	Method of fertilizer use				
	Basal Topdress	Broadcast	Placement with seed drill	-	-
4.	Row spacing (cm)	30x15	45x30	-	-
5.	Cropping system	Mono cropping	Mono cropping	-	-
	TOTAL			300	250

4.8. Summary

The concept of crop situation based extension has been experimented by MANAGE since 1992-93 in different crops in different agro ecological situations in the country namely groundnut, sunflower, castor, paddy, wheat, mustard, cotton etc. in the states of Andhra Pradesh, Haryana, Gujarat, Orissa, Tamil Nadu, Maharashtra, Uttar Pradesh, Bihar, Himachal Pradesh etc. This concept can be usefully applied in narrowing down the gap in adoption by re-synthesizing the standardized



recommendations emanated from university research by involving farmers, extensionists and researchers. As such a crop specific and farmer driven technological recommendation can be developed, besides an extension strategy to bridge the knowledge and skill gap can also be framed thus making the job of extension worker more easy and meaningful. However, it is still necessary to devise ways whereby the focus can be on Farming System as a whole rather than a crop in re-synthesizing and formulization of system specific technologies.



Unit-5

Farmer's Organizations (FOs and FIGs)- Federation at Different Levels

Structures

- 5.0 Objectives
- 5.1. Introduction
- 5.2. *Part - I : Promotion of Farmers Interest Groups*
 - 5.2.1. Types of Farmers Organisations/ FIGs
 - 5.2.2. Stages of Group Formation
 - 5.2.3. Forming FIGs
 - 5.2.4. Group activities
 - 5.2.5. Grading of FIGs
 - 5.2.6. Group promoters
 - 5.2.7. Case study
- 5.3 *Part - II: Formation and Management of Federations*
 - 5.3.1. Organisational Forms
 - 5.3.2. Organization of federation of farmers groups.
 - 5.3.3. Principles of Federations
 - 5.3.4. Process of Formation of Federations
 - 5.3.5. Case study on Federations
- 5.4 Limitations and difficulties in farmers' organizations
- 5.5 Successful groupings
- 5.6. Summing up

5.0. Objectives

After going through this unit you will be in a position to explain the

- need and importance of farmers organisations
- objectives of farmers organisation
- formation of farmers interest groups
- formation and management of federations at different levels

5.1 Introduction:

Farmers Organizations are seen as a useful organizational mechanism for mobilizing farmer's collective self-help action aimed at improving their own economic and social situation and that of their communities. Considering this factor there is a need for not only providing credit to the groups but also as part of an overall management of financial resources and also agriculture and allied sector development in a sustainable manner, leading to empowerment of the members of farmers groups. Such organizations were perceived to have an ability to generate resources from their members. They could operate at different levels from the local to the national and from adaptive research and extension through the overall technology priority setting and form multiple linkages with the technology and marketing systems.

Many governmental and non-governmental organizations have been trying to organize farmers into groups integrate them into the development process by actively involving them in transfer of technology, production and marketing, planning, implementing and monitoring of different projects on rural development, agriculture and allied sector development, natural resource management, etc. Some of the popular examples are Farmers Interest Groups (FIGs) / Farmers Organisations (FOs) under National Agricultural Technology Project, Farmers federation under UPDASP, Watershed Associations under Participatory Watershed Management Programs, Vanasamrakshana Sameti under Joint Forest Management Projects, Farmers Clubs under NABARD scheme, Self-Help Groups of farmers organized by MYRADA and

CEAD in Andhra Pradesh and Rythu Mithra Groups (RMG) formed by Department of Agriculture, Govt. of Andhra Pradesh, are some of the initiatives taken to mobilize and organize the farmers. The Kerala Horticultural Development Programme (KHDP) formed SHGs of vegetable and fruit growers to help and promote new technology and participatory technology development (PTD) skills, help farmers access credit and strengthen their negotiating power through collective marketing, namely the Vegetable and Fruit Promotion Council, Kerala.

National Commission on Farmers, Ministry of Agriculture, and Draft National policy of farmers was indicated the following aspects on group approach:

Group Farming by Self-Help Groups (SHGs) have been mainly organised for supporting micro-enterprises operated by women with the help of micro-credit. With the growing diminution in the size of operational holdings, it will be useful to promote SHGs at the production end of the farming enterprise involving men. This will be particularly helpful in the case of integrated pest management, integrated nutrient supply, scientific water management and improved post-harvest technology, marketing, etc. SHGs will however become sustainable, only if they have backward linkages with technology and credit and forward linkages with processing and marketing organizations. Steps will have to be taken to convert micro-finance into livelihood finance through appropriate support systems. There is also need for establishing SHG Capacity Building and Mentoring Centers.

Farmers' organisations of all types have an important role in development - they provide space for participation, which contributes to group members' ownership of the issue at hand as well as any solutions. This in turn builds group cohesiveness, solidarity, and promotes mutual support. They can be the platform for building a sense of community, a social support system, increasing self-confidence, learning together and providing a sense of equality. A well-organised group can be taken seriously in a wider environment. Farmers' organisations are increasingly about empowerment, of individuals as well as of the groups themselves.

Groups with common interests can secure access to services that individuals cannot, such as training, credit or equipment. Lack of access to any of these could be the vital issue that an individual farmer faces, yet by joining a group, different opportunities arise, enabling farmers to learn, decide and act. This is particularly the case where farmers organise as a response to marketing concerns, as there are clear economic benefits of working in groups. These include the ability of groups to buy inputs in bulk, or access more distant markets, access to information. Working together can increase members' bargaining power, which helps to share, and lower risks and costs. In areas where farmers are scattered geographically, and transport and communications are difficult, the importance of such organisations is even greater.

Everywhere in the world, a limited number of farmers are collaborating with each other in some way or the other – forming groups for sharing information and working together. Under the right circumstances, farmers' groups can make a very positive difference to the lives of those working to improve their livelihood options, as well as to the sustainable development of agriculture. Working together can take many forms, and a variety of terms are used to cover the scope of this idea – collective action, farmers' organisations, womens' groups, unions, co-operatives, self-help groups, networks, alliances, associations, committees, clubs, partnerships, etc. These terms imply a range of methods for joining forces, at different levels, in a variety of sizes and scopes, with different aims, or with different legal status.

5.2 Part -I : Promotion of Farmers Interest Groups

Groups of farmers who come together spontaneously or through their own efforts to answer their own felt needs are more likely to be effective than groups that are brought together to suit the needs of an external agency. These groups/ associations last only as long as the project period. Their cohesion and motivation often lie in material and financial considerations. Spontaneous and voluntary formation of social groups involves a high degree of trust, which cannot be manufactured. This is one reason why

community groups are often formed around one strong personality, and is formed due to some immediate issue.

There is an important difference between farmers or communities that organise themselves to work together, and farmers being organised in groups by external actors who see this as a vital step and entry point for community development. External agencies often view the creation of organisations as a positive intervention, a way of increasing impact and sustainability of activities. Farmers and communities often do benefit from participating in such projects through gaining access to trainings, information, resources and further linkages. However, groups formed in this way are typically more prone to difficulties at the start and there is a risk they will not continue if or when the initiating institution withdraws from the project. Alternatively, where previously established local groups gain the support of external agencies, this arrangement can be very positive. A key challenge for facilitating agencies is then to act as catalysts and bring out the self-organising capacities of farmers in the most locally relevant and useful way. Effective support can facilitate or enable local groups to achieve more, or be heard by the right people. It can be especially constructive while community groups are establishing themselves, or in response to a stated need. However, as groups develop and find their own strength, the external agencies then need to consider the different type of support groups may need.

5.2.1 Stages of group formation:

Broadly there are four stages in organization of group as indicated below.

- Forming ■ When the group members enroll themselves and conduct 1-2 initial meetings.
- Storming ■ When the group members start discussing and reacting to the various issues / conflicts
- Norming ■ When the groups start framing norms to run it successfully

- Performing ▪ When the group starts performing by lending money and collecting it back, involving in developmental programmes, management of inputs and output, marketing, etc.

5.2.2. Forming Farmers Interest Groups (FIGs)

Guidelines for formation of FIGs:

The core functions of FIG are

- Acting as collateral through group pressure
- Ensuring optimal production planning, meeting the market and household food security needs
- Maintaining common infrastructure - farm ponds, borewells, tractors and other equipment which cannot be afforded by one farmer but can be owned by 20 farmers together
- Linking with the local government at panchayat level to access NREGA, Watersheds and other agriculture development funds.

Characteristics of the FIG

- Number of members in a FIG - 15 to 20. This is keeping in view the experiences of SHGs promotion in the country.
- Age - above 18 years
- Practicing farmer of the village
- While promoting FIGs, different other community institutions promoted in the area under various government and non-government programmes have to be kept in view.
- The details of such institutions, lessons learnt etc. have to be kept in view while promoting FIGs.
- Such institutions may include the following.
- Self Help Groups (SHGs)
- Village Organisations (Vos) (Federations of SHGs at village level.)

- User Groups– Groups of farmers in compact areas promoted to use the benefits of a common structure erected under watershed programme, such as Watershed Committee, or any other such livelihood groups, Groups of wage labour promoted under NREGS Groups of farmers formed on compact lands assigned to SC, ST farmers - compact land blocks developed under programmes like NREGS, CLDP, NABARD etc, Commodity groups, Cooperatives, Tank management committee, VSS/ FPC, Community networks etc. If such groups exist then it is advisable to select appropriate groups keeping in view the objective of the project and then treat them as FIGs. The advantage will be that you will get the benefit of an existing and organisationally stronger group

The following specific steps may be taken for organization of FIGs.

- Organizes informal meetings with prospective group members to discuss the purpose, methods of operation and benefits of groups, as well as possible enterprises/ activities.
- Farmers groups may be formed Once the participants have identified viable income-raising activities, they decide on criteria for group membership: for example, whether members should belong to a specific category on the basis of common needs, common problems, common interest, similarity in commodity, small holders, social affinity, homogeneity in socio-economic status and neighbourhood etc.
- FIG will get informal recognition from agriculture and horticulture departments. FIG is not a legal body
- Only one member from one household may be considered for FIG and no one
- person can be a member in more than one FIG. From the perspective of equity this is important. If there is joint family, multiple memberships is possible on the basis of one member per 'chula'.
- There will be 1 leader and 1 represent for each FAG. The FIGs should choose their leaders. No designations like Chairperson, Treasurer, and Secretary etc need to be given to the leaders. Instead, the designation of Representative can be used. Thus, this does not take on significance of a hierarchy and they are perceived as a Representative.

- It is always better that the leadership is rotational. However, the periodicity of rotation, etc. should be left to the group. It is also to be remembered that there should be sufficient time for the leadership to work before they are changed.
- In a village apart from compact area of group members of each FIG, the area under all FIGs also has to be compact. Keeping the functions of the FIG in view a mini micro watershed area will be covered in a contiguous land patch of 20 farmers and these 20 farmers will form a potential FIG. This is so that it becomes easy to access watershed funds and also plan for common infrastructure.
- As far as possible, the village saturation (i.e. coverage of all farmers cultivating the entire cultivable area of village) approach has to be adopted.
- Due attention has to be given to farmers cultivating lands in ridge areas, rain fed lands, assigned lands etc.
- Confidence and clarity of key persons (Sarpanch, elders, opinion makers, key informants etc) has to be taken while mobilisation and organisation of farmers.
- Periodic meetings and consultations at the village level is a must to keep the community informed about the interventions that the project is making. Often this is forgotten leading to the isolation of the project in the villages. At least one meeting a month and minimum 12 meetings per year must be conducted at FIG level. Transparency and democratic functioning must be emphasized through example. Questions must be encouraged and fully answered.
- Encourage rotation of leadership positions among group members in order to give all members leadership experience.
- each farmer shall have a common fund in the group
- The FIGs must maintain a set of records relating to their financial transaction,
- membership register, minutes book, etc. This will vary in accordance to the nature of the groups. It is suggested that the Group promoters to be in touch with the organisations who have been promoting such primary groups and take their help in developing the record system at the groups.



- For different activities (like formation of FIG, election of group leaders, group meetings etc), decisions/ resolutions have to be recorded in Minutes Book with required signatures.
- Members will seek primary membership in FIGs. Services to the members will primarily be provided at Savings, credit, Insurance, procurement, marketing,
- trading, storage, processing, land, soil & water resource management.
- Admission/Removal/Resignation of members can formally be done at FIG level.
- Organize farmers group with the help of locally-available/ identified community organizers/ group promoter.
- During the initial period of 6-9 months, the members may be encouraged to take small amount of loan at a reasonable rate of interest as decided by the group. This shall help them in developing a habit of repaying the borrowed amount in different installments. This type of modality shall help in developing solidarity in the group.
- Group promoters make a list of potential group members and leaders, possible group activities and required inputs.
- Assess their productive resources, including capital, skills and experience
- Ranking/ grading of the above FIGs may be done after 6-9 months. At that stage, only mature FIGs may be given external or project benefit, revolving fund, etc. The remaining FIGs may be further strengthened with the help of group promoter. Afterward these FIGs may also be given the revolving fund as and when they get maturity. Proper criteria may be used for assessing the maturity of FIGs.
- At this stage, special care may be taken not to break any of the existing group, just because of availability of certain financial incentives to FIGs.

The formation of viable and stable groups requires patience and, in most cases, a period of two to six months. Both overly rapid formation and overly long delays, which may dampen the interest of potential group members, are avoided. The process of group formation may face formidable obstacles. In most of the cases, the rural poor are economically dependent on landowners, traders and middlemen and may fear intimidation if they are involved in independent peasant organizations. Local leaders who may see the groups as a threat to patron-client relationships pose other constraints.

At local level, project staff can help to overcome this antagonism by calling meetings to sensitize leaders to the objectives of the project and, above all, to illustrate the benefits of its activities to the area as a whole.

Services FIG will provide:

1. Trading
2. Insurance
3. Credit Linkages
4. Storage / Ware housing
5. ICT- Market Information, Price information, Technology
6. Processing
7. Input Linkages- Fertilizers, Manure, Irrigation, Equipments, Pesticides
8. Water shed
9. Capacity building
10. Seed processing and seed bank
11. Technical support
12. Fund mobilization
13. Government linkages
14. Exposure Visits
15. Short, Medium, and long term credits
16. Seed banking and processing
17. Marketing and Exporting

Functions of FIG:

1. Demand estimation
2. Distribution
3. Soil testing
4. Book Keeping



5. Thrift collection
6. Crop plan FAG wise
7. Group Management
8. Processing units
9. Grading
10. Farmer Field School (FFS)
11. Selection of Representatives
12. Loan Guarantee
13. Knowledge Sharing
14. Managing common Infra structure

Group emphasizes income-generating or cost-saving activities based on local experience and low-cost technology. These undertakings do not replace but are meant to supplement members' normal production. Activities of this type are most likely to broaden the groups' economic base, mobilize savings, strengthen group cohesion and develop their enterprise management skills. Groups are encouraged to undertake social or community improvement activities only at a later stage. It is important that - as far as possible - each group identifies, plans, carries out and evaluates its own activities. This is essential for group development and, eventually, self-reliance. While group promoters have an important role in encouraging group activities, especially in the initial stages, theirs is a facilitating role that will be reduced gradually as the groups develop.

5.2.3 Grading of FIGs

Based on the maturity criteria the groups are graded into ABCD categories

Maturity criteria

- Regularity in meeting
- Good attendance (> 80%)
- Good recovery (> 90%)

- Proper maintenance of records and accounts
- Fine for absentees, late comers or those who delay in payment of dues
- Involvement in development of agriculture, allied sector and rural developmental activities.

Once the group fully fills the above all criteria considered being matured group - “A Grade” and such matured groups, which are in “A” grade, are eligible for involvement in developmental programmes. The B,C,D grade groups need capacity building to become “A” grade group.

5.2.4. Group promoters

The group promoter (GP) is a key agent in the success of any participatory project. He or she works with the farmer, building up their confidence in their own abilities and promoting their self-reliance. As this work must be done without creating dependency, the GP's task is essentially that of an intermediary, with three basic roles:

- group adviser, strengthening the groups' leadership, organizational and planning capacity
- participatory trainer, teaching groups basic technical, literacy and problem-solving skills
- "link person", facilitating communication between the groups and government and NGO development services.

Experiences show that one group promoter can help to organize an average of 15-20 groups. GPs must have experience in working with people and local organizations in rural areas, and familiarity with the problems of the farmer. It is essential that candidates have a strong commitment to live with, work with and assist the farmer. Capable group promoters may be recruited from government agencies or local NGOs willing to work with farmer. In some cases, preference has gone to government agencies willing to second their staff to the project.

GPs promote self-reliance by involving the group members in activities that allow them to develop leadership and record keeping skills. They encourage group-to-group exchanges, and ensure the presence of one or more group members whenever they deal with supporting institutions such as banks and delivery agencies. When and how should GPs withdraw from their groups? Past experiences in the projects indicates that it takes from three to five years for groups to achieve complete self-reliance.

Once groups have established a sound economic base, project can promote their consolidation into local-level inter-group federations. These federations promote solidarity and economies of scale both in group activities and delivery of developmental services. Development of local - and, eventually, regional and national - structures also stimulates formation of more groups. An inter-group federation must be accountable to all group members. It has a facilitating; coordinating and educational role as a source of technical assistance, economies of scale and guidance. For instance, a federation can offer training to new groups, financial help to their activities from savings and perform some of the functions of group promoters by providing technical and marketing support to the farmer groups etc.

5.2.5. Case study - I

Harvesting herbs -A farmers forum shows the way

Farmers in North Karnataka region have organized themselves and have found solutions together in overcoming crop failures. Their initiative in including medicinal herbs in their cropping systems is paying rich dividends.

Gadag district in north Karnataka is a drought prone area receiving an average rainfall of 300-350 mm annually. Farmers in this region have traditionally been growing crops like jowar, sunflower, cotton and horsegram, exclusively under rainfed conditions. Due to erratic and unreliable rainfall pattern, farming was most uncertain and majority of the farmers migrated to places like Goa, Mangalore etc., to earn their livelihoods. Farming was also not viable due to high cost of inputs and dwindling net returns.

Moreover, the farmers in villages located on the fringes of the forest areas have to face yet another problem – browsing by deers. In 2006, about 65 farmers belonging to six villages in Gadag and Koppal districts (Belvanki, Kotumachigi, Mannapur, Itagi, Bannikoppa, Chikkahandigol) came together to address the issue of crop failure under dryland conditions. They tried including Ashwagandha, a medicinal crop, in their cropping system owing to its hardiness requiring less moisture and the absence of threat from deers as they are not preferred as feed. Also, the presence of fertile black cotton soils rich in organic matter and the fairly wide spread Kharif and Rabi rains made Ashwagandha a preferred crop under rainfed conditions.

The members of the group started growing Ashwagandha along with pulses and cereals, as a mixed crop. They followed low external input methods. They started benefitting, continued to grow and also motivated other farmers to grow medicinal plants. The farmers then formed a society called “Ashwagandha Belegarara Okkuta” (Ashwagandha Farmers Forum – AFF) under the Karnataka Society Registration Act 1960. Membership to the group is open to any farmer, willing to grow herbs, paying a nominal fee. The members of the group are supported with a financial assistance from the Department of Horticulture under National Medicinal Plants Mission.



AFF member showing Ashwagandha plants

To gain from collective marketing, AFF has arranged buyback arrangements with noted pharmaceutical companies. AFF started promoting medicinal species like Ashwagandha (*Withania somnifera*), Kalmegh (*Andrographis paniculata*) and Nelanelli (*Phallanthus amarus*) among farmers of neighbouring villages. Since these species require minimum moisture and can be grown successfully in drought prone areas, small farmers started showing great interest. The forum also trained interested farmers in growing these crops under organic conditions. Farmers were also trained to integrate the cultivation of medicinal plants in the normal cropping systems being followed in the area. Experts from Agriculture Universities and Research Institutions were invited to train the farmers on technical matters. Exposure visits to neighboring states where herbs are being grown were organized.

5.3 PART- II:

Formation and Management of Federations

When we use the term “federation”, we mean an organisation of organizations; a federation can be created for different purposes. It could help to access credit, or help in procurement of inputs, marketing of produce brought in by the members of the FIGs, or, it could engage in policy advocacy. It could also engage in a mix of all these or other developmental activities.

5.3.1 Organisational forms

FIGs can promote several types of federations. Some are registered, some not. Registration is necessary if the federation expects to hold properties, financial transactions, and for legal identification. In the case of land, buildings, office equipment, and so on, it would be best if these were in the name of the federation, rather than in the name of individuals. For that the federation needs to have its own identity – as a registered organisation.

The four laws providing body corporate status to organisations are:

- a. The Companies Act – for organisations whose aim is to provide a service to the larger community; profit and control are proportionate to the investment made by the owners.
- b. The Trade Union Act – for organisations whose aim is to help workers in a specific industry or work place improve their working conditions including wages; organisational profit is not the aim; members have equal voting rights.
- c. The Societies Registration Act – for organisations whose aim is to help members scientifically, culturally, politically, etc, or, to undertake charitable work for the larger public; profit is not the aim but where profit is earned, it cannot be shared by members; members have equal voting rights.
- d. The Cooperatives Act – for organisations whose aim is the social and economic betterment of members through the use of services provided by the cooperative; profit is shared among members in proportion to the use of services by members; responsible and active members have equal voting rights.

As can be seen from above, if a federation's primary aim is to provide financial and/or marketing services to its members, registering, as a cooperative may be the most sensible thing to do.

If the main aim is the social and political empowerment of the people, to do charity and the federation does not undertake any business, then registering under society may be more useful.

As it is unlikely that our members have a lot of money to invest, and members would like to continue to control their federations, registering a company at this stage may not be useful. The companies as now have a chapter on producer companies, which are like cooperatives for all practical purposes.

5.3.2 Organization of federation of farmers groups.

At the initial stage, major attention need to be paid towards organization of sustainable farmers groups. After about 1 year or so, the groups can be graded. If more



number of groups are in 'A' grade, then the farmers groups can be federated at different levels namely, village, block, district, state, national and international levels etc. Farmers groups working at grassroots level have internal group pressure, technology dissemination, and management of inputs, services and infrastructure. Experience shows that in some villages, farmers groups are also taking the help of Information and Communication Technology to get the information.

Village level federation:

It is appropriate to recognize that undue hurry should not be made in organizing higher-level federations of farmers groups. It may be better if a step wise approach is adopted in which higher level federations are organized only after the stabilization of lower level federations. The higher-level federations may be encouraged to become autonomous bodies through registration under Cooperative societies Act. These federations may sustain themselves through contribution from farmers groups and village level farmers organizations against satisfactory delivery of services. If needed, more than one federation may be organized at higher level so that farmers groups may have flexibility in approaching those, which provide better quality services.

- The village level commodity organizations may be voluntary bodies – no election but nomination of the by general body to the executive committee. But all members with equal status to act as a pressure group to redress or address the problems of a particular commodity.
- Liaisoning between the farmers groups and block level federations
- Village level federation (VLF) can develop detailed action plan of village by collecting indents from the farmers groups, crops grown, needs of the farmers, input requirements, output management strategies, etc
- Based on the detailed action plan village level federation can procure inputs and distribute the same to the farmer through farmer groups.
- VLF can manage storage facilities at village level and marketing of produce.

Block and District level federations:

Block level federation may be registered body under mutually aided cooperative registration Act. Two members may be nominated by the commodity groups of each commodity at village level to these block level federations.

Roles and responsibility of federations:

- Liaisoning between the district level and village level federations
- Horizontal net working of federations
- Provide high quality seeds, fertilizers, pesticides and other inputs
- Discuss on crop related issues in relation to market perspective and perceptions based on expert opinion and placed before the village associations.
- Pre-crop, mid crop, pre harvest and post harvest meetings are to be convened by these associations without any restrictions on number of meeting to be conducted by the associations earlier.
- Federation will act as pressure group helping policy-framework
- These federation can work as a advisory bodies for the commodity groups
- Gradually these associations can federate at state and national level federations.
- Flow of market information and market extension
- To provide global marketing information to the farmers groups of society through internet
- Storing, Packaging, grading and marketing can be done through this federation
- To export the value added produce
- Developing linkage with all developmental programmes and routed through this federations.
- Provide capacity building for these federations on management of federations, linkage with other institutions, management of forward and backward linkages, market linkages, market extension, etc.
- The federation can organizing workshops, preparation of detailed action plan of the block level federations, provide capacity building to the groups etc.



- Federation can engage a Para worker for the major commodity on service charges basis by the farmer groups
- Provide training to the Commodity groups on seed treatment, crop management practices, technical know how, post harvest management, grading, packaging, processing, value addition etc.

State and National level federations:

- The state and apex level federations can articulate policy advocacy and lobbying.
- The can develop institutional mechanism to identify partners for marketing/processing/exports.
- The federation can integrate the initiatives of APMC - contract farming - Commodity trading.
- Build the global competitiveness in post liberalization/ WTO regime in quality parameters and cost of production.
- Federation can develop market led extension, marketing of produce etc.
- They can focus on Credit, interest, crop insurance etc.

5.3.3 Principles of federations

Each type of federation, in each area, has its special characteristics. However, there are some basic principles of federating groups to keep in mind at all times. These are relevant regardless of the type of federation or its location. These principles are valid only for federations which are democratically structured, and which aim at being member-controlled and member-sensitive. Let us look at these principles.

1. Principle: Farmers create FIGs and FIGs creates federations.

FIGs are agents of their members. Federations are agents of FIGs.

Actions which we may consider taking:

- a. Form federations after promotion of enough strong FIGs.
- b. Federations can help to form some more FIGs in the area.

- c. The villages to be included for new FIGs must be decided by leaders from all the existing FIGs in the area.
- d. The formation of new FIGs by the federation may be taken up only if the development, business or advocacy agenda of the federation requires more numbers of FIGs.
- e. New FIGs may not be formed in order to create enough development, business “in order to meet the wages of staff”. Federations are not formed to meet staff salaries. They are formed to serve the ultimate members of farmers.

2. Principle: The services that a federation provides its member-FIGs, must be such that a majority of members will stand to benefit from them.

Explanation: Federation may take up several activities on behalf of member-FIGs. However, some may benefit, and some may not. Federation sometime earns profit on some activities, and loss on others. If federation earn profit and everyone gets a share, then no one complains. If, however, the business results in loss, then members who did not participated in the business get annoyed, asking why they should bear the loss. Also, for many activities, federation needs to invest money. Why should money which has come for all, be invested in activities which might benefit only some members?

Actions which federation may consider taking:

- a. Review the activities that federation undertakes. Identify those that can benefit the majority of members, if managed well.
- b. Retain only those activities.
- c. For the other activities in which only one or another section of member is interested, encourage the interested member to adapt alternate mechanisms to meet those needs.

3. Principle: The federation exists for its members, that is, the FIGs. FIGs do not exist for their federation.



Explanation: The federation exists for member-FIGs. Its business is not more important than that of the FIGs. It ought not to destroy the business of its member-FIGs. Therefore, a federation may upscale the activities undertaken by FIGs.

Actions which we may consider taking:

- a. Review the activities of the federation.
- b. Identify the problems and needs of the groups, based on this technical information, input requirement and marketing management can be done through federation. (Refer case study on onion growers' federation).
- c. If there is any activity that most of the members of FIGs already manage well, upscale the activity.
- d. Examine if help in some other form is required for FIGs from the federation. Reorganize the service accordingly.

4. Principle: A service best provided at a point nearest to the member, ought to be provided at that level, and not at the more distant federation.

For management of input and out puts for agriculture and allied sectors better to provide services at the village level itself not from the distance places.

5. Principle: A federation should have members, as many FIGs as possible.

Explanation: The more distance that a federation representative has to travel to service its members, the greater its costs. Therefore, not only should a federation's area be compact, it should have large numbers of small and marginal farmers participating from that small area, for it to be vibrant, and have impact on the development, local social, political, and economic scene. Apart from this, the more distant a federation from the ultimate member, the less interest in it. Just as farmers believe the FIGs to be theirs, so, too, farmers should feel that the federation, too, is theirs.

Actions which we may consider taking:

- a. Draw a map of our area.

- b. Note on the map the villages already covered by the federation. (Or, let us look at the villages that will be covered by the proposed federation.)
- c. Look at bus connections, distances, and so on, so that our leaders can easily move from one village to another, particularly for procurement of inputs and collection of outputs for agriculture. Based on that, define the area that the federation ought to cover.
- d. Look at how many FIGs we already have in each of these villages. Estimate how many more FIGs can promote in the same villages.

6. Principle: Active and responsible FIGs alone should have right to make decisions and vote in federation meetings.

Explanation: In our FIGs, if a defaulter becomes a leader, do we not have problems? In the same way, in our federation, let us give the right of vote only to such member-FIGs as regularly fulfill their obligations to the federation. This way, federation will have a responsible membership and, therefore, a responsible leadership.

Actions which we may consider taking:

- a. First define the responsibilities of a member in a FIG.
- b. Then define the responsibilities of the FIG in the federation.
- c. Responsible FIG can have the right to vote and stand for elections in the federation.
- d. Irresponsible FIGs will not have the right to participate in federation management.

8. Principle: Leadership of federation should mean responsibility and accountability, not privilege.

Explanation: Most leaders think that to be elected means to be privileged. True leadership is about accountability, about taking responsibility. Therefore, we need to design our federations in such a way that only responsible members take up leadership positions.



Actions which we may consider taking:

- a. Deny the right to serve on the Board of the federation, to such farmer, as have been defaulters in their FIGs.
- b. Board should be required to present an annual report and financial statements each year at the annual general body meeting. Every invitee to the general body meeting should be provided with a copy of the report and accounts.
- c. Board should present future activities and annual action plan for the next year in the general body.
- d. Board may also be required to have the budget approved by the General Body of the federation.
- e. The income and expenditure statement of the federation for a given year may be presented along with the budget for the same year.
- f. Board members may be required to settle advances within a week of the expenditure. An advance should be given only when the previous advance has been fully settled.
- g. The Board needs to be well trained in all management and policy-making matters, if the federation has to succeed.

9. Principle: Staff of the federation, including the chief executive must be working farmers drawn from the membership. The federation leaders may recruit them, and FIGs may decide wages from the earnings of the federation.

Explanation: Federation need to employ staff that feels accountable to the members. Federation can be able to question them, and even challenge them, if it feels their work is not getting done properly. For all these reasons, federation need to recruit people who can hold accountable.

Actions which we may consider taking:

- a. When federation recruits a staff, tom-tom in respective villages to let members and other farmers know that the federation is intended to recruit on a particular day, particular time and a particular place.

- b. Test and Interview the candidates, and select the best one/s regardless of caste or religion.
- c. Identify 2-3 competent persons on our Board. Ask the external agencies to train these Board members and the new staff recruited.

10. Principle: Federations should set and maintain high standards of financial discipline.

Explanation: If a federation is to guide its member-FIGs in financial discipline, then it must live up to the highest standards of financial discipline itself.

Actions which we may consider taking:

- a. Some federations have different records and registers to maintain and different cashbooks, for each donor. It is important that a federation maintain only one cash book. There can be clear separation of accounts in the general ledgers.
- b. The cash book should be closed each day, and denominations of cash on hand noted.
- c. Every month, the Board of the federation should receive monthly financial statements of accounts.
- d. The federation should get different member-FIGs to conduct internal audit of its accounts each month. This will help all FIGs know, what is happening in the federation, and will also keep it running transparently.
- e. Annual general meetings should be held with all the members of FIGs,
- f. The federation should get its accounts audited by a chartered accountant.
- g. The federation should encourage member-FIGs to have the same rigor.

11. Principle: Where a federation expects to monitor and supervise the accounts of its member-FIGs, there, it ought not to take responsibility for the writing of the books of accounts.

Explanation: If federation staff writes the books of accounts of FIGs, and also take responsibility for monitoring and supervising our work, we can expect a mess. It would

be best to leave it to FIGs to maintain their own accounts, after appropriate training, and leave the supervision to the federations.

Actions which we may consider taking:

- a. Take note of who writes the books of accounts in FIGs. If a member does not maintain the books in each FIG, ask each FIG to identify a member who is willing to be trained for this work. The FIGs can be able to identify 3-4 farmers who can be given simple training in the maintenance of books of accounts.
- b. The wages to be paid to the book writer can initially be based on the time needed to do the work, at the local wage rate. Let the FIGs decide how much to pay.
- c. Arrange for the training of the identified persons, and provide them with the necessary books and records.
- d. Federation leaders/staff regularly monitor, supervise and guide the FIG bookkeepers in their work.
- e. Make sure that the federation representative informs formally the FIG members at their meetings, about the status of their accounts.

12. Principle: For a federation to succeed, its member-constituents must be successful. For its sustainability, its member-FIGs must be sustainable.

Explanation: Just as an FIG has no life outside its members, so, too, a federation has no life outside of its members.

Actions, which we may consider, taking: As the success of FIGs is essential to the success of genuine federations.

As already mentioned, regardless of the type of federation that is promoted, the above principles need to be discussed by federations and FIGs planning to promote federations. The principles need to be fine-tuned and must be converted to practice, if federations are to have a long successful life.

It is important to mention here that if FIGs are not expected to have a long life, then most of this will not matter. If we look around us, we see rural institutions, which are owned and managed by men and women. We need to ensure that in every village, there are institutions, which are owned and managed by farmers– institutions, which have a life well beyond that of existing members – institutions that will last many generations and change the status of farmers in our area.

5.3.4 Process in formation of Federations

1. **Scope:** Federation is envisaged primarily to play the role of a financial intermediary along with other services to the FIGs in Forward and Backward linkages to the farmers, Book keeping, auditing, Bank linkages and other linkages with developmental programs in agriculture and other line departments etc. The federation is also envisaged to take up Social issues and other developmental issues.
2. **Federation jurisdiction:** Federation is a network of FIGs in the given village/ block/district/ state/ nation or any geographical area decided by the FIGs and facilitated organization.
3. **Situation Analysis:** Before starting dialogue on formation of federation with farmers groups, facilitators shall assess if there are any other federation or MACS already existing and functioning in the operational area or at cluster level covering that particular village. If any federation of FIGs exists, the process of federation formation should be in such a way that the existing federations are not affected.
4. **Common understanding at facilitating organizational level:** All the extension staff first need to be given orientation on concept of federation, need, advantages of federation, vision of the federation, etc through training and exposure visits to successful federations.
5. **Preparatory Facilitation:** Facilitator not less than 2 Years experience in the sector should take responsibility for initiating of the dialogue for formation of federations. The process of formation will take place in three or four dialogues spread over two to three weeks. The facilitation to form federation will not start with potential financial benefits, but with appraising the need for support to

ensure effective forward and backward linkages to the farmers, book keeping, auditing, bank linkages and other linkages with developmental programs of line departments, conflicts resolution, etc.

6. **Federation formation:** Willingness of the FIG members to come together to form a federation is critical for formation of federation. The members should be given prior information about benefits and likely hardships that they may face with the federation such as more meetings, paying user fees etc. so that they are given an opportunity to make informed choice before federating themselves.
7. **Stake of members:** For formation of the federation, each group may be sensitized to contribute one time-share capital. This corpus amount will be helpful for the federation to access bulk loans from the banks, MFIs. Further each group is expected to pay an annual Membership subscription of Rs. X/- to federation to get the services from field functionaries, bookkeeping, auditing, facilitation support etc.
8. Identify an appropriate place or building for meeting cum federation office:
9. **Executive Committee and General Body:** The federation will have a general body with all the FIG Members as members. The federation will have Executive Committee (EC) with one/two/three representatives from each Group/ Cluster (If there are less than 10 Groups/ Clusters three representatives, 10-20 Groups/ Clusters two representatives and if more than 20 Groups/ Clusters one representative). The federation will select 5 Office bearers viz., President, Secretary, Vice President, Joint Secretary and Treasurer. They will be facilitated to elect the EC
10. **Federation meetings:** The General Body shall sit at least once in Six months. In the initial phase, the federation may be encouraged to have General Body meeting once in three months. The Executive Committee of Federation shall sit at least once in a month.
11. **Setting norms:** Series of facilitations by Community Coordinator should take place in setting up of appropriate objectives and norms for the federation. Norms include role of federation in preparation of action plan for development of agriculture and allied sector, modalities for forward and backward linkages,

regular scheduled meetings, participation, decision-making, and mechanism for bookkeeping for FIGs and federation etc.

12. **Registration under appropriate act:** After this process the Federations will be facilitated to register under appropriate act. A registration workshop at Federation level may be organised. A request may be made from Federation to Joint Registrar Cooperative department to attend this workshop so that the registration of Federations will take place in the second day of workshop. Sufficient homework shall take place to do this registration at block level. Before registration of federation will be facilitated to understand and develop appropriate bye – laws.
13. **Bank Account and withdrawal:** While filing for registration, the Federation should be facilitated to open a Bank Account in the name of federation. Two or three office bearers among President, Secretary and Treasurer will sign the cheques to draw the money from federation account. The federation Executive Committee will make resolution for every financial transaction. The federation will write cheque only after resolution from Executive Committee.
14. **Bookkeepers:** Each Federation may have a group of three or four book-keepers to take care of book-keeping of its member clusters. One of these book-keepers will also write the books of accounts for federation for which federation will pay appropriate honorarium to the book keeper.
15. **MoU between facilitating organization and Federation:** Promoting organisation and Federation would have common understanding (MOU) on the roles and responsibilities of each of the partner in strengthening the federation.
16. **Role of external agency in the initial years:** Every meeting of federation, whether EC or General Body, the facilitator will compulsorily attend and extend necessary facilitation support. The facilitator will share the collected required information from FIGs/clusters and submit to federation for decision-making. The facilitator will take responsibility to ensure that regular monthly meetings of EC and General Body meetings of Federation are held.
17. **Capacity building:** The member of the Executive Committee should be given training in Leadership, federation concept, federation Management, Financial Management, linkages, input and output management etc.



18. **Networking:** The federation will be encouraged to deal with local banks/apex institutions, line departments to access further services and linkages. The facilitator shall take all appropriate steps to encourage federations to participate in the appropriate district/state level forums so that effective networking takes place.
19. **Interface with other Federations:** The Federation will be facilitated and capacities should be built to develop and maintain good relations with other federations for sharing and learning.
20. **Bank linkage:** Now the NABARD has developed guidelines for banks to finance the Federations also, the facilitating organizations should take a proactive role to link the Federations with banks.
21. **Procurement of Inputs:** Based on the collected and consolidated indents from the group, report to be submitted to executive committee/general body of federation. Later bulk procurement of inputs may be directly from the wholesaler/ company.
22. **Marketing of produce:** Federation can maintain storage facilities. Value addition of output through groups, procurement of produce, marketing of produce etc. can be done through federation.

Finally, we will look briefly at the FIGs themselves – the very foundation of the federations. A true federation, however, cannot be strong, if its very foundation, the FIG, is weak. We will touch on a key area that needs nurturing, if the FIGs are to be strong and have a long life. The aim of this material is to help you design/redesign your federation to be more member-controlled and member-sensitive. However, it is important that the contents of this booklet be thought through, debated on, fully understood, and only then applied to your federation.

Let us discuss one successful case.

5.3.5 Case study - II: onion growers' co-operative purchase and sale society limited

In Maharashtra the major onion growing districts are Nasik, Pune, Ahmednagar,

Satara, Dhule, and Jalgaon. In Ahmednagar district, Parner taluq is leading taluka for onion area and its production. The onion growing farmers are not able to keep the benefits' of production because of dominance of middle men, highly fluctuating prices, poor storage facilities, lack of holding capacity by farmers and post harvest losses like sprouting, rotten and evaporation. Due to this problem it is necessary to construct, the onion shed storing onions upto 4-6 months period., marketing of onions, etc. The Government of India has also declared that Ahmednagar district as a "Export Zone" area for onions. Taking this into consideration, in Ahmednagar, the onion growers have cooperatively established a society named as Ahmednagar district onion growers' co-operative purchase and sale society limited on 10 January 2003. Society has taken the membership of the NAFED, APEDA, NHB, Maharashtra State Agricultural Marketing Board (MSAMB), Exporters, etc.

Presently there are 1100 members in 300 villages in 14 blocks in Maharashtra, the Society office is at Ahmednagar, Packaging and grading centre is at Supa in Parner taluq of Ahmednagar dsitict.

The main objective of the society is to provide technical information, increase onion production, storage facilities, market facilities, marketing information and marketing of onions.

Activities of the society:

Inputs:

Seed, fertilizers, organic pesticides and fertilizers and other inputs will be supplied through the society to the members. In case of seeds there is no credit facility where as for fertilizers the members should pay the amount to the society within 2-3 months, for which no interest is charged by the society.

Procurement of Onions from the farmers:

In each block one sales man was selected by the society who is a Diploma/ B.Sc



in Agriculture and he will go and collect onions from the village and send it to Packaging and grading centre. Within fifteen days the farmers receive payment in the form of cheque or D.D. The sales man will get Rs. 2000/- salary per month and ½ percent as service charges from the society.

Storage:

Two types of storage are there. At members level 25 tonnes storage units are there which were provided by Central Bank or DCCB on loan basis with 8 per cent interest. Preparation of bank proposals, sanctioning of the loan, assistance in construction of RCC structure is done by the society. Presently 450 farmers are having storage facility of 25-50 metric tones. Remaining farmers are following ITK storage facility only. The other storage facility is in Supa

Packaging:

Packaging is done at Supa. Every day 10 tonnes onions are packed through packaging machines in 40-60-80-100 mm grading in 25 kgs, 50 kgs and 100 kgs bags. Presently they have a centre at Supa in Parner taluq and they are also going to open another centre at Umbre in Rahuri taluq and Sangamner.

Marketing:

Procured onion is graded and packed at taluq level. The Society gets the information from the Saphal markets through NDDDB channel from Bangalore, Delhi, Mumbai etc. through phone call. Bags, Transport charges and 2 per cent service charges to the society have to be borne by the farmers only for local marketing.

Export marketing of Onions:

Society received Import and Export code No. for exporting of onions to foreign countries from the marketing board. Presently society is exporting onions to UAE, and other Arab countries, Singapur, and Great Britain. The marketing board has given the target to society to export about 10,000 metric tones of onions. Bags, packaging charges, shipping rent and 10 per cent service charges to society have to be borne by the farmers for export marketing.

Training:

- Crop Cultivation practices of onions will be given by Rajguru nagar Onion and Garlic Research Institute.
- CD had been given to farmers on cultivation practices.
- One day training has been imparted on plantation, weeding, sowing, fertilizer application and cutting of onions

Outcome of the society:

- Sharing of farmers experiences of problems and solutions
- Easy access to innovations and techniques of common interest
- Accessing credit facilities and enabling such facilities to reach significant numbers of beneficiaries
- Distribution of improved variety of seeds and other inputs
- Information on market trends

5.3.6 Case Study - Collective farming, collective benefits - A case of Women Farmers Collective



Access to land is the greatest limitation, especially for the poor women. The problem becomes more acute when these women are single and neglected by families, often leading to hunger and starvation. The Tamil Nadu Women's Collective has succeeded in enabling such women to come together, pursue collective farming, produce food for the family and lead a life with dignity.

In almost all the villages in India, there are about 20-30% of women who remain single, either as widows or abandoned by their families and society, who individually shoulder the burden of caring children and elders in their families. These women are either landless or have very small pieces of fragmented rain fed lands. Owing to lack of resources to invest on their own land and lack of capacities to manage their farms, these women end up doing low skilled tasks in agriculture and cattle rearing, mostly as wage labourers. Tamil Nadu Women's Collective is a network of 35 women headed non profit organisations in Tamil Nadu working for the empowerment of the rural and marginalized communities. The Collective started in 1994 as a registered society and covers around 20 districts in Tamil Nadu. The Collective conducted a study in 13 villages to understand the status of single women, widows and landless women farmers in these villages. This was done with the help of Women Farmers Sangam of Tamil

Nadu Women's Collectives, already established and functioning in the villages. The sangam also studied the availability of unutilized and uncultivable lands in that area. The details of the study were discussed at the Sangam meetings on how to engage the landless women in agriculture activity with the available unutilized land. During the discussion, the idea of collective farming emerged. The prime objective of this collective farming is not only to ensure food security but also to ensure the safe food through adaptation of organic farming methods. After a series of discussions, certain criteria were identified for promoting collective farming initiative based on following principles

- The farmers' collective should have maximum 10 members consisting of women who are either widows, landless or single. The group should decide on the size of land to be farmed under collective farming and lease the land for three years. One-third of the crop yield should be shared with the land owner. The members should agree to grow local food crops of daily use such as grains, vegetables, pulses. The group should maintain a bank account, records and registers bringing transparency in accounting. Presently, collective farming is being promoted with 15 farmer groups in 13 villages of Tuticoin, Virudhu Nagar, Madurai, Salem, Thiruvannamalai, Vellore, Kancheepuram, and Thiruvallur districts in Tamil Nadu.

Farming together

Training programmes were organized for the farmers' collective on participatory planning, decision making, crop choice, method of farming with the help of eminent resource persons like Dr. G. Nammalvar. The training programmes helped women learn some practical skills like preparation of different bio inputs. With continuous support and guidance, the women farmer's collectives have gained necessary skills on agriculture, improved their decision making capacities and leadership qualities. Tamil Nadu Women's Collective supports each farmers' collective with an amount of Rs.10000 as seed money for meeting expenses like buying seeds, bio inputs etc.

The allotment of the work is decided in the weekly meetings during the cultivation period. All the farm works are shared equally by all members using a revolving system



of labour so that all the members are engaged in all type of farm activities. As the focus of collective farming is primarily on meeting family food needs, right now, they are not marketing their produce. The produce from the collective farming provides food for the family for atleast 15 days in a month. Weeds harvested in collective farms is also being used as fodder for the livestock. The farmers collectives are also getting support from their neighbouring landholding farmers. The landed farmers help and encourage these women by providing the raw materials such as cow dung, cow urine which are required for bio input preparation.

This relationship has also led to a process of learning and sharing between landless women farmers and the landholding farmers. There are challenges too, like the delays in monsoon and frequent power cuts. Also the soil of the collective land is of very low quality and almost dead. It needs more organic inputs to regenerate. Not being disheartened with these challenges, these women discuss alternative farming methods to overcome them. They are confident that continuous application of bio inputs will help in improving the soil health which will result in better incomes in future. Considering the high cost involved in purchase of seeds for their farming activities, the women's groups are planning to develop seed producers in their group and establish a seed bank in their village.

“We are happy to have a piece of land where we are able cultivate and gain experience in organic farming methods. We are happy and proud to be a farmer to produce, eat and feed our families with poison-free food and thus ensuring better health”, says a woman farmer.

For more details, contact Ms. Ponnuthayee, Tamil Nadu Women's Collective, No. 79, Senbaga Vinayagar Koil Street, Keezha Bazaar, 7th Ward, Vasudevanallur, Sivagiri taluk, Virudhunagar - 627 758. www.leisaindia.org



Members harvesting groundnut crop from a collective farm

5.4 Limitations and difficulties in Farmers' Organisations:

There are other difficulties, which must be overcome if groups are to develop and flourish in the long term. Often these are problems of day-to-day management, such as farmers not having enough time to participate as fully as they would like, or having difficulty in finding fees or other contributions required. Farmers will weigh these investments against benefits, but often these and other pressing practical concerns can become a difficulty for farmers' groups.

According to the circumstances in which specific organisations are formed, each group will need different types of support, resources and information. Access to this can affect how groups perform. In larger groups or networks, difficulty in reaching decisions and resulting internal conflict is more common. If objectives are not achieved, or results do not come up to expectations, members may lose interest. Groups also have to deal with external pressure or influence, and always have to operate within the local political and economic environment. Challenges faced by groups include ensuring that everyone can be involved, and avoid self-interest and dominant voices.

Although working together is beneficial in many situations, it must be recognised that organising for the sake of organising, or organising because it is requested by

outside projects will not necessarily bring the results expected. Successful groups take some planning, thought and careful consideration of what form they should take in order to reach their goals. Would a co-operative work in the local economic climate? Local or traditional institutions already exist that can be built on or formalized? Members should also look at why it is beneficial to be in a group, and consider all their options.

5.5 Successful groupings

By looking at examples of success, we can begin to draw out some common characteristics of effective groups. Research and experience with groups shows that the most successful are often small, informal groups, formed by people of similar backgrounds or concerns, who have a clear objective and vision, are responding to commonly felt needs, and share a high degree of trust. Members of successful groups also realise that the benefits of organising outweigh the costs. They are able to secure adequate support, clear rules and responsibilities, hold meetings regularly, communicate effectively by fulfilling the needs of the members. These groups are often have focused on income generation, and many have on savings or emergency fund.

Legal status is also usually needed for an organization to be recognized by public authorities, or access public services. It can also be useful when finding partners and institutionalizing into more formal structures – developments which can help an organization to progress and move forward. Supportive local policies and an institutional environment are of critical importance. Power relationships at the local and district level are often complex, and strengthening farmers' voices, and making sure they are listened to, are crucial elements of sustainable agriculture.

5.6 Let us sum up

Many groups organise themselves as a response to a felt need. If this need is resolved, members may feel that working as a group is no longer necessary, or that they need to change their objectives to suit the new situation. As such, some groups are not

meant to last forever and it is valid for them to achieve their objectives and move on. What is important is that a group has a clear vision of where it is going and what it wants to achieve – this vision can be adapted over time. In most circumstances, farmers' organisations are beneficial to those involved, although choosing the most appropriate type of organisation, and its internal management, needs careful thought in relation to how to achieve objectives.

Finally, that farmer's organisation is critical and central for sustainable agriculture. This works at every level, from farmers experimenting together to locally improve techniques, to jointly representing their interests at an international level. Given the difficulties faced by farmers, every effort is needed in order to achieve the improvements needed in their various circumstances. Farmers' Interest groups, networks or federations can all make a huge contribution to raising awareness and campaigning for change. In the majority of cases, strong local organisations are, and will continue to be, key to building sustainable development of agriculture.



Unit-6

Role of KVKs in Agricultural Extension for Agricultural and Rural

Structures

- 6.0 Objectives
- 6.1. Introduction
- 6.2 Role of KVKs in Agricultural Extension for Agricultural and Rural Development
- 6.3 Perspective of Farmers' Training and their Capacity Building
- 6.4 Role of Scientists in Farmers' Training through On Farm Testing (OFT) and Front Line Demonstrations (FLD)
- 6.5 Sustainability of Agricultural Extension through KVKs' Capacity Building Programmes

6.0 Objectives

After going through this unit, you will be in a position to :

- Understand the extension organization like KVK, its meaning and objective in transfer of agricultural technologies;
- Discuss about the roles played by the KVKs

6.1 Introduction

Agricultural extension in India is largely deployed by government, implemented mainly through government institutions and to some extent through non-government agencies. Krishi Vigyan Kendras (KVKs) or Farm Science Centres as institutes of inducing behavioural change, are being managed by both government and non-

government organizations. Literally, Krishi Vigyan Kendras have to serve as repository of scientific knowledge that is useful to the entire district, which is its jurisdiction. In India, agricultural extension and extension education are interchangeably used with the same connotation as used in American tradition, meaning “Extending Information” as a means of educating people to solve their problems. As a result, agricultural extension in India was more of “Informative Extension” than “Emancipatory Extension” which was more common among socialist and Christian traditions. One can find several ideas on what is agricultural extension. It is a process to assist farm families to make decisions through which they reach their goals as good as possible.

This implies that there are two different aspects in this process :

1. Adult education : the extension agents try to increase the competence of farm families in decision-making.
2. Communication : the extension organization provides the farm family with information they need for making sound decisions.

Crucial is that farmers are free to follow the advice of their extension agents. Therefore, an extension organization can only bring about changes in the behaviour of farm families whom it tries to help them to reach their own goals better. Thus, it attempts to induce voluntary behavioural change rather than imposed changes. Voluntary behavioural change that is in the interest of the society is more useful even if it is not in the interest of individual farm families. This is essential in the changing environmental situation as a result of intensive agriculture.

Changing needs of farmers for support from agricultural extension

As a result of rapidly changing agricultural scenario at the advent of WTO, farmers have to make different decisions than in the past. They now have to face decisions on –

1. Which technology to use?
2. How to manage this technology? Experience shows that the success of a technology on farms depends to a large extent on its management.



3. How to use his capital, land, labour in the most profitable way? The methodology taught in farm management courses to make these decisions becomes more and more important for financial success of a farmer.
4. How and when to change his farming system?
5. Whether or not to take a full time or part time job outside agriculture for himself or his children? This decision is of great importance for the welfare of the farm families. Everywhere with increasing incomes, the proportion of the labour force working in agriculture decreases. Also, in India not all farm families will be able to make a decent living only from agriculture.
6. For which products is there a good demand in the market? With the rapidly changing markets, farm income depends a lot on the choice the farmer makes on which products to grow and whether he produces the quality the market requires.
7. How to increase the share he gets from what the consumer pays for his products? How and when to buy inputs and sell products? Can it help to start a co-operative?
8. How to make decisions collectively on resource use and in farmers' associations? It is doubtful whether Indian agriculture can develop successfully unless farmers strengthen their associations.
9. How to find and use the most relevant and reliable knowledge and information, which the farmer needs for making decisions? Farmer, who do not receive and use new knowledge rapidly, will have difficulties to compete with other farmers inside and outside India. But they have first to check whether the information they receive is reliable and relevant for their situation.
10. How to get credit and production inputs on time, place and at suitable rate to derive support and profits by the farmers?

It may be wise for the managers of extension organizations to decide that they will not try to help farmers with all the decisions they have to make, but to concentrate on few decisions, which the staff of the organization is really competent. The multi-

disciplinary organization like KVK should try to make their staff competent enough to support farmers on decisions considered as important by the farmers of the district.

6.2 Role of KVKs in Agricultural Extension for Agricultural and Rural Development

Rural development encompasses the all round development of people in its effective dimensions of economic, social and agricultural scenario. Of course, this development may exclude the neo-rich people, those living in rural areas but deriving income from urban based activities. A quarter century ago, in 1975, World Bank in its sector policy paper on Rural Development, defined “Rural Development as a strategy designed to improve the economic and social conditions of life of a specific group of people – the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas”.

Even today, this definition holds good. Hence, it is to be seen how these mandate of reaching the poor with benefits of development to be achieved? There is no second opinion that in this path of the world (South Asia) and for that matter may be on the whole third world nations, rural development could be attained through improving agriculture, forestry, animal husbandry, dairying, sericulture, fisheries, rural engineering, and rural crafts, and empowering rural masses to enable them to practice these occupations to earn more and live better in a more specific term. Agriculture extension, here, has an important contribution to make. It is a tool that can be used to fight poverty, to foster education of rural people’s, and to promote behaviour and technology that link high productivity with natural resources sustainability. In promoting local organizations, extension also plays a vital role in empowering rural communities.

In India, the extension efforts have largely been taken up by the state departments of agriculture and other disciplines as a state subject. The Indian Council of Agricultural Research (ICAR) as the apex body to provide new technologies in agriculture and allied

aspects has its own transfer of technology activities too. The extension efforts of ICAR have evolved through national demonstration projects, operation research projects, lab to land programmes, and integrating of these approaches to Krishi Vigyan Kendras (KVKs) since 1974. Thus, KVKs are attaining the focal point for front line transfer of technologies for all developmental activities related to agriculture, community and industries in rural India. The KVK movement has been further expanded by re-mandating 53 zonal agricultural research stations to perform as KVKs. Thus, the KVK movement has covered more than 300 districts of the nation.

Farmers capacity building is often seen within the limited perspective of giving them the knowledge and skills required to practice crop and animal husbandry in a better way. Though, knowledge and skills are fundamental to efficiency in any enterprise, the Indian farmers need more than that because of the limitations and complexities under which they operate. The KVKs which have been mandated to work with farmers, farm workers and rural youth directly as well as through field extension functionaries have the greatest challenge to make their clients more efficient, specialized and to be economically active. The fact that the need for agricultural and rural information and advisory services is to intensify in the foreseeable future exerts more pressure on their performance and hence the expectations run higher. Following are the 10 cardinal roles which KVKs can play and prove themselves as efficient organizations in changing the rural scenario for better.

6.3 Perspective of Farmers' Training and their Capacity Building

KVK as an effective extension organization for dissemination of desired agricultural knowledge and information

Agriculture extension as an HRD innovation has been spreading in recent years. The primary goal of agricultural extension is to assist farm families in adopting their production and marketing strategies to rapidly changing social, political and economic conditions so that, then can, in the long run, shape their lives according to their personal

preferences and those of the community. The task of extension, thus, is to improve interactions among the stakeholders within the agricultural knowledge system (AKS), so that the farmers have optimum access to any information that could help them enhance their economic and social situation.

The increasing adoption of organized extension services in the developing countries reflect on the importance given for agricultural development. However, as organizations have grown, their work changes in their hierarchical structure too resulting in gap between field level agents and their controlling offices. Thus, the management of organization has become a preoccupation for many rather than the development efforts. Another significant constraint faced by many such development organizations is the lack of technically qualified, updated and multidisciplinary team of personnel who can cope with the divergent needs of a farmer. Then, it is no strange that Indian agricultural extension has achieved success mainly in homogenous environment. In this backdrop, Krishi Vigyan Kendras (KVKs) as organizations of frontline extension status have assumed a tremendous role to meet the information needs of farmers on all aspects related to their daily activities including home science and home economic practices. With the emphasis on all aspects of rural life, KVKs can be harbingers of overall development on a scientific basis with social justice.

KVKs with their location near to a district headquarters, with financial support from ICAR and backup from their host institutes have got all the required paraphernalia to become the information centers on all aspects of agriculture. These information centers are also the learning centers through the demonstration units and hands-on experience provided during Training and Visits to KVK farm. Thus, the information access, transfer and utilization would likely to be better off in future.

KVK for knowledge and skill building among farmers through training

Training is the key to bring about the necessary changes in individual attitudes. Hands-on experience and learning by doing with theory and practice at 1:3 ratio are



emphasized in KVK activities to promote the acquisition of skills by the participants. Though, the acquisition of skills is a time consuming exercise, skills once acquired could be retained much longer than the knowledge component. The instructional units and the demonstration plots of the KVK farms could be effectively used to build skills among farming community and facilitate the transfer of skills to second generation users through supportive visuals.

Skill development programmes like Farmers' Field Schools (FFSs) organized by KVK, Raichur of Karnataka on the integrated pest management in cotton is a living example to this achievement. The farmers could identify and differentiate the natural enemies from the pests at early stages and plan for appropriate IPM measures. Such skill building was considered as an outstanding achievement considering the fact that the agricultural graduates and development department officials found very difficult to master such skills. The FFSs were organized in collaboration with FAO and the skill building among farmers has been very useful in minimizing the pesticide load on cotton, reducing the cost of production and maximizing the yield and income from cotton.

6.4 Role of Scientists in Farmers' Training through On Farm Testing (OFT) and Front Line Demonstrations (FLD)

KVK as technology developer through Farmers' Participation

Though the KVKs do not have the mandate to develop technologies through formal research projects, the assessment and refinement attempted by KVKs in the form of on farm testing and front line demonstration, which are always conducted with farmers, can lead to generation of an innovation or new idea. It has been proved from the available literature that agricultural systems in rainfed areas have changed more because of the innovative capacities of rural people than because of the modern science (Reijntes et. al. 1992). Most KVKs are located in rural areas and have closer interaction with heterogeneous category of farmers, entrepreneurs and homemakers. Increased emphasis on resource poor production system (CDR production system) necessitates the

integration of local knowledge and farmers wisdom while developing and validating technologies to CDR system. Because of their rural setting and more frequent interaction with rural families, KVKs are in advantageous position over formal research institutions to validate indigenous knowledge as scientific recommendations or to give feedback to formal research system for the required integration.

In addition to working directly with farm families, KVKs also have linkage with non-government organizations, who have engaged in promoting new external input agriculture and social upliftment through community approaches. As the country is progressing towards commercial and modern agriculture, there are various categories among farming communities from subsistence to commercial level. It is understandable that each category farmers need different technological support and research institutes have failed to generate technologies specific to each of the farmers' categories and production situations. Identification of homogenous target or user groups, which is a fundamental requirement for participatory technology development, could be better done by KVKs with their wider contact at the grass root level.

On-Farm Testing for Appropriate Location Specific Technology

These are conducted on the farmers' fields on such problems where the appropriate technologies are not available for particular agro-climatic situation to transfer, and the relevant research information available does not suit the situation from the point of view of the farmers. The main objective is to give overriding importance for farmers' perspectives and participation at all the steps of on-farm testing viz., problem diagnosis, planning, experimentation and extrapolation. On-farm testing facilitates validating and refining location specific technologies and also updating the grass root level extension workers with the latest agricultural technologies.

KVK as forerunner of conducting Frontline Demonstrations

Demonstration provides a visual evidence of the superiority of the recommended technology under farmers' own conditions (Nagaraja, 1995). Frontline demonstrations

prove the productive potential of new technologies on the demonstrated technologies and serve as a platform to train farmers and field extension functionaries on the crop production practices.

The possibility of productivity improvement of major crops has already been demonstrated in several states in the country by adopting advanced crop production technologies. While the national productivity for groundnut was 833 kg/ha during 1998-99 the productivity achieved in frontline demonstrations taken up in Karnataka and Tamilnadu stands at 1692 kg. Per hectare in the same year. In sunflower the comparative productivity was 584 and 1235 kg. Per hectare respectively. This shows that the demonstrations have proved the productive potential of the new technologies in farmers' conditions under their own management.

Demonstrations are being used to create technical leadership in the villages as the demonstrators turn out to be masters of the technologies demonstrated in their fields. These demonstrators are given the role of teachers / experts in the conventions (farmers - farmers interactions), field visits (visits by farmers from neighbouring fields and villages) and training to extension field functionaries

Successful frontline demonstrations give scope for conducting field days (farmer to farmers) by the KVK scientists to convince the other farmers in adopting the technology demonstrated by satisfying the urge of the farmers 'Seeing is believing'. There were instances where the successful demonstrators brought with them the neighbouring village farmers to KVKs to request the KVK staff to take up demonstrations in their villages also during subsequent seasons. Some of the demonstrators who had abilities and willingness to express their experiences were invited to KVK training programmes as resource persons. These things prove the utility of demonstrations in creating technical leadership among farmers in the villages who can take up the task of popularizing new technologies without the KVK assistance or indirectly as promoters of new technologies.

6.5 Sustainability of Agricultural Extension through KVKs' Capacity Building Programmes

KVK as coordinator among Extension Organizations and promoter of Extension functions

Services to farmers should not be expected from a single organization and through same channels. The actors (the various extension organizations) engaged in farmers services are many like, KVKs, State Department of Agriculture, Extension Directorate of State Agricultural Universities, NGOs, Private Agri-Business Houses and Farmers Organizations etc. All provide the services to the farmers without involving or collaborating with other actors often resulting in duplication of services to same clients, loss of time, energy, inputs, deprivation of services to some and more importantly no desired impact. Hence, it is essential that some one among the actors takes the coordinator's role among the extension organizations in doing all these to attain the objectives as expected. Perhaps, KVK is the only suitable answer to that effect.

Coordination implies that all actors are aware of and respect each others' role and objectives. Different types of extension activities by different organizations to serve farmers in a holistic manner for their all round development have purposes and should compliment one another. In this regard management counseling to institutions takes on a strategic importance. Therefore, this type of extension is a critical component of most action. KVK must take advantage of services offered by other actors and concentrate fully on core responsibilities in building capacities among the farmers. As a principle, an extension organization like the KVK, should identify its objectives first i.e. what it wants to achieve, and then focus on the functions that are most important in achieving those objectives.

KVK as single window server for agriculture and rural development

The importance of an appropriate information package and its dissemination as an input has assumed added emphasis in this information age. The technology



dissemination component under National Agricultural Technology Projects (NATP) has been designed to address the constraints within the existing technology transfer system and to transform it into a well integrated and demand driven technology dissemination system. The Agricultural Technology Information Centres (ATICs) are being established by the Indian Council of Agricultural Research (ICAR), as single window facility at the ICAR institutes and SAUs to enable farmers to access the required information and solutions to their problems along with the products available from the institute. Though the farmers are assured of a better service, they have to go to related institutes or universities, which are normally located away from the rural areas. Hence, similar facilities are required in the rural areas, preferably in each taluk or at least in district level, so as to enable the farmers to avail such services.

The KVKs and the Zonal Agricultural Research Stations, which have been re-mandated to additionally function as KVKs could provide this much required single window service to farming community as these centers are within the farmers' mobility capabilities. The SAU-KVKs are normally located within the premises of Agricultural Research Stations, thereby possessing facilities to analyze the samples brought by farmers, to get technical advise from experts who are involved in research and to serve as a single window delivery system for the University in the rural areas. Other KVKs which are not supported by SAUs, can use the host institute facilities and develop linkage with input agencies and developmental departments to overcome this lacunae and try to provide or arrange for the needed services and supplies to the farmers.

The cornerstone of India's agricultural revolution has been the availability of improved crop varieties, breeds of livestock, plant materials and their production / management technologies. However, as the diversities are increasing at the micro level, the need for agricultural services have also increased many fold, demanding location specific and farm specific services and supplies. Many KVKs do operate revolving funds to produce at least part of the input requirement for their transfer of technology activities, but not to meet the complete requirements of farmers in their district. But



KVKs can use the progressive farmers to produce seeds of varieties, which are in great demand in that area under their supervision so that quality seed material is procured and sold to farmers. Similarly, bio-fertilizers could be multiplied by KVK farms or laboratories and encourage farmers to take up large-scale multiplication in their own situations.



Unit-7

Public - Private Partnership

Structures

- 1.0 Agriculture Development
- 2.0 An overview of Agricultural Extension System in the Country
- 3.0 System Constraints
- 4.0 Need for pluralism in Agriculture Extension
- 5.0 National Agriculture Policy on Public-Private Partnership in Agriculture Extension Management
- 6.0 Xth Five-Year Plan on Public-Private Partnership in Agriculture Extension Management
- 7.0 Policy framework for Agriculture Extension on Public-Private Partnership in Agriculture Extension Management
- 8.0 Scope for Public-private partnership in Agriculture Extension Management
- 9.0 Public-Private Partnership in Agriculture Extension Management - Experiences
- 10.0 Need for policy framework for Public-private partnership in Agriculture Extension Management
- 11.0 Potential Private Partners in Public-Private Partnership
- 12.0 Potential areas for Public-Private Partnership in Agriculture Extension Management
- 13.0 Private-Public Partnership Mechanism
- 14.0 Implementation of Central / State / Universities / ICAR programmes through private sector
- 15.0 Selection of Partners
- 16.0 Framework of MoU
- 17.0 Joint Account
- 18.0 Certification
- 19.0 Regulation
- 20.0 Participatory Monitoring and Evaluation Mechanism

1. Agriculture Development

- 1.1 With a 24.2 percent contribution (triennium ending 2001-02) to the gross domestic product (GDP), Agriculture still provides livelihood support to about two-thirds of country's population. The sector provides employment to 56.7 percent of country's work force and is the single largest private sector occupation. Agriculture accounts for about 14.7 percent of the total export earnings and provides raw material to a large number of industries (textiles, silk, sugar, rice, flour mills, milk products). Besides, the rural areas are the biggest markets for low-priced and middle-priced consumer goods, including consumer durables and rural domestic savings are an important source of resource mobilization.
- 1.2. Any change in this sector, positive or negative, has a multiplier effect on the entire economy. A nation of more than a billion people cannot dependent on imports for the basic item like food grains. The agriculture sector, therefore, acts as a bulwark in maintaining food security and in the process, national security as well. The allied sectors like horticulture, animal husbandry, dairy and fisheries, have an important role in improving the overall economic conditions and health and nutrition of the rural masses. To maintain the ecological balance, there is need for sustainable and balanced development of agriculture and allied sectors. Recognizing the crucial role played by the agriculture sector in enabling the widest dispersal of economic benefits, the approach paper to the Tenth Plan has emphasized that agricultural development is central to economic development of country.

2. An overview of Agricultural Extension System in the Country.

- 2.1 Public sector extension is a state responsibility that has undergone several transformations since independence. Initially, the focus of extension was on human and community development. But there has been a steady progression toward technology transfer, within the policy framework of food security. The most significant recent development was the introduction of Training and Visit (T&V) extension management system, starting in the mid-seventies. T&V extension was well suited to the rapid dissemination of broad-based crop management practices for the high yielding wheat and rice varieties released

since the mid-sixties. Given this focus on disseminating Green Revolution Technology for major cereal crops, extension activities have been largely carried out by state Department of agriculture (DOA). Other line departments like Animal Husbandry (DAH), Horticulture (DOH) and Fisheries (DOF), have primarily focused on the provision of subsidized inputs and services to farmers, with little attention and few resources being allocated to extension.

By the early 1990's, with the completion of the third National Agricultural extension Project (NAEP), the important contributions that the T&V extension approach had made to agricultural development were duly recognized. But it was also realized that it needed to be overhauled in meeting the needs of farmers in the 21st century. It was recognized that extension should begin to broad-base its programmes by utilising a faring systems approach. For example, attention should be paid to the needs of farmers in rainfed areas and to diversify extension programmes into livestock, horticulture and other high value commodities that are capable of increasing farm income. A realization has also dawned that issues like financial sustainability, lack of farmer participation in programme planning and the weak links with research are serious constraints facing the current extension system.

Introduction of Extension Reforms is a major intervention in overhauling the extension system through process and institutional reforms mechanism. Extension Reforms focus on Reforming public sector extension, Promoting private sector, Augmenting media & information technology, Mainstreaming gender and Capacity building. Commitment to promote public-private partnership in agriculture extension management is demonstrated by reserving minimum 10 percent of the funds through public-private partnership.

3. System Constraints.

3.1 Based on background studies carried out in the preparation of NATP project, more serious constraints identified are summarized as follows:

3.2 **3.1.1 Multiplicity of Technology Transfer System:** At present, each line department is responsible for its own extension and technology transfer programme and there is little coordination across different departments. With the exception of the DOA, the other line departments have emphasized the

distribution of subsidized inputs and services (i.e., material technology). Little effort has been given to the dissemination of improved management practices that would increase the productivity of these crop and livestock production systems. As a result, a situation exists where each line department operates its own parallel technology transfer system, with only the DOA extension system reaching the village level. If resources were not a constraint, some redundancy within the agricultural technology system (ATS) might be appropriate. However, the duplicative structure of the current system is very inefficient.

3.1.2 Narrow Focus of the Agricultural Extension System: The DOA extension system has emphasized the dissemination of crop management practices, especially for the main cereal crops grown in irrigated areas. It is recognized that some field extension personnel provide ad hoc advice to farmers on a range of subjects and that the situation differs from state to state. In general, few extension resources have been allocated to other commodities, such as oilseed, pulse, sorghum, millet and horticultural crops, and most livestock enterprises. Additionally, in spite of serious natural resource management problems, limited activities have been undertaken to develop and transfer sustainable technologies to farmers.

3.1.3 Lack of Farmer Focus and Feedback: An important reason why research and extension organisations have not focused on farmer problems is the lack of an effective feedback system. To create a demand-driven research and extension system, it is essential that farmers be given access to linkage mechanisms through which they can articulate their problems and needs. With the exception of selected NGO operated programmes and dairy farmers who participate in Operation Flood governance programmes, the vast majority of India's small and marginal farmers, especially women lack an effective voice in influencing research and extension priorities. Given the experience in some parts of India and elsewhere in Asia, it appears that one key factor in improving these feedback systems is to organize farmers into functional groups, such as self-help groups (SHGs), farmers interest groups (FIGs), commodity associations (Cas), and / or other types of farmer organisations (Fos). Besides providing an effective channel for dissemination of technology to large numbers of small and marginal farmers, these FOs can also provide an effective feedback channel to research and

extension. Therefore, the lack of farmer organisations, especially among resource poor farmers, and the absence of formal feedback mechanisms to most R_E institutions are serious constraints in developing an effective ATS.

3.1.4 Inadequate Technical Capacity within the Extension System: The T&V extension system directed considerable attention and resources to the fortnightly training of block-level agricultural extension officers (AEOs) and village extension workers (VEWs). However, little attention was given to developing a cadre of well-qualified Subject Matter Specialists (SMS) with both technical competence and the professional skills needed to pass their knowledge and skills to the extension field staff and farmers'. For example, few SMSs have MSc degree that would enable them to better understand research findings and to assist their research counterparts with on-farm trials, also most SMSs are promoted to these positions on the basis of seniority, not technical qualifications and competence. In essence, SMS positions are viewed as just a step on the promotion ladder, not an essential component in an effective ATS that links the research system to the field extension staff. Finally, because SMSs are not viewed as an indispensable cadre within the extension system, they are seldom given the necessary in-service education and training that would prepare them for their technical backstopping and training responsibilities. In sum, the lack of competent SMS across all line departments is a serious constraint that NATP must address.

Presently, the Krishi Vigyan Kendra (KVKs or Farmer Knowledge Centres) are the only district-level institution with the capacity to field test and modify different farming systems and try to carry out on-farm adaptive research. Currently, allotment all the districts have KVK's. By design, these KVKs have an appropriate mix of multi-disciplinary expertise, including specialists in agronomy (field crops), plant protection, horticulture, fisheries, livestock, post harvest technology, home science and so forth. However, some KVKs have yet to implement a systematic programme of work that reflects the potential role these centres can play within the overall research-extension system, if properly organized and supported, these KVKs could play a strategic role in linking the research and extension systems, particularly in the area of systems-based technologies.

3.1.5 Need for Intensifying Farmer Training: Farmer Training Centres (FTCs) were established during the sixties when the extension service emphasized farmer training. Because the NAEPs supported the T&V extension approach, FTCs did not receive any support and as a result, they have been languishing for the past two decades. In some states, these FTCs have been handed over to other departments or have been phased out. Given that system-based and sustainable technologies, such as IPM and NRM, are largely knowledge based, there would be an expanded need in the future to organize farmers training courses that would increase technical and managerial skills. If strengthened FTCs could play an important, future role in providing farmer training in systems-based and sustainable technologies.

3.1.6 Weak Research-Extension Linkages: The lack of competent SMSs at the district level is largely responsible for the poor research-extension linkages and the lack of integration across crop and livestock systems. These constraints severely limit technology dissemination system in assisting farmers in exploring improved production practices and incorporating high value commodities into their farming systems. The combination of Zonal Research Stations (ZRSs) and sub-stations, the emerging system of district-level KVKs and the opportunity to increase the breadth and competence of the SMS cadre at the district level can strengthen the research and extension interface. Extension Reforms has the potential to make strategic and tactical interventions to strengthen research-extension linkages and improve the flow of commodity farming systems and sustainable technologies to different socio-economic groups of farmers within different AEZs.

3.1.7 Poor communication capacity: Most technical staff within the line departments lacks the capacity to effectively communicate with both, the research system and the stakeholder groups. Firstly, the flow of information from research to extension tends to be top-down, rather than a two-way interactive process aimed at identifying and solving serious problems, secondly, there is little use of up-to-date communications technology, including (a) the use of mass media to create farmer awareness for new technologies, (b) the use of the print media to publish a regular newsletter to keep the field staff updated on technical and administrative developments, and (c) the use of electronic communications to improve feedback and technical support between research and extension personnel, and to facilitate administrative communications, such technologies can

increase the efficiency and effectiveness of extension in its technology dissemination functions.

3.1.8 Inadequate operating resources and financial sustainability: In the prevailing situation, nearly 90 percent of extension's recurrent budget is located to salaries and personal emoluments, with most operational funds coming from special national and state programs that provide subsidized inputs and services to farmers, under NAEP, programme and operational costs were financed from project funds. Therefore, having been rendered without either government or donor financed projects most line departments do not have sufficient operating funds to carry out routine extension activities nor the resources to maintain existing physical facilities and equipment, what to talk of upgrading their human resources. Any new system proposed should provide facilities, equipment, training and limited programme support, the long-term financial sustainability of the extension.

3.1.9 Some of the problems in public extension system identified by the practitioners in the field of agricultural extension are;

Public extension services are widely viewed as supply driven rather than demand driven; Commercialization of agriculture gave rise to specialized client and demand for location specific extension services which are not catered by public extension system; Public extension deals with a large area, large population and diverse cropping pattern; Extension services provided are general in nature rather than specific and intensive; High cost, low impact of extension programmes; growing conflicts between farmer's interest and policy goals; poor motivation of staff and conflicting roles are observed in public extension; Insufficient face to face contact between extension worker and farmer; Inadequate funds for operational purpose; Majority of the extension services are curative in nature; Inadequate technical qualifications of Village level workers; Incomplete extension services; Inadequate internal organization structure; Inefficiency of extension personnel; Inappropriateness or irrelevance of extension content; Dilution of

impact etc. This public sector monopoly came under increasing threat in the 1980's as many started questioning the desirability of this situation on economic and efficiency ground. Increasing restraints on government finances and emergence of new extension arrangements offered by the private and voluntary sector have accelerated the process of limiting the role of government in extension.

4. Need for pluralism in Agriculture Extension

It is becoming increasingly evident that public extension by itself can no longer respond to the multifarious demands of farming systems. There is need for reappraisal of the capacity of existing agricultural extension systems to address, effectively, contemporary and future needs of the farming community. Public funding for sustaining the vast extension infrastructure is also under considerable strain. Meanwhile, in response to market demand the existing public extension network is inexorably being complemented, supplemented and in some instances replaced by private extension. As the nature and scope of agricultural extension undergoes fundamental changes, the outlook is for a whole new policy mix nurturing a plurality of institutions.

5. National Agriculture Policy on Public-Private Partnership in Agriculture Extension Management

The references made on public-private partnership in National Agriculture Policy are;

- 5.1.1 The involvement of co-operatives and private sector will be encouraged for development of animal husbandry, poultry and dairy.
- 5.1.2 Role of KVK's, farmer's organisations, co-operatives, corporate sectors and Para - technicians in agricultural extension will be encouraged for organizing demand driven production systems. The government will endeavor to move towards a regime of financial sustainability of extension services through affecting in a phased manner, a mere realistic cost recovery of extension services and inputs,



while simultaneously safeguarding the interests of the poor and the vulnerable groups.

Development production and distribution of improved varieties of seeds and planting materials and strengthening and expansion of seed and plant certification system with private sector participation will receive a high priority.

5.1.4 Protection to plant varieties through a sui generis legislation will be granted to encourage research and breeding of new varieties particularly in the private sector in the line with India's obligations under TRIPS agreement.

5.1.5 A conducive climate will be created through a favourable price and trade regime to promote farmers own investments as also investments by industries producing inputs for agriculture will also be encouraged more particularly in areas like Agricultural Research, Human Resource Development, Post - Harvest Management and Marketing.

5.1.6 Collaboration between the producer co-operatives and the corporate sector will be encouraged to promote agro-processing industry. The small farmers agro-business consortium will be energized to cater to the needs of farmer entrepreneurs and promote public and private investment in Agri-business.

5.1.7 The private sector participation will be promoted through contract farming and land leasing arrangements to allow accelerated technology transfer, capital inflow and assured markets for crop production especially of oil seeds, cotton and horticultural crops.

5.1.8 The government will provide a true support for the promotion of co-operative form of enterprise and ensure greater autonomy and operational freedom to them to improve their functioning.

6. Xth Five-Year Plan on Public-Private Partnership in Agriculture Extension Management

The extension services in the states would be reformed to make these demand driven. With the private sector, communication networking will be encouraged to have backward linkages. Besides, private sector would also be encouraged to provide extension services, both information and services including input supply and testing facilities for soil and inputs. The Department of Agriculture and Cooperation, along

with NABARDD, has already introduced a scheme for establishment of Agri-Clinics and Agri-Business Centres / ventures by the agricultural graduates. The extension system will be revitalized and broad based through KVKs, NGOs, farmers' organisations, cooperatives, the corporate sector and Agri-Clinics and Agri-Business Centres. The supply of inputs, agro-processing and trade through such cooperatives / companies will be encouraged through the availability of credit with the help of NABARD.

7. Policy framework for Agriculture Extension on Public-Private Partnership in Agriculture Extension Management.

7.1 Promotion of Community - Based Private extension Services - Group approach is the cornerstone of the restructured extension mechanism. A major component of extension services will be the mobilization of the community into farmers groups - FIGs, Fos and SHGs. Farmers' Organisations will be linked with Panchayats through existing statutory institutional arrangements such as the Land Management Committees, Development Committees etc. Fos will be supported directly through public funds and will be involved in the planning, implementation, monitoring and feedback of programmes. Fos at the village level would be federated at higher levels. Representatives of Fos would be members of decision making bodies such as ATMAs, Block level Farmer Advisory Committees, Watershed Associations. Ultimate aim is for Fos to internalize extension services for its members and provide backward (inputs, credit, technology) and forward linkages (post-harvest facilities, markets, value addition) in a vertically integrated arrangement.

7.2 Promotion of NGOs based private extension services. Strength of NGOs is in their ability to mobilize communities into Farmers Organisations / Farmer Interest Groups / Watershed Associations / Market Associations. As such NGOs complement the public extension effort in several centrally sponsored programmes. Also extension services are contracted out and out-sourced to NGOs at the Block level in some states. In such cases the NGOs substitute for public extension. Public funds are used to support NGOs and are usually met from the provision of administrative expenses built into the Project Costs. NGOs are also supported directly by the central government in undertaking extension work.

Significant number of KVK's are operated by NGOs. A systematic training, capacity building and technical backstopping mechanism, supported through public funds is to be developed for NGOs involved in providing extension services.

- 7.3 Promotion of para-professional based private extension.** Para-extension workers normally supplement public extension in a relatively cost-effective manner and overcome constraints of absentee public extension functionaries (Gopals for AI services, Mitra Kisan for agri-services such as soil testing etc.). Under the new policy agenda para-extension workers at grassroot level will be supported through publicly funded training and capacity building and payment of honorarium in the early years. The honorarium will be routed through the Farmer Organisations / Farmer Groups serviced by the para-extension workers to ensure accountability to the client group. Once the para-worker is able to demonstrate his/her usefulness to the client group the honorarium provided through public funds will be phased out and the client group would take on the onus of paying for the services of the para extension worker. The public extension machinery will also assist para-workers in procuring loans from credit institutions for equipment, mobility and linkages with SMSs in line departments and SAUs. There will be an element of partial / full cost recovery of services provided by para-workers who must ultimately become economically viable units except in the case of vulnerable clients where the state may continue the targeted subsidy.
- 7.4 Competitive Agriculture extension Grant Fund.** Similar to the Competitive Agriculture Research Grant Fund set up in ICAR and several state governments, wherein both public & private sector research institutions compete for funds to address specific research problems, it is proposed to set up a Competitive Agriculture Extension Grant Fund. Resources under this fund could be accessed through a competitive bidding process. Contracting out extension services to private sector, community-based organisations or NGOs in selected geographical areas (eg. A village, cluster of villages, block) would be done through a transparent, laid out procedure under this fund. This would also imply a strict monitoring and evaluation process.
- 7.5 Linkage of performance with funding for public sector.** In a manner similar to the private extension agencies who must compete with one another to access funds and whose subsequent eligibility to compete for funds will depend upon their performance as indicated by an independent impact evaluation, it is proposed that on a pilot basis Public

extension agencies also be made to compete with private extension agencies for operational funds under Competitive Agriculture Extension Grant Fund (CAEGF).

- 7.6 Contracting out extension support services.** Wherever possible extension services in whole or in part could be contracted out for greater cost effectiveness. This applies, in addition, to administrative services such as security, mobility, computer and secretarial services, participatory planning to NGOs (being done in watershed management), staff training to a University / Institute, monitoring to a Farmer organisations / IIM / other institutions.
- 7.7 Training Institutes and SAUs to train private extension functionaries.** Facilities of public training institutions and SAUs would be available to NGOs and private extension agents.
- 7.8 Private Information Shops / Kiosks.** The ultimate aim is to promote private information shops / kiosks franchised out to private sector especially unemployed rural educated youth, in the manner of PCOs / STD shops. Private sector will be encouraged to establish information shops at block / mandal / village level. A major programme for development of software will need to be mounted so that information shops could have access to suitable material. Electronic connectivity and access to e-mail would put the franchisees in contact with district KVKs, line departments, markets and the resources of information. Such information could be dispensed to farmers, farmers groups on payment. Credit facilities for purchase of equipment for setting up such information shops would be permissible under the micro-credit programme for agriculture and allied activities.
- 7.9 Capacity Building for use of IT.** Application of IT is constrained by lack of or inadequacy of complementary inputs (equipment, power, etc), appropriate organizational and institutional structures, information management and skills development. A major training programme for developing capacity for it usage will be promoted. Training Institutes will run suitable courses for the purpose.
- 7.10 Cost-cutting mechanisms for extension services.** Cost effectiveness may be improved by relying on fewer but better qualified (graduate or post-graduate) field advisers who interact directly with researchers for subject matter advice and then multiply their impact in the field by working with farmer groups rather than individual contact farmers. Cost cutting mechanisms, including the exploitation of mass media, encouragement of NGO and private sector involvement in extension, or needs-based coverage.

7.11 Privatization of agro-services. An environment in which private investment in technology generation and transfer is more attractive will be created. Product diversification both horizontal and vertical shall be promoted to not only improve profitability sustainability and more efficient use of production resources but also to encourage greater involvement of the private sector. Where opportunities exist to contract out publicly-funded services, or to transfer costs to the corporate sector or to users themselves, these opportunities should be exploited-for instance for diversification into higher-value or export crops, or to develop new commercial inputs or machines. Privatization of selected “private goods” and agro services wherever a competitive market exists, such as AI services, soil testing, fertilizer advice, farm improvement plans or breeding plans would be undertaken. Wherever feasible contract farming through the involvement of private sector would be taken up, particularly, in the area of high value / export oriented agriculture.

7.12 Towards a realistic cost recovery of agro-services. Wherever farmers have capacity to pay for public services, which are in the nature of private goods, realistic cost of such services should be recovered. However, provision is made for targeted subsidies to protect the vulnerable class of users.

7.13 Co-financing of public extension. Co-financing of public extension services by farmers and farmers’ associations to reduce pressure on public finances and to improve the accountability and responsiveness of extension to farmers.

8. Scope for Public-private partnership in Agriculture Extension Management

Historically public extension played dominant role in extension delivery mechanism. However, commercialization of agriculture facilitated the emergence of private sector. Sustainability of partnership is ensured by equal partners. Hence, strengthening of private sector is pre-requisite for promotion of public-private partnership in agriculture extension management. Post Green revolution period witnessed the emergence of strong private sector, which was confined to few sector like marketing of inputs like seeds, fertilizers, pesticides, machineries etc. At present, private sector is not only diversified its activities from marketing of inputs to extension

advisory, value addition and agriculture trade. Horizontal expansion of private sector increases through partnership with public extension where vertical expansion of public extension increases through partnership with private sector.

Potential private extension service providers who could be the partners in public-private partnership in agriculture extension management are as follows:

1. Unemployed Agriculture Graduates
2. Farmers Organisations
3. Input Dealers
4. Agri-Business Companies
5. Non Governmental Organisations (NGOs)
6. Print and Electronic Media
7. Private Banks
8. Funding Agencies

1. **Agriculture Professionals:** Unemployed Agriculture graduates are available in plenty due to lack of adequate job opportunities in public sector. Central sector scheme of Agri-Clinics and Agri-Business Centres Scheme train them in Agri-Business, provide start up loans and facilitate in establishment of Agri-Clinics and Agri-Business Centres Scheme. This ensures strengthened professionalised extension.

Recent past has witnessed emergence of large number of Agri-Clinics and Agri-Business Centres throughout the country i.e., 11,400 in 32 categories of agricultures. Studies have proved the impact of such centres impact on income of farmers. There are opportunities exist to channelize central / state government programmes through agripreneurs, networking Agri-Business companies with agripreneurs and effectively utilize Agri-Clinics and Agri-Business Centres in implementing ATMA activities. Channelising 10 percent of ATMA funds through private-public partnership is a positive steps in promoting agripreneurship development.

2. **Farmers Organisations:** Group led Extension efforts resulted in formation farmers organisations / commodity interest groups creating a favourable condition for partnership. Pro-active farmers organisations namely Maha Grapes,

Maha Mango,, Sugar Co-operatives, United plantation association of South India (UPASI), Rythu Mitra Groups, Commodity Interest Groups promoted by ATMA;s prepared the necessary condition for partnership. It is relatively easy for Agri-Business Companies to partner with homogenous commodity interest groups with facilitation of ATMA. Partnership with farmer's organisations are expected to enhance farmer to farmer extension.

3. **Input Dealers:** Information consultancy pattern studies have repeatedly proved the importance of input dealers. Transforming input dealer into para-professional and partnering in extension delivery mechanism has great potential in the present scenario. Diploma in Agriculture Extension for Input Dealers (DAESI) promoted by MANAGE is a significant step in this direction. There is great potential for networking input dealers and channelising public extension services.
4. **Agri-Business Companies:** Traditionally Agri-Business Companies are confined to marketing of inputs. Recent time has seen the diversification of Agri-Business Company activities. Dhanuka experiences in Hoshangabad of Madhya Pradesh, ATMA initiatives in Sangrur in Punjab, Ratnagiri of Maharashtra, Chittoor of Andhra Pradesh are few evidences to prove the potential of Agri-Business companies in agricultural extension in partnership mode. Policy framework on Public-Private Partnership in Agriculture Extension Management is expected to yield huge results in Agriculture extension.
5. **Non-Governmental Organisations (NGOs):** Effective Non-Governmental Organisations exercise strong influence in their service area. NGO's could be used as change agents in agriculture extension. NGO's are proved to be effective in the fields of social mobilization, gender mainstreaming, livelihood improvement etc., could be used in agricultural extension work. However, the challenge is in selection of right NGO's to partner in agriculture extension activities.

6. Print and Electronic Media: Increase in the literacy rate and wider coverage by print and electronic media, there is great scope for use of mass media / ICT in agricultural extension. There is scope to increase quality and quantity of Agricultural information through mass media. As majority of print, electronic media and ICT initiatives are undertaken / controlled by private sector, there is scope to partner such players in agricultural extension.

7. Private Banks: It is mandatory for private sector banks to push credit under priority sector lending for agriculture. There is good scope for private sector banks to support private-public partnership in agricultural extension management through client specific products.

9. Public-Private Partnership in Agriculture Extension Management - Experiences

9.1 Agri-Clinics and Agri-Business Centres Scheme - Public fund - private delivery: Agriculture and allied graduates are trained under Agri-Clinics and Agri-Business Centres Scheme in Agri-Business, supported with start up loan and also provided with handholding support in establishing Agri-ventures under central sector scheme of Agri-Clinics and Agri-Business Centres. Under the scheme, more than 30,000 agriculture and allied graduates have been trained, 11,400 have established 32 categories of Agri-ventures in different parts of the country. Recent MANAGE study indicates that agripreneurs are earning decent monthly income and providing value added extension services resulting in increase of yield and income of farmers. Attempts are already made to channalise central sectors schemes like National Horticulture Mission, Rastriya Gramin Bandaran Yojan etc. Agriculture Insurance Corporation is channelising its programmes partially through agripreneurs. There are examples of state governments making use of agripreneurs in implementation of their schemes. Agribusiness companies have come out with specific programmes to involve agripreneurs in their activities. Separate provisions are made under Extension Reforms to popularize the scheme and implementation of their programmes through agripreneurs.

- 9.2 Diploma in Agricultural extension Services for Input Dealers (DAESI) - Private fund, private delivery through public facilitation:** MANAGE sponsored DAESI programme aims at converting input dealers into para professionals in agriculture extension. One year Diploma programme through distance mode, on self-financing pattern could able to cover 420 input dealers covering two states and equal number of input dealers are in pipeline. There is greater scope for central / state governments, Agri-Business companies to partner in this programme for further promotion.
- 9.3 Public-Private Partnership in Agriculture Extension Management - Hoshangabad Model - Public-Private fund and delivery:** The pilot project implemented during 2001-03 in Hoshangabad district of Madhya Pradesh is first of its kind in which 18 activities were implemented jointly by Dhauka Group and Department of agriculture at district level through MoU. The lessons available from the project is useful for upscaling the public-private partnership in agriculture extension management in other parts of the country.
- 9.4 Public Private Partnership - ATMA Experiences - Public led partnership models -** A large number of ATMAs have taken initiatives to develop partnership with the private sector like processing industry, farmers organizations, cooperatives, corporate bodies etc. in different areas. This partnership has facilitated dissemination of technologies, supply of quality inputs (seed, fertilizers, micro-nutrients, bio -fertilizers, pesticides and bio-pesticides and other technological tools) and marketing of farmers produce. The examples of market interventions through public private partnership undertaken by ATMAs are summarized below:
- ATMA-Chittoor** - identified and enrolled three private entities, namely, Food World, Agri-Horticulture Society and WORD organization. ATMA charged a registration fee of Rs. 50/- from each of these firms/societies. ATMA has entered into an agreement with Poultry Association, Food World and Vennar Organic Fertilizers for maize buy-back with support price; direct buying of mango without middlemen; and quality component.

ATMA-Prakasham - has listed/identified three private organizations/ individuals, viz., seed organization, assist organization and Mr. S K Moiddin (a retired agriculture officer). Two NGOs were involved in capacity building of farmers' groups in agricultural activities and training of women groups drawn from DWACRA on child nutrition, utilizing locally available products in preparing nutritive food, and general awareness on sustainable farming practices such as IPM and INM. Also signed an MoU with ITC for use of IT Kiosks for technology dissemination.

ATMA-Adilabad organized an awareness & interaction program on Bt Cotton in collaboration with M/s Monsanto, and an interaction program on organic farming jointly with Bhartiya Kisan Sangh.

ATMA, Patna has developed partnership with a number of private companies such as –

- Baidyanath Ayurveda Bhawan Limited for buy-back arrangements of herbs / medicinal plants.
- M/s. Aditya Agri-Clinic and Agri-Business Centre, Munger for Basmati Rice.
- M/s. Pamer Agro Ventures (P) Limited, Bakhtiarapur and Khusrupur blocks for Snow Pea.
- M/s. Patliputra Samaj Kalyan Sansthan for buy-back arrangements of Fresh and Dried Mushrooms
- M/s. Prasad Refrigeration and Agro Industries Pvt. Ltd., Betiah for Medicinal Plants.
- M/s. Ayurved Shri Herbals Limited for Aromatic and Medicinal Plants.
- M/s. Fragrance Herbs of Muzaffarpur of Essential Oils
- M/s. Grameen Snasadhan Vikas Sansthan for Baby Corn.
- M/s. Maa Danteshwari Hi-tech Herbal Farms of Kondagaon, Bastar, Chatisgarh for buy-back arrangement of Safed Musli.
- M/s. Vijay Herbs & Natural Essential Oils of district Harda, M.P., for Essential Oils and Aromatic Plans.

- M/s. S.V. Healthy Herbs India, Indore for buy-back arrangement of Medicinal Plants.
- M/s. Jeevan Kalp Vatika, Patna for Oyster Mushroom.
- M/s. Amrapali Foods Limited, Patna for Baby Corn.

ATMA-Muzaffarpur has tied up with Monsanto and Kribhco for organization of demonstrations.

- 9.4.6 ATMA-Madhubani**, district administration and **Drishti** (an NGO) have entered into a tripartite agreement to set up two IT Kiosks in each block of the district, so far, 14 such kiosks have been established.
- 9.4.7 ATMA-Munger** has involved BAIF in its technology dissemination activities.
- 9.4.8 ATMA-Kangra** has tied up with Samridhhi (an NGO) for sale and processing of garlic, fruits, etc.
- 9.4.9 In Shimla** and other districts of Himachal Pradesh input dealers have been made part of the ATMA system. ATMA-Shimla has involved social & cultural groups (Mahila Mandal, Nitika Sur Sangam Kala Manch) in technology transfer.
- 9.4.10 ATMA-Ratnagiri** has inventoried 32 extension service providers in the district. It has associated three of them ('Matrumandir' for training and community organization, 'SIDDI' for group formation and 'Gram Vikas Mandal' for women group formation). They are actively participating in ATMA program. In addition to associating 3 NGOs in its program ATMA has also taken help of an NGO in establishment of one FIAC. The NGO has provided office and building space for FIAC in its premises (in Sangameshwar block) without any charge/money. Recently, ATMA signed an MoU with Indo-Israeli Agro Industries Chamber for developing FIACs as business centers.
- 9.4.11 ATMA-Aurangabad** has associated 3 extension service providers (all NGOs) in the district. These NGOs are: (1) Marathwada Sheti Sahayya Mandal - Watershed development, (2) DILASA - Watershed development and dairying, (3) Janaki Devi Bajaj Trust - watershed development, vermicomposting and IPM. ATMA-Aurangabad has developed partnership with two private entities - Vasundhara Agrotech (for supply of bio-agents and training) and Kedia (for training & demonstration on roof water harvesting and well recharging). With these entities ATMA organized joint workshops and training programs.

- 9.4.12 ATMA-Amravati** has developed partnership with five private entities. These are: DHARAMITRA-Wardha (for organic certification), CARD-Anjangaon Surji (for prevention ginger soft rot), Shri Raosaheb Dagadkar-Ushalgaon (for organic farming awareness), Organic Farm Home School-Nimkhed Bazar (for organic farming), and SAMVAD-Rawala (for watershed management), Netefim Irrigation Ltd (High tech vegetable cultivation), Reliance Industries (use of plastic mulch in groundnut cultivation) and IBEX GAHLET (use of solar fencing).
- 9.4.13 ATMA-Ahmednagar** could initiate the participation of private sector in the project activities in the very first year. In total six private companies (namely, Novartis, Agro genetic, Pioneer, Neemkar Seeds, Prithi Agro, and Krishidhan) came forward and provided free seed of five different crops for trials. In total, 120 trials were undertaken with their help. Under sericulture enterprise, the Kirti Livestock Private Limited is being involved for training of farmers and development of innovative ideas in sericulture. The ATMA received a proposal from 'AgriNet Solutions Private Limited' for joint implementation of IT based information system for all the FIACs being established in the district. In the meeting of 8th August 2002 GB has decided to enter into an agreement with the company. The portal will provide information support to FIACs. They have also proposed to place one computer literate agriculture graduate to operate the FIAC. The modalities related to his employment status and salary etc is yet to be worked out. They have proposed to charge nominal fee for information.
- 9.4.14 ATMA-Jalandhar** tied up with Pepsi Foods, Hindustan Lever, Nijjar Agro-foods, Indo Mint Ltd and Maharaja Aromatic for marketing & processing.
- 9.4.15 ATMA-Gurdaspur** has developed partnership with Pepsi Foods, Hindustan Lever, Punjab Agro, Rallis, and Markfed for marketing & processing.
- 9.4.16 ATMA-Koraput** has linked up with Koraput Farmers Association for supply of inputs like seeds, vermiculture and beehives. Telecast of success stories through ETV channel.
- 9.4.17 ATMA-Khurda** has involved two NGOs for organizing economic activities and imparting trainings to block level farmer federations. NGOs have also been engaged for providing training to SHGs on book keeping

Private Led Partnership Models

- 9.5.1 SBI, Dabur tie-up to finance farmers:** State Bank of India has signed an agreement with Dabur India for financing farmers for production of medicinal and aromatic crops under contract farming arrangements. The Memorandum of Understanding constitutes a broad understanding between SBI and Dabur India, manufacturer of ayurvedic

medicines, to finance farmers for cultivation of medicinal and aromatic crops in Uttaranchal.

- 9.5.2 McCain in Punjab:** McCain Foods, the world's largest producer of French fries and potato specialities, is currently busy guiding the farmers in Punjab on developing and growing high-quality potato seed varieties. McCain agronomists are coordinating with the farmers and laying stress on mouth-watering French fries varieties
- 9.5.3 Andhra Bank in pact with NCMSL for loans against farm produce:** Andhra Bank entered into an MOU with the National Collateral Management Services Ltd (NCMSL), promoted by the National Commodity & Derivatives Exchange of India (NCDEX).
- 9.5.4 YES Bank eyes jatropha cultivation in biofuel push:** YES bank has discussed the possibilities of jatropha cultivation, a biofuel plant, with different state governments including Madhya Pradesh, Chattisgarh and Rajasthan. Once the project feasibility is discussed and convinced, the bank will work on financing the jatropha fuel chain
- 9.5.5 Food Bazaar in tie-up with NAFED:** Pantaloon's food and grocery retail outlet, Food Bazaar, has entered into a sourcing tie up with National Agricultural Cooperative Marketing Federation (NAFED) for the supply of onions to its all outlets in order to keep the price per/kg at Rs.16 across its outlets in the country, although the prices have shot up across the country in the open market. Food Bazaar in all its 34 outlets has made special arrangements for customers and additional quantities are being brought in.
- 9.5.6 Different Take Health food will soon be at your doorstep via NGO route:** The MR Morarka-GDC Rural Research Foundation, an NGO involved in promotion of organic agriculture since 1995, in collaboration with Narco Exports, will bring 37 varieties of organic farm produce from the Shekhawati region in Rajasthan to Delhi and the NCR. Their retail outlet, Food Shoppe in DLF Phase-i, Gurgaon will also stock vegetables, fruit, pulses, cereals, oilseeds, spices and herbs from the Shekhawati's organic farms.

To tap the niche market, the Foundation is planning to make the organic produce available at the doorsteps of the consumers on a weekly basis under a 'Box Scheme'.

- 9.5.7 Tata Kisan Kendras of Tata Chemicals:** Having sService Units in 470 locations, managing contract farming practices in 40,000 acres covering Basmati rice, wheat, mustard, soybean and potato. Services provided for sowing, fertilizer application, plant protection, custom hiring and other agri value chain.
- 9.5.8 Pepsi Foods:** Serve farmers by providing market intelligence and contract farming.
- 9.5.9 n-LOGUE :** 2000 village kiosks in Tamilnadu and Gujarat have been established.
- 9.5.10 Drishti:** 700 kiosks in 8-9 districts have been established. Each kiosk serves up to 5000 farm families.
- 9.5.11 Chambal Fertilizers – Uttam Bandhan :** Serve entire value chain through FIGs and Fos including Soil testing, Advisory, Input supply and Marketing.
- 9.5.12 Poultry Association:** ATMA, Chittoor has contacted the District Poultry association and came to an understanding on purchase of Maize from the growers. The poultry association given a written agreement that they will purchase the maize seed at Minimum support price i.e., @ Rs.4851-per Quintal. The Poultry association also agreed to supply 2 MTs of poultry Manure on free of cost to the maize growers.
- To boost up the Maize crop, ATMA, Chittoor has supplied Maize seed on free of cost in an extent of 400 acres in Kharif, 2002 and for 1000 acres in Rabi, 2002-03, as an incentive technical support is given by the ATMA and BTT Officers for cultivation of Maize.
- 9.5.13 ITC - E-Chaupal:** Operates on the principle of information disinterme- diation. Based on the fact of difference between Farm Gate Price and Retail / Consumer Price. Creating a win-win situation for farmers and company by reducing 30-40 per cent transaction cost on procurement
- 9.5.14 Contract Farming:** Cadbury (cocoa), Pepsi (potato, chillies, groundnut), Unilever (tomato, chicory, tea, and milk), ITC Limited (tobacco, wood trees and oilseeds), Cargill (seeds), domestic corporates like Ballarpur Industries Limited (BILT), JK Paper and Wimco (in eucalyptus and poplar trees), Green Agro Pack (GAP) Ltd., VST Natural Products, Global Green, Interrgarden India, Kempscity Agro Exports and



Sterling Agro (all in gherkins), United Breweries (UB) (barley), Nijjer Agro (tomato), Tarai Foods (vegetables), A M Todd (mint in Punjab), McCain India (potato in Gujarat).

10. Need for policy framework for Public-private partnership in Agriculture Extension Management:

Public-private partnership needs favourable state policies. Strong private extension is pre-requisite for promotion of sustainable public-private partnership. The policy framework reassures a conducive conditions to strengthen the private extension. The present policy approach is in favour of public extension which needs to be oriented to promote public-private partnership. This policy framework aims at building the confidence among private partners, clearing the hurdles in the way of promoting partnership and to provide a clear picture of agreements to be executed between public and private partners. The framework assures level playing field for both the partners and channelise the symbiotic efforts for the benefit of farmers. Policy ensures the sustainability of partnership and also ensures cost effective, accountable, efficient and result oriented delivery mechanism in extension. The policy framework aims at efficient utilisation of existing resources of private and public sector to increase the efficiency of extension delivery mechanism to benefit the farmer. It also provides a roadmap for extension approaches to emerge in future.

11. Potential Private Partners in Public-Private Partnership: Present scenario, potential private extension service providers are as follows:

1. Unemployed Agriculture Graduates
2. Farmers Organisations
3. Input Dealers
4. Agri-Business Companies
5. Non Governmental Organisations (NGOs)
6. Print and Electronic Media
7. Private Banks
8. Funding Agencies

Unemployed Agriculture graduate, farmers organisations, input dealers are in the unorganized private sector whereas Agri-Business Companies, NGO's, print and electronic media, private banks and funding agencies are in the organized sector. Hence, it is important to initiate partnership with organized private sector at National, State and district level to start with followed by unorganized private sector below district level later to realize immediate benefits. Organized private sector may make use of unorganized private players in delivery of services at grassroot level resulting in unorganized players getting organized over a period of time. Each private sector has strength in their own commercial activity. To benefit the farmer holistically by assisting him in production, procuring and marketing, consortium of private players is desirable condition. Policy framework promotes various combinations of public-private partners.

12. Potential areas for Public-Private Partnership in Agriculture Extension Management:

Potential areas for Public-private partnership in agriculture extension management are broadly classified under;

1. Technology Dissemination
2. Sale of Inputs and Processing, Marketing of Agri products
3. Infrastructure support for production, processing and marketing
4. Different combinations of all the above three areas

However, nature of partnership solely depends upon need of the farmer and relative strength of public and private partners. It is desirable to have private partner or consortium of partners to work with public sector to benefit group of farmers in the entire process of production, processing and marketing on a project mode.

12.1. Technology Dissemination: The following extension activities are categorized under this area;

1. Training of farmers and extension functionaries
2. Demonstrations
3. Farmer's study tours
4. Exhibitions / Kisan Ghostis
5. Field days



6. Production and dissemination of extension messages through print and electronic media
7. Award to successful farmers
8. Mobilization of farmers groups
9. Any other activity in technology dissemination

As major of technology dissemination activities are handled by public sector, any partnership in this area is essentially public led partnership. These areas may not generate attractive revenue for private sector, but expected to boost their corporate image. Hence, to sustain partnership in this area, public sector has to consciously acknowledge the contribution of private sector in public forums.

12.2 Sale of Inputs, Processing and Marketing of Agri products

Sale of Inputs such as seeds, fertilizers, pesticides, machineries, feeds, medicines etc.

Processing of Agriculture / Horticulture / Live Stock / Fishery products.

Marketing of Agriculture / Horticulture / Live Stock / Fishery products.

As majority input sale, processing and marketing activities are handled by private sector, any partnership in this area is essentially private led partnership. Partnership modalities should ensure agribusiness freedom of private partner with proper regulation. Regulation should ensure agribusiness freedom of private partner, prevent exploitation of farmers under public-private partnership banner to sustain the partnership.

12.3 Infrastructure support for production, processing and marketing

1. Soil, Advisory centres, Fertilizers, pesticides, water & seed testing facilities
2. Training centres
3. Demonstration farms
4. Nurseries
5. Seed production farms
6. Bio-control laboratories
7. Agro-processing units
8. Godowns

9. Cold storages
10. Veterinary hospitals
11. Artificial insemination centres
12. Custom hiring units
13. Feed mixing units
14. Seed processing units
15. Bio-fertilizer / Bio-pesticides production units
16. Agriculture Information Kiosks (FIAC etc)
17. Printing press
18. Any other infrastructure available with public sector.

Majority of the above infrastructure are established with public investment. Policy framework promotes maximum utilisation of such infrastructures with private investment and management. Private participation is expected to turn these units as profitable while delivering efficient services to farmers. To facilitate the same, existing policies which given the infrastructure management need to be revised to promote partnership. Partnership should ensure sharing of profit generated with private sector while protecting the interests of the farmers to sustain partnership.

12.4 Different combinations of all the above areas. The nature of partnership is solely decided by need of the farmers and relative strength of public and private partners. Hence, in reality the partnership deals with one of the area / activity or combination of areas / activities. To focus the partnership efforts to yield maximum benefit to the farmers, it is necessary to design partnership models involving public and private partner / consortium of partners working with group of farmers directly growing one crop in all the stages ie. Production, processing and marketing on a project mode. To ensure this approach, public extension may provide necessary incentives to private sector wherever necessary. All the existing government schemes / programmes / incentives may be converged to ensure this support.

13. Private-Public Partnership Mechanism

13.1 Public funded programmes are partially or fully delivered by private partner.

13.1.1 Public means agriculture and line departments of Govt. of India, states, autonomous bodies, corporations, authorities under agriculture and line departments of Govt. of India, states, ICAR organisations and State Agriculture Universities.

13.1.2 Any programmes / projects / schemes implemented by the organisations / departments mentioned above are termed as public funded programmes.

13.1.3 Public funds are provided to one private extension service provider or consortium to implement the programme. Set process has to be followed and PESP is responsible for expected end results. Monitoring, evaluation and regulation may be involved by public department.

Ex: Social mobilization of farmers into commodity interest groups by NGO where funds are provided by public department.

13.1.4 Public funds are provided to one PESP or consortium to implement only part of the programme. Set process has to be followed and PESP is responsible for expected and results of that component of the programme. However, public department is responsible for implementation of the programme. Monitoring, evaluation and regulation of private delivered component may be handled by public department.

Ex: In a programme to popularize high yielding variety, only demonstrations are assigned to Agri-Business Companies.

13.2 Public-private funded programmes are partially or fully delivered by private partner.

13.2.1 Public means all the departments mentioned in item 13.1.1
private means all the PESP's mentioned in item 11.

13.2.2 Public-private funding may be in the form of cash or kind.

Ex: Consortium of seed and pesticide companies demonstrate seed treatment through mobile vans at village areas at their cost under the supervision of public extension. The demonstrations of treated seeds are taken up by public extension at their cost and supervision.

13.3 Public sector infrastructure is utilized by private sector on payment basis.

13.3.1 Public and private sector is as mentioned in item 13.1.1 and 11.

13.3.2 Public sector infrastructure as mentioned in item 12.3

13.3.3 The infrastructure is handed over to private sector for MoU period on fixed rental basis. The service delivery cost at farmer end and process may be approved by public extension.

Ex: Soil testing laboratory may be handed over to PESP for MoU period. Per year target and cost charged per soil sampling may be fixed by public extension.

13.4 Public sector infrastructure is utilized by private sector where operational cost is met by public sector.

13.4.1 Public and private sector is as mentioned in item 13.1.1 and 11.

13.4.2 Public sector infrastructure as mentioned in item 12.3

13.4.3 The infrastructure is handed over to private sector for MoU period. Operational cost per unit of product or service is mutually agreed in MoU. The operational cost is paid by public to private partner. The quality of product or service is monitored by public extension.

Ex: Bio-control laboratory is handed over to PESP. Operational cost per unit ie., 1000 bio-control agents is fixed. The private sector produce the bio-control agents and handover to public extension for extension delivery. The operational cost is paid by public extension to PESP.

13.5 Private sector investment on infrastructure with public sector incentives.

13.5.1 Public and private sector is as mentioned in item 13.1.1 and 11.

13.5.2 Public sector infrastructure as mentioned in item 12.3

13.5.3 The location of infrastructure establishment may be decided by public sector considering the gaps. PESP establish the infrastructure at their cost and provide services to farmers as per market demands, at competitive rates. Public extension does not



have control over the cost of services provided. Depending upon the total investment, public sector may provide incentives in the form of land at concession rate, tax concessions, one time grant in aid support etc.

14. Implementation of Central / State / Universities / ICAR programmes through private sector:

Public extension is handicapped by inadequate manpower and infrastructure for implementation of various programmes. Tangible component of the programmes may be channelised through private sector by defining the process, role and end results expected. This consideration has to be given case by case basis, either the entire programme or few components of the programme may be implemented through partnership mode.

15. Selection of Partners:

Selection of partners may be done through transparent process, based on comparative strengths of partners through decentralized decision making process.

Steps to be followed in selection of the partner is as follows:

1. Selection of the activity / programme under partnership mode
2. Working out delivery mechanism under partnership mode by consulting all the stakeholders.
3. Working out MoU which covers duration of implementation, roles of partners, implementation process and expected end results.
4. Modification of existing finance / administrative guidelines to suit effective implementation of MoU
5. Inviting expression of interest through advertisements / through communication to potential partners.
6. Selection of partner / partners based on the comparative strength by group of experts
7. Execution of MoU

16. Framework of MoU :

The MoU should contain

1. The activity / programme selected by implementation under PPP mode

2. Process of implementation
3. Role clarity of partners
4. Geographical area covered under implementation
5. Duration of implementation
6. Monitoring and evaluation
7. Joint Account
8. Regulation
9. Expected end results

17. Joint Account:

Joint Account is a confidence building measure under public-private partnership in agriculture extension management. Joint account is opened by Nodal Officers of private and public sectors jointly and operated together. All the funds committed by public and private sector should go to joint account immediately after signing MoU or thereafter as decided. The account is operated jointly by Nodal Officers of both the sectors. Revenue generated by activity under public private partnership should go to joint account. The profit if any should be shared among partners proportionality as agreed.

18. Certification:

Certification process aims at assessing the strength of private partner based on performance which enable the government to promote such Private Extension Service Providers.

The certificates are issued to Private Extension Service Providers on yearly basis by an expert committee.

The performance of the Private Extension Service Provider is assessed based on the monitoring and evaluation reports through participatory monitoring and evaluation process.

The Private Extension Service Providers may be classified into five groups based on their performance.

A	Grade Private Extension Service Provider	-	Excellent
B	Grade Private Extension Service Provider	-	Very good
C	Grade Private Extension Service Provider	-	Good
D	Grade Private Extension Service Provider	-	Satisfactory
E	Grade Private Extension Service Provider	-	Poor



The MoU with the E-grade Private Extension Service Provider shall not be renewed and are not eligible to enter into partnership for next two years. D grade Private Extension Service Provider shall be given one year time to improve their performance. A,B, and C grade Private Extension Service Provider are allowed to continue. The government shall prefer better-graded Private Extension Service Provider for future partnership mode extension delivery systems.

The expert committee should also assess the overall impact of partnership mode of extension delivery system in terms of cost saving to government, accountability and efficiency of extension services.

19. Regulation:

The activities of Private Extension Service Provider shall be under the close observation of expert group. Activities of Private Extension Service Provider such as non co-operation, indiscriminate promotion of commercial interest, suppression of Agriculture information meant for dissemination, sale of spurious inputs, cheating, use a government name for anti- farmer activities would be taken note of and a penalty equivalent to the damage would be levied on the Private Extension Service Provider as found guilty after enquiry. These activities of Private Extension Service Provider shall be taken into consideration while renewing MoU. On the other hand, good work of Private Extension Service Provider activities will be recognized through good grade during certification.

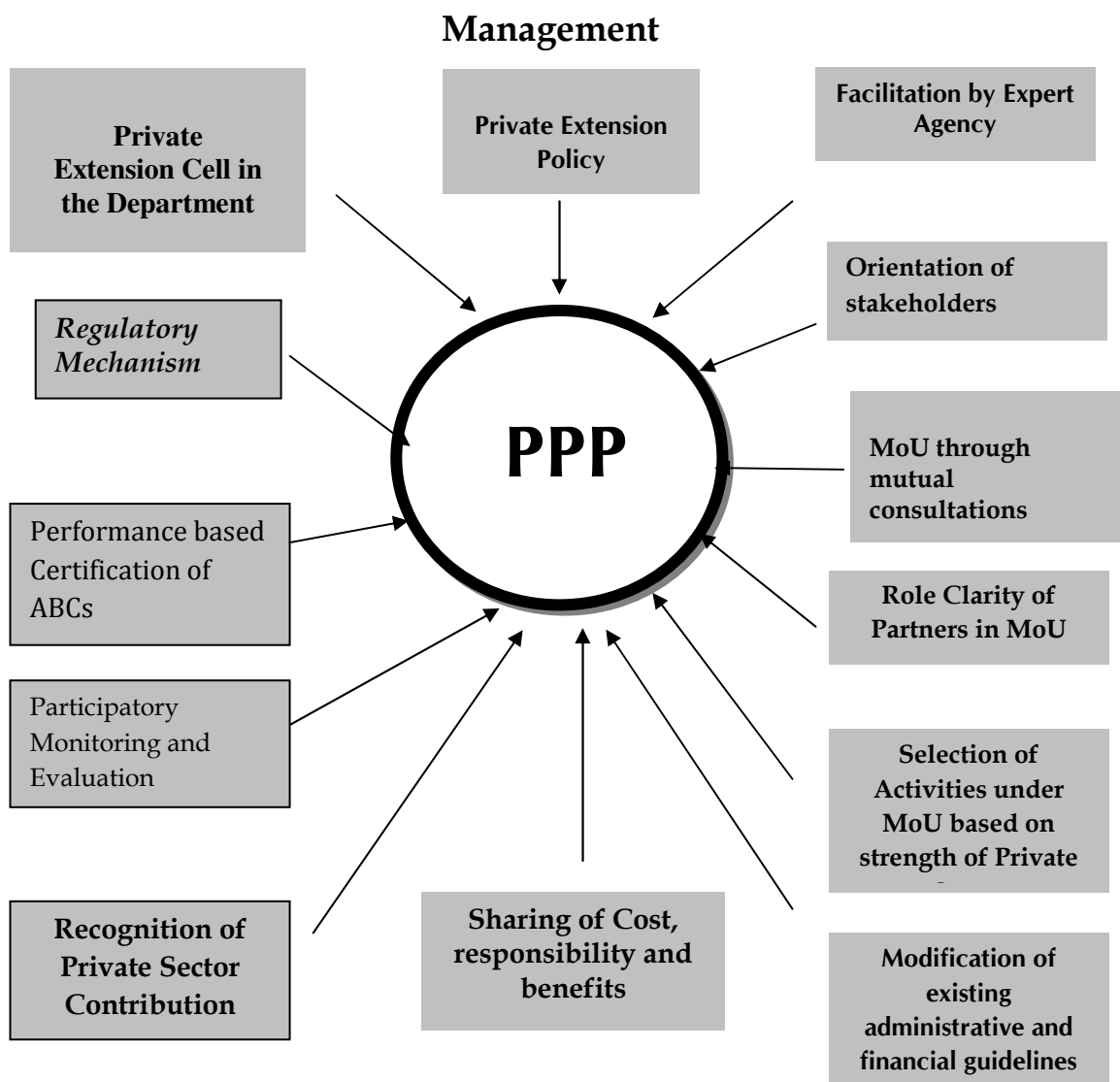
A caution deposit may be considered at the time of opening joint account by both the partners. In case if violation, the caution deposit should go to the partner who suffer loss due to violation of MoU by the other partner. The violation may be decided by expert group consisting of private and public partners situated at state and national level so as to handle all such grievances at different state / central programmes under public-private partnership.

20. Participatory Monitoring and Evaluation Mechanism:

Participatory Monitoring and Evaluation mechanism ensures that the ultimate beneficiary i.e. the farmer, monitor and evaluates the Public-Private Partnership mode extension delivery system. Here, the Private Extension Service Provider and department Nodal Officers jointly identify representatives of farmers for the purpose. Selected

members are empowered through training to monitor and evaluate the programme with the help of designed tools and techniques. Such reports collected at the end of each season will reach expert committee which would be used by certification agency in evaluating the performance of Private Extension Service Provider.

Proposed Model for up scaling PPP in Agricultural Extension





Unit-8

Gender Mainstreaming and Gender Sensitization

Structures

- 8.0 Objectives
- 8.1 Introduction
- 8.2 What is Gender-Mainstreaming?
- 8.3 Gender and Agricultural Development
- 8.4 Gender Concepts
- 8.5 Feminization of agriculture
- 8.6 Gender Division of Labour
- 8.7 Credit Support for Women Farmers
- 8.8 Extension Support for Women Farmers
- 8.9 Gender Issues in Agriculture
- 8.10 Gender Analysis
- 8.11 Case Studies
- 8.12 Gender Budgeting
- 8.13 Guidelines for Mainstreaming Gender
- 8.14 Strategies for Mainstreaming Gender
- 8.15 Gender Perceptive in Agriculture - Provisions made in the Schemes of Department of Agriculture and Cooperation, Ministry of Agriculture, Govt. of India
- 8.16 Let us Sum up

8.0. Objectives

After going through this unit, you will be in a position to

- Understand the need and importance of gender mainstreaming.
- Become aware of gender issues in agriculture and allied sectors
- Know the methodology for analysis of gender roles, needs, constraints, decision making pattern etc.,
- Identify suitable strategies and activities for addressing the gender concerns in agriculture

8.1. Introduction

Both women and men play critical roles in agriculture throughout the world, producing, processing and providing the food we eat. Rural women in particular are responsible for half of the world's food production and produce between 60 and 80 percent of the food in most developing countries. Yet, despite their contribution to global food security, women farmers are frequently underestimated and sidelined in development strategies.

Rural women are the main producers of the world's staple crops - rice, wheat, maize - which provide up to 120 percent of the rural poor's food intake. Women sow, weed, apply fertilizer and pesticides, harvest and thresh the crops. Their contribution to secondary crop production, such as legumes and vegetables, is even greater. Grown mainly in home gardens, these crops provide essential nutrients and are often the only food available during the lean seasons or if the main harvest fails. In the livestock sector, women feed and milk animals, raise poultry and small animals such as sheep, goat, rabbits and guinea pigs. Also, once the harvest is over, rural women provide most of the labour for post-harvest activities, taking responsibility for storage, handling, stocking, processing and marketing.

Although rural women are assuming an increasingly prominent role in agriculture, they remain among the most disadvantaged of populations. War, the rural-to-urban



migration of men in search of paid employment and rising mortalities attributed to increase numbers of female-headed households in the developing world. This 'feminization of agriculture' has placed a considerable burden on women's capacity to produce, provide, and prepare food in the face of already considerable obstacles.

Despite the fact that women are the world's principal food producers and providers, they remain 'invisible' partners in development. Lack of available gender disaggregated data indicate that women's contribution to agriculture in particular is poorly understood and their specific needs ignored in development planning. This extends to matters as basic as the design of farm tools. But women's full potential in agriculture must be realized if the goal of the 1996 world food summit – to halve the number of hungry people in the world by 2015 – is to be achieved.

8.2 What is Gender-Mainstreaming?

Gender Mainstreaming is a process rather than a goal. Efforts to integrate gender into existing institutions of the mainstream have little value for their own sake. We mainstream gender concerns to achieve gender equality and improve the relevance of development agendas. Such an approach shows that the costs of women's marginalization and gender inequalities are born by all.

Gender mainstreaming is "the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality"

8.3 Gender and Agricultural Development

Agriculture involves both self-employment and wage employment and accordingly requires precise information about who does what? Infact the land holding of 75% of farming community being small, the number of landless labourers have swelled up over time by working on others' farm. The situation thus demands an understanding of activity performance of men and women; and the children – girls and boys, whose lives are fundamentally structured in different ways. Their living pattern, work pattern, interaction style and sharing of scientific information differ within the socio-economic groups. Similarly, a gender-based division of labour is universal but culture and community diversities cause differentiation.

Gender therefore, has to be recognized as the social characteristic that cuts across caste, class, occupation, age and ethnicity. It is gender that differentiates the roles, responsibilities, resources, constraints and opportunities of women and men in agriculture for which precise gender information is the need of the day.

Building gender into agricultural development will lead to:

- Articulating gender perspectives in development activities.
- Involving action from women to men and from men to women for gender sensitization.

8.4 Gender Concepts

Sex

Identifies the biological differences between men and women, such as women can give birth, and men provide sperm. Sex roles are universal.

Gender Bias

The tendency to make decisions or take actions based on gender.



Gender Mainstreaming

Gender mainstreaming is the process of ensuring that women and men have equal access and control over resources, development benefits and decision-making, at all stages of the development process and projects, programmes and policy.

Gender Discrimination

Prejudicial treatment of an individual based on a gender stereotype (often referred to as sexism or sexual discrimination).

Gender equality

Gender equality is the result of the absence of discrimination on the basis of a person's sex in opportunities and the allocation of resources or benefits or in access to services

Gender equity

Condition in which women and men participate as equals, have equal access to resources, and equal opportunities to exercise control.

Gender issues

Specific consequences of the inequality of women and men.

Gender Relations

Ways in which a culture or society defines rights, responsibilities, and identities of men and women in relation to one another.

Gender Sensitive

Being aware of the differences between women's and men's needs, roles, Responsibilities, and constraints.

Empowerment

The process of generating and building capacities to exercise control over one's life.

Gender division of labour

The roles, responsibilities, and activities assigned to women and men based on gender.

Gender Analysis

It provides disaggregated data by sex, and an understanding of the social construction of gender roles, how labour is divided and valued. Gender Analysis is the process of analyzing information in order to ensure development benefits and resources are effectively and equitably targeted to both women and men, and to successfully anticipate and avoid any negative impacts development may have on women or on gender relations. Gender analysis is conducted through a variety of tools and frameworks.

Sex disaggregated data

For a gender analysis, all data should be separated by sex in order to allow differential impacts on men and women to be measured.

Gender Planning

Gender Planning refers to the process of planning developmental programmes and projects that are gender sensitive and which take into account the impact of differing gender roles and gender needs of women and men in the target community or sector. It involves the selection of appropriate approaches to address not only women and men's practical needs, but which also identifies entry points for challenging unequal relations (ie. strategic needs) and to enhance the gender-responsiveness of policy dialogue.



Gender Roles

Both men and women play multiple roles in society. The gender roles of women can be identified as reproductive, productive and community managing roles, while men's are categorized as either productive or community politics. Men are able to focus on a particular productive role, and play their multiple roles sequentially. Women, in contrast to men, must play their roles simultaneously, and balance competing claims on time for each of them.

Productive roles:

Refer to the activities carried out by men and women in order to produce goods and services either for sale, exchange, or to meet the subsistence needs of the family. For example in agriculture, productive activities include planting, animal husbandry and gardening that refer to farmers themselves, or for other people at employees.

Reproductive roles:

Refer to the activities needed to ensure the reproduction of society's labour force. This includes child bearing, rearing, and care for family members such as children, elderly and workers. These tasks are done mostly by women.

Community managing role:

Activities undertaken primarily by women at the community level, as an extension of their reproductive role, to ensure the provision and maintenance of scarce resources of collective consumption such as water, health care and education. This is voluntary unpaid work undertaken in 'free' time.

Community politics role:

Activities undertaken primarily by men at the community level, organizing at the formal political level, often within the framework of national politics. This work is usually undertaken by men and may be paid directly or result in increased power and status.

Triple role/ multiple burden:

These terms refer to the fact that women tend to work longer and more fragmented days than men as they are usually involved in three different gender roles – reproductive, productive and community work.

Gender Needs

Leading on from the fact that women and men have differing roles based on their gender, they will also have differing gender needs. These needs can be classified as either strategic or practical needs.

Practical Gender Needs (PGN):

Practical gender needs are the needs women identify in their socially accepted roles in society. PGNs do not challenge, although they arise out of, gender divisions of labour and women's subordinate position in society. PGNs are a response to immediate and perceived necessity, identified within a specific context. They are practical in nature and often concern inadequacies in living conditions such as water provision, health care and employment.

Strategic Gender Needs (SGN):

Strategic gender needs are the needs women identify because of their subordinate position in society. They vary according to particular contexts, related to gender divisions of labour, power and control, and may include issues such as legal rights, domestic violence, equal wages and women's control over their bodies. Meeting SGNs assists women to achieve greater equality and change existing roles, thereby challenging women's subordinate position. They are more long term and less visible than practical gender needs.

8.5 Feminization of Agriculture

In many parts of the world today there is an increasing trend towards what has been termed the 'feminization of agriculture'. As men's participation in agriculture declines, the role of women in agricultural production becomes ever more dominant. War, sickness and death from HIV/AIDS have reduced rural male populations. Another major cause of this phenomenon is the migration of men from rural areas to towns and cities, in their own countries or abroad, in search of paid employment.

In Africa, for example, the male population in rural areas is falling rapidly, while the female population remains relatively stable. In Malawi, the rural male population plummeted by 21.8 percent between 1970 and 1990. During the same 20- year period, the rural female population declined by only 5.4 percent.

This trend has resulted in an increase in the proportion of households headed by women. Approximately one-third of all rural households in sub-Saharan Africa are now headed by women and in India the percentage of Women Headed Households account for 10.4 percent. Studies have shown that women heads of household tend to be younger and less educated than their male counterparts. They also generally have less land to work and even less capital and extra farm labour to work it with.

With a shortage of labour and capital, women heads of household are often forced to make adjustments to cropping patterns and farming systems. These adjustments have resulted in decreases in production and, in some cases, shifts towards less nutritious crops. Not surprisingly, these households often suffer from increased malnutrition and food insecurity.

8.6 Gender Division of Labour

The division of labour between men and women in crop production varies considerably from region to region and community to community. However, it is usually men who plough the fields and drive draught animals whereas women do the

major share of sowing, weeding, applying fertilizers and pesticides, harvesting and threshing.

Similarly, men tend to do the work of large-scale cash cropping, especially when it is highly mechanized, while women take care of household food production and small-scale cultivation of cash crops, requiring low levels of technology.

Women make an essential contribution to producing staple crops. In Southeast Asia, for example, it is women who provide up to 90 percent of the labour for rice cultivation. They do almost all the work of sourcing and transplanting, fertilizing, weeding, irrigating and harvesting. After the rice has been harvested, they also carry out the post-harvest tasks before the rice can be stored, marketed, cooked or consumed.

Women also play a big role in growing secondary crops, such as legumes and vegetables. In addition to providing essential nutrients, these crops are often the only food available during the lean season between harvests or when the main harvest fails. Home gardens, often tended almost exclusively by women, also claim precious labour-intensive time.

Despite their often-complementary roles in agriculture, studies have shown that in almost all societies, women tend to work longer hours than men. The difference in workloads is particularly marked for rural women, the world's principal food producers. Women are involved in every stage of food production and, although there is a gender-based division of labour, women do tend to shoulder the larger share. In addition to food production activities, women have the responsibility of preparing and processing the food while fulfilling their fundamental role of nurturing and caring for children and attending to elderly members of the household.

The absence of male labour, however, may force women with an expanded workload to grow less labour intensive - and often less nutritious - crops with a reliance on child labour. This has serious implications both for the family and the human capital of the country. Technological innovations can provide important opportunities to free

women's time, boost women's production potential as well as improve their quality of life and that of their families.

The division of labour between genders still remains poorly understood. This is because much of women's work in crop production consists of unpaid labour in fields that produce for the household rather than the market. As a result, women's work goes unrecorded in statistics. Only by the collection and analysis of such gender disaggregated data will development strategies target women as active and equal partners in agricultural development.

8.7 Credit Support for Women Farmers

Credit and capital are basic requisites to increase agricultural production. Women and men farmers need short-term credit to buy improved seeds, fertilizers, insecticides and herbicides and to hire farm labourers to work in the fields and help with post-harvest operations. And they need long-term credit to invest in more efficient technologies - irrigation, labour-saving tools and implements and transport - and to set up new enterprises if conditions are favourable. Yet, throughout the developing world, and even in cases where they are acting as heads of their household, women are denied full legal status that would grant them loans. This limited - and often complete lack of access to rural financial services hampers women's efforts to improve or expand their farm activities so as to earn a cash income.

Although both women and men small farmers have problems in acquiring credit in developing countries, the situation facing women is more serious because they lack collateral. As men are the legally recognized landowners, it is they who provide the collateral. When they migrate to towns and cities, leaving women to manage the household farm, the problem is clearly compounded. **one percent of the total amount of credit directed to agriculture.** Ironically, studies and experience both show that, when women succeed in obtaining credit, they are more reliable than men in their debt repayments.

A number of factors determine the reluctance of banks and credit associations to lend to women:

- they tend to be inexperienced borrowers - both a cause and a consequence of the problem;
- they usually request small loans;
- they are not normally involved in the development and extension programmes or structures that act as an interface with lending institutions;
- widespread female illiteracy means that many are often incapable of following application procedures.

Women's limited participation in male-dominated farmers' associations and cooperatives also reduces the likelihood of their receiving credit when it is allocated. Setting up revolving funds and credit schemes harnesses the potential of rural women to become full partners in sustainable development

8.8 Extension Support for Women Farmers

Agricultural extension programmes ensure that information on new technologies, plant varieties and cultural practices reaches farmers. However, in the developing world it is common practice to direct extension and training services primarily towards men. A recent FAO survey showed that female farmers receive only five percent of all agricultural extension services worldwide and that only 15 percent of the world's extension agents are women.

Studies on agricultural extension have highlighted a number of weaknesses in reaching rural women. Traditionally, most extension services have been devoted to farmers who own land and who are willing and able to obtain credit and invest it in inputs and technological innovations. Since women often lack access to land, or to other collateral with which to obtain credit, extension services, unintentionally, bypass women.

For too long, policies have been based on the assumption - proved wrong by studies - that information conveyed to the male head of a household would be passed on to its female members. But men do not necessarily discuss production decisions with their wives or transfer extension knowledge to them. Furthermore, policy-makers fail to recognize that men and women are often responsible for different crops, livestock, tasks and income-generating activities and that their extension needs consequently differ.

Extension services usually focus on commercial production rather than on subsistence crops, which are the primary concern of women farmers and also the key to food security in developing countries. Agents will often choose to work with a few farmers judged to have a progressive attitude, while neglecting the resource-poor and landless, including women. To compound the problem, extension meetings are often scheduled at times when women farmers are unable to attend because of their other household responsibilities.

As rural women are a vital link in agricultural development, it is essential that they take their place alongside men as full participants and beneficiaries of extension programmes.

8.9 Gender Issues in Agriculture

Feminization of Agriculture

Between 1977 and 2001, the female to male cultivator percentage rose from 14% to 32%. The significantly high and growing population of female headed households have also highlighted women's contribution to agriculture.

Almost all active women in rural India can be considered as 'farmers', in some sense - working as agricultural labourer, unpaid workers in the family farm enterprise, or combination of the two. Moreover, several farm activities traditionally carried out by men are also being undertaken by women as men shift higher paying employment.

Thus rural India is witnessing a process, which could be described as 'feminization of agriculture'.

Over-burden of Work

Rural women are much more over-burdened than men owing to their multiple occupations. Researches on women in agriculture have revealed that on an average women work for 15-16 hours a day. Studies further point out that farm activities which are time and labour intensive, monotonous, repetitive and more drudgery prone are generally performed by women. Since these operations are done manually, they cause considerable physical and mental fatigue and health problems.

Impact of Technology

Some of the new agricultural technologies are reported to have affected farm women adversely. Green revolution had led to the dispossession of small women landholders, who have been forced to join the ranks of wage earners. Where the new agricultural technology led to multiple cropping, the work load of women has increased. While a number of tasks performed by males have been mechanized, the tasks usually allotted to women continue to be manual and suffer from drudgery. Even where improved techniques have been found for the women's activities, there is not sufficient access to training in such technique.

Facilities and Support Services

There is rigidity for female labourers in terms of working hours, place and duration of work. This further adds to the problems and because of this, children are neglected and health of women is also adversely affected. Lack of adequate support services like child care services-creche, balwadi, adequate maternity and health care, lack of safe drinking water etc. further add to their problems.

Development Bias

Despite the contribution of women in the production process, an all-pervasive bias of development planners in treating them primarily as consumers of social services rather than producers, kept them away from the development programmes in agriculture and allied sectors.

Women suffer from a statistical *purdah* as a result of which their contribution is not recognized. They often have heavier work loads than men and bear virtually sole responsibility for family welfare and household management. However, they have limited control over productive resources. Gender discrimination, rooted in law and custom, is pervasive and impedes socio-economic development.

Constraints to Women's Access to Resources

Many of the constraints that rural women confront are similar to those that resource poor farmers confront like lack of access to land, credit, training, extension and marketing facilities. But, for social and economic reasons, women's constraints are even more pronounced and, in general, development interventions that seek to remove constraints for poor farmers do not reach women.

Consequently, the development of technologies specifically tailored to women-specific occupations and the involvement of women in technology development and transfer have received inadequate attention from both scientific and administrative departments of governments.

Access to Land

Women's lack of access to land or insecure tenure continues to be a major obstacle to increasing their contributions and benefits. When women have access to land, they often do not have secure tenancy and tend to have smaller and less productive plots in comparison with men. While land access is increasingly problematic for poor men and

women, women's access has further restriction by inheritance laws and customs. Rural women-headed households are especially affected by land constraints.

Access to Credit

Women face higher credit risks, in places where women are legally entitled to access to financial institutions they face problems getting loans because they often belong to the poorest sector of the rural population. Rural financial institutions are also often hesitant to accept women clients because they in an even greater proportion than men, cannot fulfill collateral requirements, are inexperienced borrowers, do not have access to extension and marketing services and cannot fulfill application requirements.

Access to Markets

Women engaged in agriculture, forestry and fishery tend to produce small quantities and have poor access to marketing boards and cooperatives. Therefore, women sell mainly to private traders and have low bargaining power. Institutions which promote women's group access to market should be strengthened. Successful examples are of SEWA, Gramin Bank etc.

Research and Technology Development

Women only benefit from agricultural support programmes if the information, technology and methods imparted are relevant to their production activities. Agricultural research is generally less oriented towards adapting technology to women's physical capabilities or towards addressing their tasks. Women's low productivity stems mainly from lack of appropriate technology.

Access to Extension and Training

Women farmers usually have been neglected in extension efforts. Recently, the need for innovating changes in extension programmes for women farmers are being felt. The Central Sector Scheme Women in Agriculture which started on a pilot basis in



1993-94 in seven states has shown encouraging results and was expanded to few other states.

Training and Capacity Building of Farm Women

The need for capacity building and skill upgradation of farm women is now receiving the priority, it deserves. Special extension and technology dissemination programmes for women are being implemented.

Emphasis in Various Plans

There has been a significant shift in the approach towards the well being of women from welfare during 1950s to Development during 1970s and to Empowerment during the 1990s.

The strategy of the Eighth Five Year Plan was to increase participation of women in economic activities by getting them organized, along the cooperatives and trade union lines and expanding their access and control over resources through legal and administrative action.

The Ninth Five Year Plan has identified empowerment of women as an objective and calls for the preparation of component plans for women in every sector of development. This has created an unprecedented opportunity for ensuring that women's needs and perspectives are adequately reflected in the plan-process. There is now need to engender the development process. An attention in this direction would require identification of major constraints which hamper the productivity of women farmers and recommend appropriate policy and institutional measures to overcome those constraints. These measures may be in terms of separate training for them; preferential membership in the rural cooperatives, access to technology, credit and marketing; and imparting new skills through a combination of training, practical demonstrations supplemented with hands-on experiences in the field.

The Agricultural Policy 2000 has also highlighted incorporation of gender issues in the agricultural development agenda recognizing women's role as farmers and producers of crops and livestock, as users of technology, as active agents in marketing, processing and storage of food and as agricultural labourers.

The policy states that high priority should be accorded to recognition and mainstreaming of women's role in agriculture. Appropriate structural, functional and institutional measures would be initiated in the Tenth Plan to empower women and build their capacities and improve their access to inputs such as land, credit and agricultural technology.

8.10 Gender Analysis

Gender analysis is the first and most critical step forward towards gender-responsive planning and programming. It involves the collection and analysis of sex-disaggregated information. It examines the differences, commonalties and interactions between women and men. Gender analysis examines women's and men's specific activities, conditions, needs, access to and control over resources, and access to development benefits and decision-making.

There are several frameworks and methodologies to conduct a Gender analysis in development related fields like the Moser Framework, the Harvard Analytical Framework, the Social-relations Framework, the Longwe Framework etc. Each model has its strengths and weaknesses. Some are useful for micro-planning and give greater importance to gender roles (Harvard Framework), while others emphasise the enquiry into social relations. Some have been designed to exclusively look at women's empowerment (Longwe Framework).



To conduct a Gender Analysis, a core set of issues should be addressed. These are:

Women's and men's roles.	Who does what, with what resources ? Paying particular attention to variations within sub-groups of women and men (eg. elderly women, adolescent girls, men from urban areas, etc). Typically, women perform three kinds of roles: - Productive roles (paid or not); - Reproductive roles (sustaining family living conditions and basic needs—usually unpaid work), and - Community role.
Factors that shape gender roles and the gender division of work	Depending on the circumstances, traditions and institutions that shape gender roles represent constraints and/or opportunities for women and men. Understanding to what extent, and when, they are the one or/and the other is critical to designing culturally appropriate programmes and projects.
Access to and control over resources and opportunities, and their systems of distribution	Not all men and women have the same access to and control over resources and opportunities. Understanding the mechanisms and rules by which the resources and benefits are distributed is important to assess the situation of women vis-à-vis men (and vice versa) and determine the most effective entry points for action.
Access to and participation in decision making processes	Who decides? How are decisions taken concerning women's and men's lives and those of their families? Are women and men equally represented or given an opportunity to influence such processes?
Men's and women's practical and strategic needs and interests.	Given their respective roles, who needs what for what purpose?



The format below can be used for analysis of roles played by men and women in different crop production activities, livestock rearing, household and off-farm production activities. Participation of both male and female members of the households should be ensured for analyzing the activities performed in each sector.

Gender Analysis of Activities

	Males	No of days	Females	No. of days
Crop Production				
Crop				
or				
Field 1				
Task - 1.....
Task - 2
Task - 3
Livestock Production				
Animal				
Task - 1.....
Task - 2
Task - 3
Total				



The following table can be used in a focused group discussion for understanding the access and control profile of men and women over different resources, in a household and community.

Access & Control Profile

Resource	Access		Control		Comment
	Women	Men	Women	Men	
Land					
Equipment					
Labour					
Cash					
Employment Opportunities					
Education/Trainings					
Others					

The information generated using the above tables will help the extension functionaries and the community to understand the existing scenario of gender division of work / roles, workload and the time spent on different activities. Further, it will be helpful to plan the extension activities as per the needs of the farming community

Example: INTEGRATED FARMING OF PADDY AND SHRIMP IN THE POKKALI FIELDS AT COCHIN

Statement of mandays requirement/ha for paddy cultivation and shrimp culture in seasonal pokkali fields at Vypeen

Paddy Cultivation (Monsoon)			
Details		Mandays	
		Men	Women
1	Bund raising & channeling	10	00
2	Mound raising	35	05
3	Seed soaking & sowing	05	03
4	Payal (algal macro vegetation removal)	02	25
5	Weeding	02	25
6	Transplanting	02	25
7	Preparation of treshing ground & fabrication of shed	04	02
8	Harvesting	11	20
9	Post harvest labour	10	15
10	Measuring & storing	3	03
Total		84	123
		207/ha	

Source: Gender Dimension and Development, Project on Approaches to Engendering Agricultural Research & Extension on Networking mode: NRCWA / ICAR, Compiled & Edited by Dr. Indu Grover and Dr.Nishi Sethi, (Ref: Study conducted by K.S.Purushan, Kerala Agricultural University, Fisheries Station, Puduveypu, Cochin)

8.11 Case Study

a. Agriculture

In the Reddiarchatram region of Dindigul district in Tamil Nadu, M.S. Swamination Research Foundation (MSSRF), introduced an eco technological approach for pest control in the form of biopesticides at farm level. The technology involves the breeding of a Parasitoid, Trychogramma, for killing the eggs laid by pests like Helliiothis from green worms, which caused crop loss to farmers.

The technology was introduced primarily through the involvement of women from landless and marginal landholding families, who were formed into SHG's. The objective was to address the problem of pest control and management and enhancing incomes, while generating self-employment opportunities for poor women and bringing them into new skills. The women were trained in the new technology and the management of the centre. The technology has been well received by the farmers, given its cost-effectiveness and easy adaptability at farm level. The process has brought women into new skills, generating employment and incomes for many poor women. Women manage the centre independently and have evolved as trainers, while linking up with commercial banks in the area and with farmers associations to spread the technology. However, larger questions of changes in gender relations and male attitudes towards women taking up new skills need to be looked at more closely. Meanwhile, given the fact that most of the women in the project are from landless, marginal holding families, other larger questions related to their strategic interests like land entitlements and ownership over productive assets remain unaddressed within the project.

b: Community Bio - Gas Plant

Introduction of a Community Biogas Plant (CBP) in a village and ensuring its successful sustenance is not easy as the project demands the cooperation of both men and women of the village as a whole. As one Sarpanch very aptly put it, "it is not managing the plant which is difficult, the tough part is managing the people." It is also important that any technology that supplies cooking energy should obviously be directed towards women. To cite an example, a Community Biogas Plant set up in Fateh Singh ka Purwa, a village in Etawah district of Uttar Pradesh, was the first such plant to serve an entire village. Technologically, this demonstration plant was a success but socially it was a failure. Trouble started after the plant ran successfully for a year. Male community leaders pointed out that they were not interested in energy for cooking and would rather have energy to power irrigation pumps, chaff cutters and milling machines. Women, were primarily dependent on the plant for their cooking

requirements and it was decided without consulting them that gas supply would be limited to two hours in the morning from 8-10 a.m, and by then women were already in the fields. This fact was completely ignored by the CBP organizers. For the women, the gas did not even provide 25% of their day's cooking needs and they had to look again for wood and prepare dung cakes. The new technology of CBP had also increased the women's dependence on the men even for routine cleaning of the burners. The technology was clearly not under the control of women. In the light of conflicting priorities and needs on the gas by women and men, women's cooking energy needs got relegated to second place.

Source: Biogas Co-operative - Togetherness is the key, Women, Energy and Development, Urja Bharati June 2001, Ministry of Non-Conventional Energy Sources, New Delhi

Questions for Case analysis:

1. What was the objective of the program?
2. What were the interventions undertaken?
3. What was the impact on gender and Key lessons learnt?

c. Value of Time*

An NGO working in the Kolli hills in Tamil Nadu held periodic capacity building programmes for both men and women. Initially, there was reluctance on the part of the people to attend these sessions since they lost out on wages. Since the NGO did not want people to suffer on income loss they decided to document the daily activities of both men and women in the area.

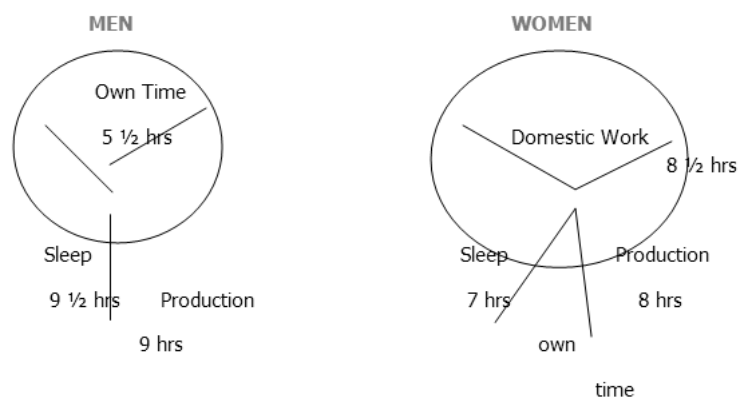
The NGO's study revealed that women in the Kolli hills villages rise as early as 4.00 am. Their morning duties include cleaning the house, cooking, cleaning utensils, child care (including bathing the child, feeding, sending to school etc). Between 9.00 am to 1.00 pm they are involved in agricultural work. After a break of one hour at work, during which time the women attend to other leftover household work like washing

clothes, they resume agricultural work and continue working till 6.00 pm. The evenings are spent fetching water, cleaning the house, cooking and preparing for the next meal. They finally go to bed only at about 9.00 pm. Agricultural activities in which women are involved include seed selection, ploughing (though the first ploughing for the season is always a man’s job), harvesting and storage of grains.

The men rise later than the women (at about 5.30 am). Some of them collect grass for their cattle. After having breakfast men leave for the fields to do agriculture work or to graze cattle. This continues till 6.00 pm with a break for lunch and rest in the afternoon. Evenings are spent in recreational activities and they go to sleep after dinner at about 8.00 pm. Agricultural activities in which men participate are ploughing, FYM application, driving away birds, measuring the grains after harvest and marketing.

The NGO decided that if people were given a stipend they would attend the capacity building sessions more willingly. So they asked the people themselves to fix the amounts. This was done on the basis of prevailing wage rates with men getting more than women. However, after a while, it led to dissatisfaction from the women who wanted to be paid just as much as the men.

The analysis of the case study from the Kolli Hills tract brings out the work load of village women and men and their difficulties in participating in training and extension activities. The analysis reveals the time allocation and the nature of activity of both men and women during 24 hours from the case study as detailed below.



The discussion on the above findings highlights how the existing gender division of labour, which is socially determined, aggravates the drudgery of women, and that this is not only an unjust practice but has ramifications on women's health. The division of labor is also negating efficiency, so inspite of having too much work, women's labour contribution is undervalued. Women's status does not reflect their true role in the economic sphere. To bring about a change in perceptions about women's time use, the efficiency, welfare and equity arguments must all be understood and applied. This exercise helps in understanding the use of the tool for various purposes, and its relevance for planning of extension activities.

8.12 Gender Budgeting

8.12.1. What is Gender Budgeting?

Gender Budgeting is a dissection of the Government budget to establish its gender-differential impacts and to translate gender commitments into budgetary commitments.

Thus Gender Budgeting looks at the Government budget from a gender perspective to assess how it addresses the needs of women in the areas like health, education, employment, etc.

Gender Budgeting does not seek to create a separate budget but seeks affirmative action to address specific needs of women.

Gender Responsive Budgeting initiatives provide a way of assessing the impact of Government revenue and expenditure on women.

Why Gender Budgeting?

Budgets are universally accepted as a powerful tool in achieving development objectives and act as an indicator of commitment to the stated policy of the Government. *National budgets reflect how governments mobilize and allocate public resources, and how they aim to meet the social and economic needs of their people.* The rationale of gender budgeting arises from recognition of the fact that national budgets impact



various sections of the society differently through the pattern of resource allocation and priority accorded to competing sectors. The budgetary policy of the Government has a major role to play in achieving objectives of gender equality and growth through content and direction of Fiscal and Monetary Policies, measures for resource mobilization, affirmative action for under privileged sections etc. Women stand apart as one segment of the population that warrants special attention due to their vulnerability and lack of access to state resources. *Thus gender responsive budgets policies can contribute to achieving the objectives of gender equality, human development and economic efficiency.* The purpose of gender budgeting exercise is to assess quantum and adequacy of allocation of resources for women and establish the extent to which Gender commitments are translated in to budgetary commitments. This exercise facilitates increase in **accountability, transparency and participation of the community**. The macro policies of the Government can have a significant impact on gender gaps in various macro indicators related to health, education, income, etc. Gender mainstreaming **requires gender responsive policy. When gender equality considerations are incorporated into policy making, the concerns and needs of both women and men become integral part of the design, implementation, monitoring and evaluation of policies and programmes in all sections of society.**

Evolution of the concept of Gender Budgeting

The perspective on gender budgeting has greatly evolved over the last few years from the initial post facto, statistical exercise that sought to establish quantum of resources allocated for women in the Union and State Budgets. The range of Gender Budget Analysis is now perceived as a mandate to examine, with a gender perspective,

- Public Policies- Fiscal and Monetary, Trade Tariffs etc
- Budgetary allocations for various sectors and sections of the Economy- For eg. allocation in the social sector for Education, Health etc
- Content and direction of various schemes and programmes- reservation of benefits for women in Food for Work

- Implementation of various schemes and projects and incidence of benefit-Achievement of targets,
- Public expenditure and impact on macro indicators like literacy, participation in work force, MMR etc.

Gender Mainstreaming- The new mantra

The conventional approach to Gender budgeting, i.e. isolating public expenditure-direct and indirect – for women, would continue to be a core activity under the broad gender budgeting exercise with future action concentrating on fine tuning methodology and universalizing the tools for application at all levels of public expenditure.

However, a broader perspective is emerging under the concept of Gender Budgeting- **Gender Mainstreaming**. The gender perspective on Public Expenditure and Policy is no longer restricted to the realm of social sector Departments like Education, Health, Rural Development etc. All areas of public expenditure, Revenue and Policy need to be viewed with a gender perspective.

It is necessary to recognize that women are equal players in the economy whether they participate directly as workers or indirectly as members of the care economy. To that extent, every policy of the Government fiscal, monetary or trade, has a direct impact on the well being of women. Thus it is not adequate to analyze in detail, allocation of resources for a few sectors of the economy which are traditionally considered as women related. The analysis has to cover every rupee of public expenditure. It has to cover the way schemes are conceptualized and how women friendly they are in implementation and targeting of beneficiaries. It has to embrace a gender sensitive analysis of Monetary policies, covering impact of indicators like inflation, interest rates etc and Fiscal policies covering taxation, excise etc. Thus gender budgeting analysis has to go hand in hand with gender mainstreaming. This is a mammoth task in the current scenario when there is a lot of disaggregated data which has to be gender sensitized and analyzed. Micro studies will have to be conducted to study the impact of public and fiscal policy so that



they may guide macro policies. Thus a wide gamut of activities need to be undertaken for gender mainstreaming.

8.12.2. *Strategic Framework of Gender Budgeting Activities*

After a consultation process, the Ministry of Women and Child Development has adopted "Budgeting for Gender Equity" as the Mission Statement for this initiative and has drawn up a *Broad Framework of Activities* that would constitute action areas for gender mainstreaming.

Quantification of allocation of resources for women in the Union, States and Local Administration budgets and expenditure thereof.

Refining and standardizing methodology and development of tools.

Trend Analysis

Analysis of change in pattern, shift in priorities in allocation across clusters of services etc.

Variations in allocation of resources and actual expenditure

Adherence to physical targets

Gender Audit of policies of the Government- monetary, fiscal, trade etc. at the Centre and State levels

Research and micro studies to guide macro policies like credit policy, taxes etc

Identification of gender impact of policies/interventions viewed as gender neutral

Micro studies to identify need for affirmative action in favour of women towards correcting gender imbalances

Impact assessment of various schemes in the Union and State budgets

Micro studies on incidence of benefits

Analyzing programmes, strategies, interventions and policy initiatives **from the perspective of their impact on status of women as reflected in important Macro Indicators** like literacy, MMR, participation in work force

Eg- analysis of substance and content of various interventions directed at health of women and correlate the same with indicator like MMR to establish need for corrective action in formulation of scheme/ approach.

Institutionalizing the generation and collection of gender dis-aggregated data of cost of delivery of services

Developing MIS for feed back from implementing agencies

Inclusion of new parameters in data collection in Census and surveys by NSO, CSO etc

Consultations and Capacity building

Collation of research and exchange of best practices

Developing methodologies and tools for dissemination Forums and Partnerships amongst experts and stakeholders.

Review of decision making processes to establish gender equity in participation- review of extant participation of women in decision making processes and to establish processes and models aimed at gender equity in decision making and greater participation of women.

Formulation and reflection of **satellite accounts** to capture the contribution of women to the economy by way of their activities in areas that go unreported like care economy, unpaid work in rearing domestic animals etc.

8.12.3. Tools of Gender Budgeting

Guidelines for Gender Sensitive Review of Public Expenditure and Policy

These have been framed by the Department of Women and Child Development in the form of checklists I and II. Checklist I is for programmes that are beneficiary oriented and consciously target women. Checklist II covers mainstream sectors.



Checklist I for Gender Specific Expenditure

Conventionally, gender budget analysis, by way of isolation of women related expenditure, has been carried out for **Ministries/Departments like** Health and Family Welfare, Rural Development, Human Resource Development, Urban Employment and Poverty Alleviation, Youth and Sports Affairs, Labour, Social Justice and Empowerment, Tribal Affairs, Drinking Water, Small Scale Industries and Agro and Rural Industries, Science and Technology, Non-Conventional Energy Sources, Textiles and Agriculture.

Suggested steps that may be undertaken by these various Ministries/Departments who are running programmes/schemes of a gender specific nature i.e. where the targeted beneficiaries are primarily women are as follows:

Planning and Budgeting

List of schemes and programmes which are gender specific

Briefly indicating **activities undertaken** under the programme for women.

Indicating expected **output indicators** like number of women beneficiaries, increase in employment of women, post project increase in resources/income/skills etc.

Quantifying allocation of resources in annual budget and physical targets thereof.

Assessing **adequacy of resource** allocation in terms of population of targeted beneficiaries that need the concerned schematic intervention, the trend of past expenditure etc.

Performance Audit

Reviewing actual performance- physical and financial vis a vis the annual targets and **identifying constraints** in achieving targets (like need for strengthening delivery infrastructure, capacity building etc.)

Carrying out **reality check- Evaluation of programme intervention**, incidence of benefit, identifying impact indicators like comparative status of women before and after the programme etc

Compiling a trend analysis of expenditure and out put indicators and impact indicators.

Future Planning and Corrective Action

Addressing constraints identified from performance.

Establishing requirement of Resources in terms of population of targeted beneficiaries/ magnitude of perceived problems like IMR, MMR, literacy ratio etc.

Reviewing **adequacy of resources** available – financial and physical like trained manpower etc.

Planning for **modification in policies and/or programmes/schemes** based on results of review.

Checklist II for mainstream sectors

Mainstream sectors like **Defence, Power, Telecom, Communications, Transport, Industry, Commerce** etc. may consider adopting the following check list to determine the gender impact of their expenditure.

List of all programmes entailing public expenditure with a brief description of activities entailed.

Identifying target group of **beneficiaries/users**.

Establishing whether users/beneficiaries are being categorized by sex (**male/female**) at present and if not to what extent would it be feasible.

Identify possibility of undertaking **special measures** to facilitate **access of services for women**- either through affirmative action like quotas, priority lists etc. or through



expansion of services that are women specific like all women police stations, women's special buses etc.

Analyzing the **employment pattern** in rendering of these services/ programmes from a gender perspective and examining **avenues to enhance women's recruitment**.

Focus on **special initiatives** to promote **participation of women** either in employment force or as users.

Indicating the extent to which **women are engaged in decision making** processes at various levels within the sector and in the organizations and initiating action to correct gender biases and imbalances.

These exercises can be commenced by each Ministry/Department of the Government, to start with, for a few select programmes/schemes which may be selected either in terms of their perceived gender impact, or the selection can be based on considerations of heaviest budget allocation. Based on the result of carrying out the above steps, the gender budgeting exercise may be institutionalized in the manner detailed in checklist I

A few illustrative examples of gender initiatives in mainstream sectors are given below:
Priority in awarding commercial/ domestic power connections for women entrepreneurs, widows, households headed by women, etc.

Priority in allocation of industrial licenses/commercial plots/petrol pumps and gas stations for women, women cooperatives/self help groups etc.

b. Gender Profile of Public Expenditure

This entails review of all schemes and public expenditure from a gender perspective and isolating the gender component by way of expenditure and physical targets. Trend of the gender component is indicative of extent to which budgeting is gender responsive.

c. Beneficiary Needs Assessment

Establishing requirements from the point of view of women and reviewing effectiveness of public expenditure accordingly.

d. Impact Analysis

Establishing actual impact of public expenditure and policies from gender perspective, through monitoring, evaluation and field level surveys. This would include tracking flow of intended benefits.

e. Gender-Disaggregated Public Expenditure Benefit Incidence Analysis

This entails analysis of the extent to which men and women benefit from expenditure on publicly provided services.

f. Gender-disaggregated Revenue Incidence Analyses

This entails analysis of the different effects on women and men produced by the kind of revenues raised by governments. It seeks to understand the gender perspective of direct (income, corporate taxes) and indirect taxes (value added tax) and user fees.

8.12.4. Gender Budgeting – State level

In the meeting of the National Development Council held on 27-28 June 2005, the Prime Minister has emphasized upon the need for State Governments to join hands in this area.

"The issue of gender bias is another area which needs focused attention. In the Union Budget for 2005-06, we have made a beginning in gender budgeting by incorporating a separate statement highlighting gender sensitivities of budgetary allocations under 10 Demands for Grants, to be extended to all Central Ministries. But this task will remain incomplete unless all the States join hands in ensuring development justice to women. This is one of the important instruments to tackle the growing violence against women, which begins even before their birth and continues

through their entire life span. It cuts across caste, class community and prevails in all parts, rural and urban. This is the right forum to pledge our wholehearted and unequivocal support for ensuring a violence-free world for our women and girl children."

The State Governments collectively reflect a higher amount of women related expenditure than GOI.

(Source:- Annual Report, Department of Women and Child Development, GOI)

Increasing trend in Public Expenditure on Women Over the decade 1993-94 to 2002-03- total expenditure on women development has increased from Rs. 1083.57 crores in 1993-94 to Rs. 3719.16 crores in 2002-03 (B.E.).

The **share of the Central Government** has ranged between **40 to 50%** in expenditure on women.

The above position only reinforces the importance of extending Gender Budgeting initiatives to the State Governments. Further, implementation of all important GOI schemes is with State Governments. Thus any exercise in Gender Budgeting is incomplete without State Government initiatives States could consider setting up Gender Budget Cells in key Departments.

Role of GB Cells

- Act as a nodal agency for all gender responsive budgeting initiatives.
- Pilot action on gender sensitive review of public expenditure and policies (Expenditure/Revenue/Policies/Legislation etc.) as per Checklist I and II
- Guide and undertake collection of gender disaggregated data- for target group of beneficiaries covered under expenditure, revenue raising/ policy/ legislation
- Guide gender budgeting initiatives within Departments as well as in field units responsible for implementing government programmes.

- Conduct gender based impact analysis, beneficiary needs assessment and beneficiary incidence analysis to
 - Establish effectiveness of public expenditure
 - Identify scope for re-prioritization of public expenditure
 - Improve implementation etc.
- Collate and promote best practices on participative budgeting for and implementation of schemes

8.13. Guidelines for Mainstreaming Gender

Gender must be integrated into ALL stages of the project cycle.

Project formulation and design

1. Ensure gender is addressed during fact-finding missions and incorporated into the project concept/outline paper, over viewing the different roles, functions and needs of women and men in the sector;
2. Ensure gender is incorporated into the terms of reference for the identification/ formulation mission to address and analyse the issue;
3. Employ a gender specialist or a social development specialist with gender expertise to assist in the design, monitoring and evaluation of the project. Also employ/deploy staff (both men and women) in proper ratio at decision making level and field level positions.
4. Separate data by sex in all baseline studies and identify gender specific indicators from the baseline studies;
5. Undertake participatory rural appraisal activities that involve community Level women and men actively;
6. Assess the gender capacity of the implementing institutions as a part of overall capacity development;

Project implementation and monitoring

1. Involve gender specialists in project monitoring;
2. Consult with the women's groups or their representatives to ensure that women's needs are addressed in project activities;
3. Devise and measure gender indicators to differentiate male and female beneficiary outcomes;
4. Ensure programme staff monitor project disbursements to ensure that inputs are used in such a way as to ensure women have equal access to project resources and benefits;
5. Strive towards equal representation of women and men in project management and meetings
6. Ensure gender issues are raised/ on the agenda for meetings and reviews;
7. Ensure progress reports detail data disaggregated by sex and that they analyse gender issues;
8. Conduct gender analysis training for your staff and counterparts or fund a gender specialist to do this; Strive towards equal representation of men and women in all training activities.

Project Review and Evaluation

Ensure the programme staff understands and applies gender indicators of success;

Impact of the project interventions on men and women in terms of

1. Strengthening leadership and capacities of women and men
2. Gaining new skills (financial, managerial, organizational, technical etc)
3. Access and control over resources and technology as against the situation prior to the intervention
4. Impact of programme in terms of increased economic returns and enhancement of new economic opportunities for men and women

5. Nature of sharing benefits from programme between men and women
6. Impact of the programme on women's practical and strategic gender needs (education, health, improved employment opportunities, political status, violence, land entitlements etc)
7. What were the driving and restraining factors in the process of planning, implementation and monitoring of the project?
8. What are the key lessons learnt?

8.14 Strategies for Mainstreaming Gender

1. Organizing Women Groups.

Male extension workers can be trained to work more closely with women in settings that are culturally acceptable, such as women groups.

2. Such groups can also improve access to infrastructure.

3. Technologies to reduce energy and time spent, particularly the household and farm production activities. Extending the technological innovations such as weeders, paddy threshers, winnowers, sprayers, harvesting tools, parboiling units, maize shellers, dal making machines etc., will reduce the burden of women.

4. Increasing the bio mass production to meet fuel needs, plantation of fast growing fodder in common lands and developing mechanisms for sharing the fodder helps women in saving lot of time and devote this time for income generating activities.

5. Innovative credit programmes using non-traditional forms of collateral and local institutions (women groups) can ensure that women are able to obtain access to credit.

6. Identifying the right training and extension needs of women is one of the most important step in initiating any developmental programme.

* **Gender Analysis:** Gender Analysis of activities, resources, constraints, implications and benefits should be understood using Participatory Approach. This information should be taken into consideration for the need assessment.



The staff members / extension functionaries ability to do this has to be built up.

1. Giving women farmers more access to meetings, trainings, exposure visits and demonstrations, organizing training programmes based on the needs of the women. Institutional and village based trainings to be organized as per the convenience of the women farmers.
 2. Where severe fragmentation exists, collective farming should be encouraged by women.
 3. Farmer to farmer training or participatory training should be encouraged.
 4. Active women can be selected, trained and they should be provided with inputs and credit to practice the improved technology. Their fields can be used as demonstration plots for training other women.
 5. Recruiting more women extension workers from the rural areas and training them.
 6. Female para-extension agriculturists-relatively uneducated women with short crash courses on agriculture can be posted in their own villages.
 7. Appointing female supervisors and SMS.
 8. Making better use of male extension agents.
 - Change the stereo-typed attitude of male agents with regular gender sensitization courses
 - Increasing awareness of gender roles
 - Developing skills in use of language and communication to suit women
1. Using women as contact workers.
 2. Crèches for children of women farmers. This will enable girls to go to schools.
 3. Proper health care support for girls and women.
 4. Most of the micro enterprises undertaken by the women are based on the skills and raw material available rather than considering the market needs and market dynamics. In depth marketing study would help identify effective marketing strategy for products. Cooperative marketing of products and assigning brand names for the products would also be helpful in finding sustainable markets.
 5. While developing farmwomen programmes, the cost of the hiring consultants to conduct market analysis and market development should be kept in mind.

The Need for Different Strategies

The involvement of women in crop production varies according to the type of crop grown and the cropping systems and the socio-economic status of the family. There is also a need to make distinctions between the involvement of women as agricultural labourers and involvement of women in agricultural operations on their own farm. In relatively prosperous areas where land holdings are large and most of the agricultural operations are mechanized, women play only a marginal role. The women from poor families work as agricultural labourers irrespective of the community to which they belong. Keeping milch animals, small ruminants and backyard poultry is an important source of income for poor farm families and agricultural labourers.

The problems of tribal women are different from other rural women and they need a totally different approach. For instance, the majority of workers involved in collection of non-timber forest produce (NTFP) are women, particularly tribal women. However, approximately 70% of the NTFP collections take place in the six states of the central belt; Maharashtra, Madhya Pradesh, Chattisgarh, Bihar, Orissa and Andhra Pradesh and many tribal women face several constraints operating in the NTFP economy. This is because they spend a considerable amount of time in fetching water and therefore do not have the time to add value to minor forest produce (which would help to increase their income), the women who bring produce to the market are also exploited because they lack knowledge on proper weights and prices for the timber and there is a language barrier (traders are often from the plains with whom tribal women find difficult to communicate and bargain for prices). Programmes for tribal women therefore need a different approach to help overcome some of these constraints.

It would be a mistake to view rural women as a homogeneous social classification or to derive policies and services for “women in agriculture” that are not based on empirical research that captures this diversity (Jiggins et al, 1997). Thus there should not be any centrally generated blueprints for tackling women in agriculture issues. It is important to recognize the various categories of women farmers that exist and their

needs in the agriculture sphere and from there to develop appropriate strategies to assist them e.g. while in some parts of India may require trained women to reach women farmers, others may require trained women as motivators only, and other areas may require the male agricultural officers to be trained on women's issues to disseminate technology to women.

8.15 Gender Perspective In Agriculture - Provisions Made In The Schemes Of Department Of Agriculture And Cooperation, Ministry Of Agriculture, Govt. Of India

In order to mainstream gender concerns in agriculture, the Department of Agriculture and Cooperation is making conscious efforts to 'engender the agricultural development process' for which appropriate measures are being initiated. Currently, there are no specific allocations earmarked for women farmers under most of the schemes of the department, however, an attempt has been made almost under each scheme to identify and promote the involvement of women in areas having better potential and scope so as to ensure women's full and equitable participation under these components / areas.

The salient gender specific interventions (Division wise) are as follows:

1. **Crops Division:** The schemes namely 'Technology Mission on Cotton and On Farm Water Management for increasing Crop Production in Eastern India' are neither gender specific nor have any specific allocations for women, however to enable women to take full benefits of the scheme, the States/ Implementing Agencies are being encouraged to give preference to women farmers who head the household/ have land holdings in components like distribution of agriculture inputs, trainings and demonstrations.
2. **Extension Division:**
 - i. **Support to States for Extension Reports:** The Scheme aims at providing decentralized and demand driven extension services through active involvement of Farmers/Women Farmers/Subject Matter Specialists/NGOs/ Krishi Vigyan Kendras etc. A total of 218 ATMAs have been set up as against the target of 252

- in the Tenth Plan. The gender concerns are being mainstreamed by mandating that 30% of resources on programmes and activities are allocated for Women Farmers and Women Extension Functionaries.
- ii. **UNDP National Food Security Programme:** The agreement for UNDP-GOI Food Security programme was signed in 1998. The sub-programmes included maize based cropping system; promotion of hybrid rice; sustainable dry-land agriculture, natural resource management along with supplementary programme for cyclone affected districts and management support for food security. Under the women specific programmes implemented in the States of Orissa, Andhra Pradesh and Uttar Pradesh, 2206 Farm Women Groups (FWGs) have been directly benefited and 49,976 Women Farmers have been directly trained. The programmatic interventions concluded in December 2004, however, the support was being routed through Management Support sub-programmes upto December 2005.
 - iii. **Extension Support to Central Institutes/ DOE:** Out of 11 components of scheme, 'Support to Central Institutions / DOE' the budget for gender purposes is allocated only under one component viz. 'National Gender Resource Center in Agriculture (NGRCA)' where in the expenditure is made on women specific activities mainly -undertaking macro/micro level studies; action research on critical thrust areas related to Women in Agriculture; developing Gender Sensitization Modules for programme implementers; arranging exposure visits of extension functionaries to women specific / pro women programmes and developing a separate portal for this Centre. The NGRCA is also housing a Gender Budgeting Cell of the DAC. The Cell has sensitized the subject matter Divisions of DAC to have Divisional Gender Coordinators identified in each division. In remaining components of the scheme, consistent efforts are being made to promote both- organization of specific training programmes for women in agriculture and also improving their participation in all the training programmes.
 - iv. **Mass Media Support to Agriculture Extension:** The Central Sector Scheme "Mass Media Support to Agriculture Extension" envisages utilization of existing infrastructure of Doordarshan and All India Radio to produce and transmit programmes covering wide spectrum of topics in agriculture and allied fields for

bringing the latest information and knowledge to the farming community viz. farmers / women farmers. Special programmes are being produced and telecast under the Doordarshan – Narrow Casting programmes to transfer information and technology in areas in which women farmers are pre-dominantly engaged such as in vermi compost, nursery – raising, seed treatment, floriculture, kitchen garden, gender friendly tools etc. Also under the Doordarshan - National / Regional Agricultural Programmes the areas of women interest such as organic farming, vermi compost, nursery – raising, seed treatment, floriculture, kitchen gardening as well as their success stories are included

- v. **Establishment of Agri-Clinics and Agri-Business Centres (ACABC):** The scheme is open to all eligible Agriculture Graduates including women. As an outcome of the special efforts, so far, 1846 women have been trained out of which, 434 women have established their business ventures in different states. The scheme provides 44% back ended subsidy to the women candidates.

3. **Seeds Division:** Specific financial targets have been fixed for women farmers under the Central Sector Scheme titles ‘ Development and Strengthening of Infrastructure facilities for Production and Distribution of Quality seeds under its following components

- Seed Village Scheme
- Human Resource Development
- National Seeds Research and Training Centre (Varanasi)
- Use of Bio Technology in Agriculture and Public Awareness Campaign

The implementing agencies have been advised to allocate specific amount for women farmers.

1. **Horticulture Division:** Women as a work force contribute to the coconut cultivation and industry especially in the making of coir which is widely used. Keeping this in view, under the scheme ‘Expansion of Area under Coconut’ being implemented by Coconut Development Board’, conscious efforts are made to extend the benefits of the scheme to women farmers. During 2004-05, in Kerala state, 228 women beneficiaries out of a total of 945 were women (24.9%) while in 2005-06, their number is 231 out of a total of 1036 (22.29%).

2. Under the schemes of National Horticulture Board namely 'Development of Commercial Horticulture through Production and Post Harvest Management' and Technology, Development and Transfer for Promotion of Horticulture', 174 and 107 women have been benefited during 2004-05 and 2005-06 respectively.
3. **Machinery & Technology Division** : A number of agricultural implements and hand tools suitable for farm women have been developed by Research and Development Organizations under ICAR. These gender friendly tools are being promoted through Macro Management Scheme. The feedback from the state governments indicate that 20,380 women farmers have been benefited under this scheme during 2004-05. Under the Central Sector Scheme 'Promotion and Strengthening of Agricultural Mechanization through Training, Testing and Demonstration', the skill development aspect among women farmers has been adequately taken care of by earmarking 10% of the funds and fixing up of separate physical targets for women. Under the 'Training and Testing component', Farm Machinery, Training and Testing Institutes (4) have organized short duration training and testing programmes - both institutional and on site for farmers in the areas of selection, operation, maintenance and management of agricultural implements. A total of 309 women have been trained against the target of 400 during 2004-05 and 217 against a target of 500 during 2005-06.
4. **Integrated Nutrient Management (INM) Division**: As per the guidelines of 'National Project on Organic Farming (NPOF)', there are no gender specific activities / allocation. However, 25% seats for training of farmers on organic farming have been reserved for women farmers.
5. **Technology Mission on Oilseeds & Pulses (TMOP) Division**: There is no separate provision for gender based budgeting. However, under the NOVOD Board's schemes on 'Integrated Development of Tree Borne Oilseeds', the implementing agencies have been advised to ensure maximum participation of women in the programme.
6. **Plant Protection Division**: Under the scheme 'strengthening and Modernization of Pest Management Approach in India', there are no separate provision / budget allocated for women. However, under the sub-component 'Integrated Pest Management', the Farmers' Field Schools are organized in collaboration and



support of the State Government on different crops in which women farmers actively participate in the training activities / programmes.

7. **Natural Resource Management (NRM) Division:** Under the 'Watershed Development Project in Shifting Cultivation Areas (WDPSCA)', there is no specific component exclusively allocated for women farmers, however, under the scheme 17.5% of the total allocation is earmarked for rehabilitation component which enable the beneficiaries to take up agriculture and allied activities such as Production of short duration crops like banana, papaya, etc.; animal Husbandry / Piggery / Poultry / Duckery / Purchase of milch cows; Pisciculture; Sericulture - Plantation of Mulberry, Supply of mulberry seed worm; and house hold activities - Basket / rope / Mats making, Tailoring, embroidery, carpentry, black smithy, small house hold food processing units, cottage industries and many other activities suitable to the locality with the approval of the DWDC. These activities are mainly done by women.
8. **Rainfed Farming System Division:** Under the 'National Watershed Development Project for Rainfed Areas (NWDPRRA)' which has been subsumed with Macro Management scheme for funds, there is an active participation of women in different activities. In a Watershed Development Team (WDT), one out of four members is a woman; Each Watershed Committee has two women members to facilitate active participation of women in the programme. The women oriented users groups (UGs) are formed at each watershed. Also, for income generating activities, exclusive women SHGs as well as general SHGs with adequate participation of women are formed.
9. **Agricultural Marketing Division:** Under the scheme 'National Institute of Agricultural Marketing', the provision have been made to organize training programmes for women in the field of modern marketing system, export of horticulture produce from north-east, orientation of SHGs for women during 2005-06 and 2006-07. While, it is not possible to make women specific allocations in view of the scheme being demand driven, however, as and when the project proposals from women entrepreneurs are received, they are processed on priority basis.

- 10. Agriculture Census Division:** The 'Centrally sponsored Scheme for Agriculture Census' is not a development oriented programme and involves only statistical operations. As such, it has not been possible to fix any target / allocation for women in the scheme. However, the Division has collected, collated and documented the data on 'operational land holdings and land use pattern' on gender disaggregated basis in its Agricultural Census conducted during 1995-96.
- 11. Macro Management Division:** The Centrally sponsored Scheme - Supplementation / Complementation of States efforts through Work Plans (Macro Management) is a step towards achieving decentralization in pursuance of restoring primacy of states in agricultural development planning. Since, the scheme is being implemented through the Work Plan being prepared by the states themselves, there is no separate allocation of funds from DAC. However, some states themselves have provided funds for the benefits of women.
- 12. IT Division:** The IT Division's scheme 'strengthening / promoting agricultural information systems' is inherently gender neutral. However, it is anticipated that proportionate benefits accrue to women employees / users. The following benefits accrue to women through the scheme

Further, to encourage flow of benefits of this scheme to women farmers / beneficiaries, the following initiatives are being taken within the overall framework of the scheme.

- It is proposed to include in the guidelines the issued to the states under AGRISNET Scheme that adequate benefits of the scheme should flow to women farmers / beneficiaries.
- In training courses, women participation to be encouraged. It would also be ensured that they are represented in training courses relating to IT at least in proportion to their number among employees.

8.16. Let us sum up

This unit deals with the role of women and men in agricultural development, present status of women in the society and farming sector, Gender division of work and discrimination problems faced by women farmers particularly, in managing the home



and farm and the present support system eg. Extension services, suitability of the technologies, access to credit, markets etc. Gender analysis is the method and tool suggested in this unit along with an example for understanding the information related to roles and corresponding needs of men and women, their access and control over resources, the decision making pattern in a farming sector. This information will help the programme designers and policy makers to develop suitable strategies for addressing the gender concerns. At the end of the unit few strategies compiled from different experiences have been given which can be used by the extension functionaries either separately or in a combination of two, three strategies together as per the situation and suitability to a particular context.





Unit-9

Farm schools and Farm Field Schools – Concept and their Operationalisation

Structures

- 9.0. Objectives
- 9.1. Introduction
- 9.2. Meaning of Farmer Field School
- 9.3. Basic Concept of Farmer Field School
- 9.4. Principles of the Farmer Field School Approach
- 9.5. Characteristics of the Farmer Field School
- 9.6. The Typical Rice IPM Field School
 - 9.6.1. Agro - ecosystem Activity Matrix
 - 9.6.2. Special Topics - Activity Matrix
 - 9.6.3. Group Dynamics - Activity Matrix
- 9.7. Views on IPM Field Schools
- 9.8. Training and Visit Verses Farmer Field Schools
- 9.9. Farm School and its opertionalization
- 9.10. Summing Up

9.0. Objectives

After going through this unit, you should be able to understand

- the basic concepts of Farmer Field Schools
- Principles and characteristics of the Farmer Field School Approach
- the process involved in conducting Farmer Field Schools and
- Concept of Farm Schools

9.1 Introduction

Green Revolution was launched with an aim of improving the productivity of small farmers. By improving access to water, improved varieties, and other inputs, the Green Revolution helped to double average rice yields between the 1960's and the 1990's.

During the 1970s it became increasingly apparent that pest resistance and resurgence caused by the indiscriminate use of insecticides posed an immediate threat to the gains of the Green Revolution. At the same time, research was being conducted that demonstrated the viability of biological control of major rice pests. However, gaps still existed between the science generated in research institutions and common farmer practice conditioned by years of aggressive promotion of pesticide use. Over the ensuing years, a number of approaches were tried to bring integrated pest management (IPM) to small farmers – particularly rice farmers – in Asia, with mixed results. Some experts claimed that the principles of IPM were too complex for small farmers to master, and those centrally designed messages were still the only way to convince farmers to change their practices.

By the end of 1980s, a new approach to farmer training emerged in Indonesia called the 'Farmer Field School' (FFS). The term "Farmer Fields Schools" came from the Indonesian expression *Sekolah Lapangan* meaning just *field school*. The first Field School was established in 1989 in Central Java during a pilot season by 50 plant protection officers to test and develop field training methods as part of their IPM training of



trainers course. The name *Sekolah Lapangan* was created to reflect the educational goals; the course took place in the field, and the field conditions defined most of the curriculum, but real field problems were observed, and analysed from planting of the crop (rice) to harvest. Group decisions on the crop management was evaluated at the end of season by measuring the yield. A field was established by the participants with a research study to compare IPM methods and farmer's conventional methods. Pre- and post-tests were given, the same farmers and facilitators attended throughout the season, and graduation was based on attendance and learning performance. Graduation certificates were awarded to farmers. Thus, the Field School was a school without walls that taught basic agro-ecology and management skills. There is no right way to do Farmer Field Schools, only participatory ways.

Farmer Field School on Integrated Pest Management (IPM) was developed to help farmers alter their practices to diverse and dynamic ecological conditions. Policy-makers and donors were impressed with the results of farmers field school and the program rapidly expanded. Eventually, IPM Farmer Field School programs for rice were carried out in twelve Asian countries and gradually branched out to vegetables, cotton, and livestock and other crops. From the mid-nineties onwards, the experience generated in Asia was used to help initiate IPM Farmer Field School programs in other parts of the world. New commodities were added and local adaptation and institutionalization of these programs was encouraged. At present, IPM Farmer Field School programs, at various levels of development, are being conducted in over 30 countries worldwide.

9.2 Meaning of Farmer Field School

The Farmer Field School is a form of adult education, which evolved from the concept that farmers learn optimally from field observation and experimentation. In regular sessions from planting till harvest, groups of farmers observe and discuss dynamics of the crop's ecosystem. Simple experimentation helps farmers further improve their understanding of functional relationships (e.g. pests-natural enemy population dynamics and crop damage-yield relationships). In this cyclical learning

process, farmers develop the expertise that enables them to make their own crop management decisions. Special group activities encourage learning from peers, and strengthen communicative skills and group building.

9.3. Basic Concepts of Farmer Field School

The basic concept of Farmer Field School is:

- If I hear it, I forget it
- If I see it, I remember it
- If I discover it, I own it for life

1. **Adult non-formal education:** Field schools assume that farmers already have a wealth of experience, and knowledge. It also assumes that there may be misconceptions and bad habits learned during intensification programmes (e.g. little knowledge of natural enemies, basic fear of any insect that is seen in the field, etc.). Therefore the field Schools are oriented to providing basic agro-ecological knowledge and skills, but in a participatory manner so that farmer experience is integrated into the programme. For example, when observing in the field, facilitators will ask farmers what something is such as a natural enemy and ask who know what it might eat. Farmers give their response, and the facilitator adds his/her knowledge. If there is a disagreement between anyone, the facilitator and participants will set up simple studies to find the correct answer. In one field school farmers were discussing whether a certain lady beetle was a predator of pests or a pest of the plant. One farmer bet another on their choice. The facilitator showed how to put the lady beetle in a jar one jar with pest prey and the other with leaves. The result was that the lady beetle ate the insects and the loser had to carry the winner around the village on his back. In fact there are both kinds of lady beetles but one type is 'hairy' and the other not. This was seen by the farmers.
2. **Technically strong facilitator:** The field school is usually initiated by an extension staff member of the government, farmers' organization, or NGO. But in all cases the person must have certain skills. Most important is that the person is skilled at growing the crop concerned. In most countries, the extension staff has never grown crops 'from seed to seed' and most often lack confidence. For this reason, most IPM



programmes have begun with training field staff in season – long courses which provide basic technical skills for growing and managing an IPM crop. Some people have called this the “Farmer respect course” in that field staff comes to realize how difficult farming is, and why farmers do not immediately “adopt” their “extension messages”. Facilitation skills and group dynamic/group building methods are also included in this season to strengthen the education process in the field Schools. An uncertain trainer is a poor trainer. A confident trainer can say “I don’t know – let’s find out together” much easier when the inevitable unknown situation is encountered in the field.

3. **Based on crop phonology and time limited:** The field Schools and season long training for trainers are based on the crop phonology; seedling issues are studied during the seedling stage, fertilizer issues are discussed during high nutrient demand stages, and so on. This method allows to use the crop as a teacher, and to ensure that farmers can immediately use and practice what is being learned. Meeting on a weekly basis means that farmers are participating in a course for a whole season.
4. **Group study:** Most field schools are organized for groups of about 25 persons with common interests can support each other, both with their individual experience and strengths, and to create a “critical mass”. As individuals, trying something new is often socially inappropriate (e.g. reducing sprays, cover crops), but with group support, trying something new becomes acceptable. The number of 25 is roughly the number that can comfortably work together with one facilitator. Usually these 25 are sub-divided into groups of five persons so that all members can better participate in field observations, analysis, discussion, and presentations.
5. **Field School site:** The field schools (learning field) are always held in the community where farmers live so that they can easily attend weekly and maintain the field school studies. The extension officer travels to the site on the day of the field school
6. **Building groups:** One of the jobs of the facilitator is to assist the field school to develop as a support group so that participants can support one another after the field school is over.

7. **Basic science:** Field schools try to focus on basic processes through field observations, season-long research studies, hands-on activities. It has been found that when farmers have learned about basics, combined with their own experiences and needs, they make decisions that are effective.
8. **Study fields [non-risk] :** In the learning field of two acres, one acre is meant for conducting long term experiments. Out of which a small (usually about 1000 m²) field kept for each group study. This is the core of the Field Schools. This field is essential for a field school because farmers can carry out studies without personal risk allowing them to make management decisions that they might not otherwise attempt in trails on their own farm. This provides farmers a way of testing a new method themselves before applying it to their own farm. This provides farmers a way of testing a new method themselves before applying it to their own fields. It also allows for more interesting research topics such as defoliation simulations in which leaves are removed. The arrangement of this field varies based on local conditions.

9.4. Principles of the Farmer Field School

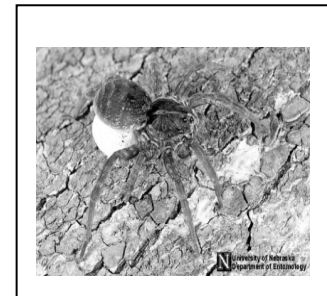
1. **“Grow a healthy crop”** means use Proper crop and plant management methods to allow plants to recover better from environmental or pest injury, avoids nutrient deficiencies related with pest attack (insects and disease), and promotes natural defenses to many insects and diseases inherent in plants.[Academic term: cultural controls].



2. **“Conserve natural enemies”** provides free biological control of insects and diseases. Parasites, predators and pathogens have long been recognized to control pest insects, but recent research shows microbial antagonists, and competitors of plant diseases are also important. Vertebrate natural enemies are also essential for control systems.

Conservation usually implies avoiding inappropriate pesticide applications (herbicides, fungicides and insecticides all have impact on insect and disease natural enemies) or improving soil organic matter necessary for beneficial soil micro - organisms. Natural enemy habitat protection and development are more effective methods of conserving natural enemies (e.g. owl houses, mulching for spiders, floral nectarines for parasites). Inoculation or inundation of reared natural enemies may be possible under special circumstances but usually only after conservation efforts have already been implemented.

[Academic term: biological control].



3. **“Observe crops regularly”** means informed decision making for appropriate interventions to be made quickly for water, soil and plant management. Inputs used are based on an ecologic economic assessment: [Academic term: Input analysis].



4. **“Farmers become experts”** in their own fields is crucial for long term management of soils, pests and crops. Expertise implies a basic understanding of the agro-ecological system, and decision making processes. Simple rules and directives may provide short term benefits but cannot sustain long term local developments.



The farmer field school deals not only with the practice that farmers want to learn about but with farmers as farmers. Farmer field schools are conducted for the purpose of helping farmers to master and apply field management skills. The farmer implements his or her own decisions in his or her own field.

In farmer field school problems are seen as challenges, not constraints. Farmer groups are taught numerous analytical methods. Problems are posed to groups in a graduated manner such that trainees can build confidence in their ability to identify and tackle any problem they might encounter in the field.

The Farmer Field Schools teaches several principles, which bring cause and effect relationships and help farmers to discover and learn. In contrast packaged approaches increase the dependence of farmers on central planners as they are neither cost effective nor effective at improving the quality of farmers management skills.

Hence, the key principles of Farmer Field Schools are, what is relevant and meaningful is decided by the learner, and must be discovered by the learner. Learning flourishes in a situation in which teaching is seen as a facilitating process that assists people to explore and discover the personal meaning of events for them; Learning is a consequence of experience; People become responsible when they have assumed responsibility and experienced success; Co-operative approaches are enabling; As



people invest in collaborative group approaches, they develop a better sense of their own worth ; Learning is an evolutionary process, and is characterized by free and open communication, confrontation, acceptance, respect and the right to make mistakes; Each person's experience of reality is unique; As they become more aware of how they learn and solve problems, they can refine and modify their own styles of learning and action.

(Jules N. Pretty)

9.5. Characteristics of the Farmer Field School Approach

Farmers as Experts: Learning by doing is the training approach used. Farmers learn by carrying out for themselves the various activities related to the particular farming practice they want to study and learn about. This could be related to annual crops, livestock/fodder production, orchards or forest management. The key thing is that farmers conduct their own field studies. Their training is based on comparison studies (of different treatments) and field studies that they, not the extension/ research staff conduct. In so doing they become experts on the particular practice they are investigating.

The Field is the Primary Learning Material: All learning is based in the field. The field is where the farmers learn. Learning field (2.00 acre) is selected in one of the trainee of the farmer's field school. Working in small sub-groups they collect data in the field, analyse the data, make action decisions based on their analyses of the data, and present their decisions to the other farmers in the farmer field school for further discussion, questioning, and refinement.

Typical Farmer Field School Learning Field Lay Out (2 ACRES)

Farmers practice ($\frac{1}{2}$ Acre)	Long Term Experiments (One Acre)	IPM ($\frac{1}{2}$ Acre)
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Extension Workers as Facilitators Not Teachers: The role of the extension worker is very much that of a facilitator rather than a conventional teacher. Once the farmer know what they have to do, and what they can observe in the field, the extension worker takes a back seat role, only offering help and guidance when asked to do so. Presentations during meetings are the work of the farmers not the extension worker, with the members of each working group assuming responsibility for presenting their findings in turn to their fellow farmers. The extension worker may take part in the subsequent discussion sessions but as a contributor, rather than leader, in arriving at an agreed consensus on what action needs to be taken at that time.

The curriculum is Integrated: The curriculum is integrated. Crop husbandry, animal husbandry, horticulture, silviculture, are considered together with ecology, economics, sociology and education to form a holistic approach. Problems confronted in the field are the integrating principle.

Trainings follows the Seasonal Cycle: Training is related to the seasonal cycle of the practice being investigated. For annual crops this would extend from land preparation to harvesting. For fodder production would include the dry season to evaluate the quantity and quality at a time of year when livestock feeds are commonly in short supply. For tree production and such conservation measures as hedge rows and grass strips training would need to continue over several years for farmers to be able to see for themselves the full range of costs and benefits.

Regular Group Meetings: Farmers meet at regular intervals. For annual crops such meetings may be every 1 or 2 weeks during the cropping season. For other farm/forestry management practices the number of meetings depend on specific activities need to be done.

Learning materials are learner generated: Farmers generate their own learning materials, from drawings of what they observe, to the field trials themselves. These materials are always consistent with local conditions, are less expensive to develop, are controlled by the learners and thus can be discussed by the learners with others. Learners know the meaning of the materials because they have created the materials.

Group dynamics/team building: Training includes communication skill, problem solving, leadership, and discussion methods. Farmers require these skills. Successful activities at the community level require that farmers can apply effective leadership skills and have the ability to communicate their findings to others.

MAJOR STEPS IN FFS IMPLEMENTATION

- FFS-Structure & Characteristics
- Participants
- Facilitators
- Classroom
- Duration
- Meeting Frequency
- Curriculum
- Session details
- Field Day

Bench Mark Survey:

Bench mark survey was conducted at the preliminary meeting in which base line data was collected for the last season from the farmers to know their farming practices,

local pest problems and also the lacunae in the farming. This data is needed to prepare an action (curriculum) for conducting IPM programmes successfully. Based on the base line survey the gaps are identified and to bridge the gaps appropriate interventions are proposed in the curriculum to be taken up at various stages of crop growth in order to reduce the cost of cultivation and increase the productivity.

Farmers Field Schools:

The farmers field schools are different from traditional type of teaching in having participatory approach. The sessions were conducted from 8.00 A.M. to 1.00 P.M. on the selected day in every week. During the sessions different exercises such as pre and post evaluation through Ballot Box Test (to assess the knowledge level of farmers), Agro-Ecosystem Analysis, identification of pest/defenders, PAR (Participatory Action Research), Insect Zoo activities were conducted. Most of these activities were field oriented. These 14 weeks farmers field school programme helped to study the changes in the pest complex, population dynamics of pest and defenders corresponding to the stage of the crop growth. These field exercises, Group Dynamics etc., made the farmers to understand the IPM approaches and become IPM experts in their own fields.

General frame work of Farmers Field School curriculum.

Week	Activities
1 st	- Preliminary meeting with village farmers ,enrollment for polam badi ,baseline survey and gaps identifications .
2 nd	- Soil sample collection and testing, importance of INM, Seed germination test, Seed treatment and Role of IPM.
3 rd	- Ballot box test, weed management, Water management and Group Dynamics
4 th	- Introduction to Agro-Ecosystem Analysis (AESA) and Fertilizer management with eference to polam badi crop



- 5th - Field Activity on AESA, Special Topic on sucking pests, Plant compensation experiments(25%,50% & 75%)
- 6th - AESA, Pit fall trap experiments(every fortnight),Special topics on Bio-pesticides(NSKE,NPV,Bt.),Group Dynamics
- 7th - AESA Defoliation experiments(10%,50% & 75%)
- 8th - AESA ,Pest management, Role of pheromones, Insect Zoo activities & Group Dynamics.
- 9th - AESA, Field studies on natural enemies, Disease management, Topping, Insect Zoo activities
- 10th - AESA, pest management, bird perches and Mud wasp perches, Yellow sticky traps, Group Dynamics.
- 11th - AESA, management of stem rot, Sheath blight, blast & Insect Zoo activities.
- 12th - AESA ,management of sucking pests & Group Dynamics
- 13th - AESA, Rodent management, Identification, Ecology of Rodents & Preparation of Rodenticides
- 14th - Field Day, Training of Non ICM farmers. Distribution of certificates to ICM farmers, Discussion on post FFS activities.

THE PROCESS OF FFS

I. Organization and management

Duration : Usually 4-5 hours

Learning: Through sub-groups

Session management : Host teams

Leadership: Elected representatives

Typical polam badi session

The duration of each polam badi will be 4-5 hours preferably 8.00am to 1.00 pm.

- 8.00am - Review of previous week activities, briefing on the days activity.
- 8.30am - Field observation on Agro Ecosystem.
- 9.45am - Short tea break
- 10.00am - Energizer or group building exercise.
- 10.30am - Begin making agro-ecosystem analysis, drawing and discuss, management decisions.
- 12.00am - Each team presents results and group arrives at a consensus on management needs for the coming week.
- 12.30pm - Special topic
- 1.00pm - Review of the day, planning for next week,closure.

AESA is a four-stage process

1. Field observation
2. Detailed the field observations on a presentation size paper
3. Presentations of results and conclusions/decisions by sub-groups
4. Whole group synthesis the preservations for collective implementations of the decisions arrived at.

Steps in Agro-Eco System Analysis



1.OBSERVATION



2.RECORDING



3. DISCUSSIONS IN SMALLGROUPS



4. DRAWING



Presentation on Agro Eco System Analysis by Farmers

III. Experimentation

Comparative studies

Field studies e.g. insect zoos, soil texture etc.

Long term or short term

IV. Group dynamics

To develop team building skills, organizational skills, cooperation, planning etc.



V. Special topics

Build on existing knowledge

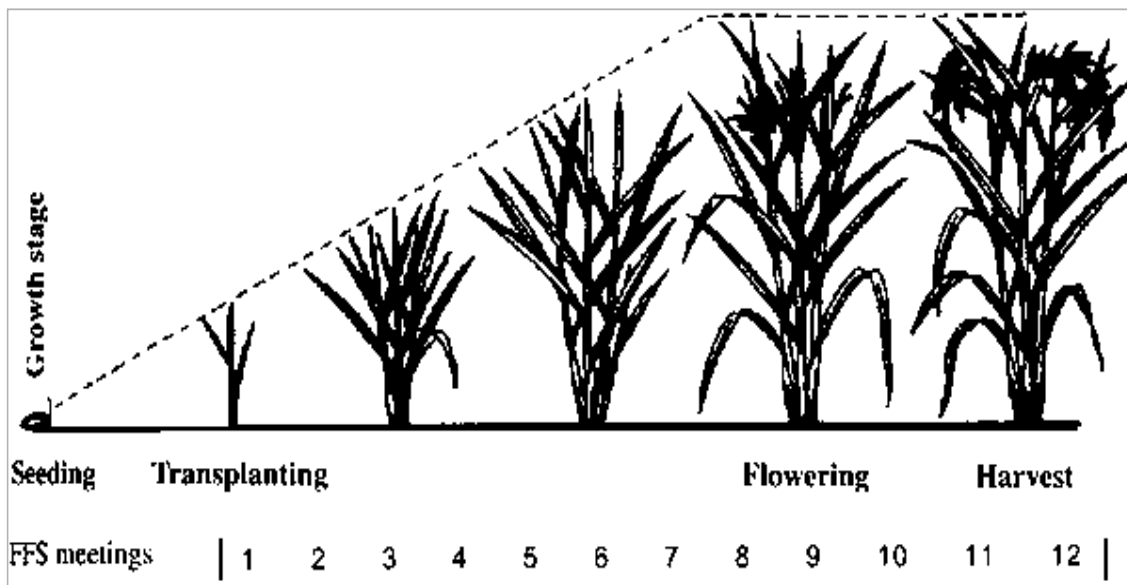
Enable farmer interaction and sharing of information

Ensure demand lead information dissemination

Promote interaction between farmers, extension officers and scientists

10.6. The Typical Rice IPM Field School

The IPM Field School is a field based learning experience for 25 farmers. The Field School lasts for a full cropping season, meeting at least 12 times with an approximate length of four to five hours per meeting. With the purpose that participant can observe and analyse the dynamics of the rice field ecology across a full season. Each meeting consists of a set pattern of activities: agro - ecosystem field observation, analysis and presentations; special topics; and group dynamics. Agro - ecosystem analysis is the Field School's core activity, and other activities are designed to support it.



During, agro - ecosystem analysis and other activities, farmers divide into five ‘small groups’ of five participants each. This is an ideal size for small group discussions. This number allows for sufficient diversity of opinion without being so large as to discourage less vocal participants from taking an active role. After the Field School is completed twenty-five farmers constitutes a neighbourhood support group for IPM of a reasonable size within the context of a village.

Selection of participants takes place at a meeting led by the IPM Field School facilitator with the members of the Farmers Group from which participants will be drawn. At this meeting the Field School process is explained. The facilitator also explains to prospective participants that they will be expected to attend every week for the duration of the season. Prospective participants are given an opportunity to either agree (the ‘learning contract’) or withdraw.

In some countries the number of meetings of the FFS has been extended to 16 meetings and the number of participants has been increased to 30. When an FFS is conducted in a crop other than rice, there are necessarily changes based on the various actors in the typical agro-ecosystem of that crop (for example plant physiology, insects,

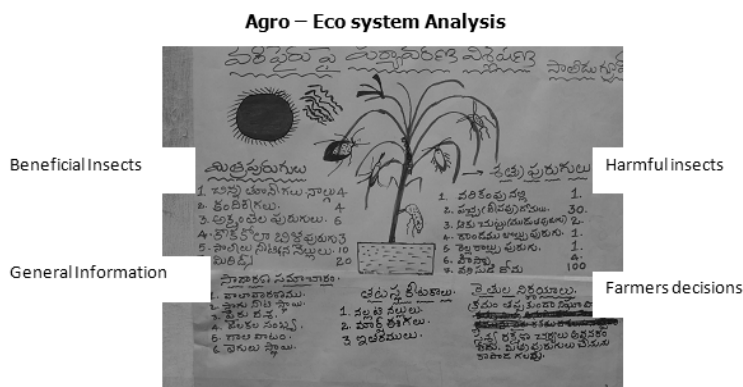
etc.). The process of any FFS should be the same; it is the content that would change as the FFS is conducted with different crops

Agro - ecosystem Analysis: The process of agro - ecosystem analysis sharpens farmers' skills in the areas of observation and decision-making and helps develop their powers of critical thinking. The process begins with small group observations of the IPM and non-IPM plots. During the observation process participants collect field data – such as the number of tillers per hill and various insects and their populations – and samples of insects and plants. These data are collected from ten rice hills. The facilitator is present throughout the observation to help participants in their observations.

Following the field observation, the farmers return to the meeting place and, using crayons, draw what they have just observed in the fields on a large piece of newsprint or poster paper. The drawings include:

- a) pests and natural enemies observed in the fields (pests on one side, natural enemies on the other);
- b) a rice plant that indicates the size and stage of plant growth, along with other important features such as the number of tillers, the colour of the plant and any visible damage; important features of the environment (the water level in the field, sunlight, shade trees, weeds, and inputs).

Agro - Eco system Analysis



All members of the small group are involved in the creation of the drawing and analysis of data. While drawing, farmers discuss and analyse the data they have collected in the field. Based on their analysis they determine a set of action decisions to be carried out in the field. A summation of these action decisions as agreed by the group is also included in the drawing.

One member of each small group then presents these findings and decisions to the larger group. After this brief presentation of results the floor is opened for questions and discussion. Large group discussions often involve the posing of alternative scenarios, for example questions such as “What would you do if...” This cycle of presentation, question and answer and discussion is repeated until all five small groups have presented their results. Agro - ecosystem drawings from previous weeks are kept on hand as a reference and as material for discussion later in the season.

10.6.1. Agro-ecosystem Activity Matrix

Activity	Critical Steps	Notes	Indicators
(Primary FFS activity Develops Good IPM Habits: -observation -analysis -decision making Farmers become IPM experts)	Observation & Drawing of Agro-ecosystem	Participants need to understand process of observation and its Purpose or objective. Participants in field observing, taking notes, collecting specimens. Purpose of drawing to summarise observation, focus of analysis.	<ol style="list-style-type: none"> Before activity participants will be informed about <ol style="list-style-type: none"> goal of activity and process to be followed in activity. All Participants need to be in the field. Process of observation includes the whole plant. Observations to be written. Specimens to be collected. Drawings, summarise observations.
	Presentation & Analysis	Results of analysis presented to large group by one member of each small group problems posed, questions asked. Purpose: to discuss field conditions & solve “what if scenarios. Objective: to improve	<ol style="list-style-type: none"> Presentations made by member of each small group. Participants ask questions of presenter. Facilitator asks questions appropriate to analysis Groups discuss field conditions & agro-ecosystem relationships.

Activity	Critical Steps	Notes	Indicators
		decision making & analytical skills based on ecosystem observation. Facilitator helps group achieve objectives by asking probing questions to help analytical process.	5. "What if" scenarios discussed. 6. Previous weeks agro-ecosystem drawings used for comparisons. 7. Field management decisions Critically examined by group. 8. Other factors in addition to economic thresholds are analysed (e.g. plant stage, natural enemies) 9. Facilitator uses leading questions to help participants analyse what was learned during activity.

The “Agro-ecosystem Activity Matrix” describes what an observer should be able to see when an agro-ecosystem analysis activity is being conducted. While this is primarily an outline, the ‘indicators’ column presents those observable processes that are fundamental to the process. Note that the role of the facilitator is to help participants learn, not to teach them.

Special Topics: Special topics support the agro - ecosystem analysis more deeply on the rice agro- ecosystem and IPM principles. Special topics also provide training in basic experimentation methods. Popular special topics include rat control, plant physiology, functions of insects and their interactions, issues surrounding pesticide use, and general field ecology.

9.6.2. Special Topics - Activity Matrix

Activity	Critical Steps	Notes	Indicators
Special Topics (focus on topics such as ecology, rats, biology, etc.)	Statement of goal	Participants must know purpose of activity and what they will learn.	1. Before activity begins participants told goal and process of activity.
	Small group process	Participants clear about what they must do and why. All materials at hand.	1. All participants active and involved in the activity. 2. No small group dominated by one person to the point that others are totally excluded.
	Presentation	Activity analysed by participants. facilitator asking leading questions so that participants know what happened during activity and why Special topics provide opportunity to learn of topics important to IPM.	1. Participants present results of their work during the activity summarising what has happened and why. 2. Leader asks leading questions to help participants examine steps in process of activity and apply learning to "real life".

Group Dynamics: The purpose of the group dynamics activity is to help participants develop an understanding of how:

- Groups work in given problematic situations
- Cohesiveness and collaboration can be developed
- Communicative action is a fundamental element in well functioning groups.

These activities generally begin with an introduction by the trainer, who sets up a problem that the group needs to solve. Many of the exercises are physical and active, while others are more on the order of 'brain teasers'. In either case, the group has some fun while sharing the experience of working to overcome a specific problem and learning about how to better help people collaborate.

9.6.3. Group Dynamics - Activity Matrix

Activity	Critical Points	Notes	Indicators of Quality
Group Dynamics (enhances teamwork & problem solving skills.	Process	Participants informed about objectives and process before activity begins. Materials for activity, if needed, are on hand before activity begins. Time allowed for activity is sufficient to achieve objective. Logistical issues do not disturb process.	1. Before activity begins participants told goal and Process of activity. 2. All participants involved/ active, no single individual dominating activity.
	Synthesis	Leader takes time to: review objective of activity; lead discussion concerning what happened during the activity; point out important issues arising during activity; helps participants draw conclusions based on their experience during the activity.	Leader: a) reviews goal and process of activity; b) helps participants identify key learning points based on activity; c) asks questions which help participants learn from the experience

The role of the facilitator is to help participants analyse what they have experienced so that they reach a greater understanding of how people tend to behave in various social situations.

Materials: Some of the materials required to support these activities include plywood sheets (as bases to draw on), large pieces of newsprint or poster paper, crayons, and large felt-tipped pens. Learning materials are learner generated. Farmers generate their own learning materials, from drawings of insects to analytical tools. These materials are always consistent with local conditions, are less expensive to develop, are controlled by the learners and can be discussed by the learners with others. Learners know the meaning of the materials because they have created the materials.

9.7. Views on IPM Field Schools

The basis for the training approach . . . is non-formal education, itself a 'learner-centred' discovery process. It seeks to empower people to solve 'living problems

actively by fostering participation, self-confidence, dialogue, joint decision making and self-determination.

. . . the ‘discovery learning’ by farmers on the basis of ‘agro-ecosystem analysis’, which uses their own field observation, is science informed. The agro-ecosystem analysis methodology was developed carefully on the basis of the latest entomological knowledge. Hence this participatory approach does not represent a violation of the ‘integrity of science’, but rather a new interactive way of deploying science. *Roling and van de Fliert in Facilitating Sustainable Agriculture (pp. 163-165)*

9.8 Training and Visit Verses Farmer Field Schools

Point	Training and Visit	Farmer Field School
Field-level extension officer’s job	Deliver pre-packaged “messages” from a research-extension linkage. Primary job is information transfer, not technical expertise, which is reserved for Specialists not at the field level.	Technical Facilitator: Every FFS trainer should have basic technical skills (at least able to grow the crop, or rear animals, etc.). Secondly, every FFS trainer should have group oriented training and management skills. These skills are typically learned in a season-long Training of Trainers where they learn what they will teach.
Experience of trainers	Variable, but most often lacking basic farming skills and experience. Field level staff given communication skills.	Master trainer with farming experience gained during Training of Trainer programmes in which each person is required to grow crops and carry out field studies so that they test what they will use in Farmer Field Schools later.

Point	Training and Visit	Farmer Field School
Information	Primarily top-down messages from distant research stations about situations presumed to be representative of farms.	Recommendations are tested against conventional practices and new information about to the site emerges. Promotes local creativity.
Contact point	Contact farmers that are supposed to train other farmers by passing on external information.	Groups of interested farmers that form on a daily basis through generating local study circles.
Time frame	Continuously, forever, on a two-week regular cycle not based on any natural phenology.	A pre-defined period. Usually on a weekly basis over a season. FFS may be longer than a season, but never less than one season integrated with the crop phenology.
Pedagogy	Training: Use of static pre-determined demonstrations and in field examples to show and tell.	Education: A focus on underlying principles that allow farmers to derive and adopt recommendations within their own dynamic their ecological, social, and economic realities.
Evaluation	At best indirect: based on measuring delivery and funds spent.	Pre- and post-testing: Community self-surveying. Identifiable indicators defined in terms of system-critical factors. Internal rates of return.
Training site	Demonstration field, training centers, home of Contact Farmer, static not revisited in time or observed in terms of any on going process.	A shared field in which the FFS uses to dynamically validate and test new management methods over the entire season (e.g. decisions during one part of the season can be verified by yield cuts)
Long term objectives	Increase food production, etc. "Farmer's attitudes, lack of knowledge, and practices are an object/constraint of a development process"	Nurture groups that will continue to address agricultural and community problems on their own and with technical backstopping. "Farmers as the subject of development"
Research	Primary source of information is research stations assumed to develop representative models that are widely applicable.	A process and consequence of local testing and within-community/ecosystem learning.



9.9. Farm School

There are numerous agricultural 'bright spots' covering crops, fruit trees, farm animals and fisheries in the country. These bright spots are the results of the work of innovative and hard working farm women and men. Farm schools are established in the fields of such innovative farmers or farmer achievers who are actually enhancing productivity and profitability in their farms through scientific and sustainable agriculture. Farm School is powerful instrument for participatory research and knowledge management. It is an alternative extension tool and facilitate farmer-to-farmer learning. It also reduces the widening gap between scientific know-how and farmers practices. This would facilitate development of farming situation / system specific packages.

The host achiever farmer is designated as Farmer Scientist / Farmer Professor in the respective crops / enterprises considering his area of expertise. The establishment of such Farm Schools would also add the dimension of engagement with farm families, to extension. Priority need to be given in the areas of horticulture, crop-livestock, mixed farming, organic farming, agro-forestry and aquaculture for establishing Farm Schools.

1. The key features of the Farm Schools to be promoted under the ATMA programme are given below:
 - Farm Schools would be operationalized at Block/Gram Panchayat level.
 - These would be set up in the field of outstanding farmers and awardees of nationally recognized awards for farmers. These could also be set up in a Government/ Non-Government Institution.
 - "Teachers" in the Farm Schools could be progressive farmers, extension functionaries or expert belonging to Government or Non-Government Sector.
 - One of the main activities of Farm Schools would be to operationalize Front Line Demonstrations in one or more crops and/or allied sector activities. These demonstrations would focus on Integrated Crop Management including field preparation, seed treatment, IPM, INM, etc.

- Farm Schools would provide season long technical backstopping/ training to target farmers.
 - The “students” of Farm Schools would be leaders of Commodity Interest Groups (CIGs) formed in different villages and other farmers.
 - “Students” would visit Farm Schools as per specified schedule or as may be necessary. “Teachers” may also visit students as may be necessary.
2. Knowledge and skills of ‘teachers’ would be upgraded on a continuous basis through training at district/ state/ national level institutions and exposure visits, etc.
 3. In addition to technical support through Farm Schools, knowledge and skill of “students” may also be upgraded through training at district/ state level and exposure visits, etc.
 4. “Students” would have the responsibility of providing extension support to other farmers in the respective village or neighboring villages.

Integration of Farmer Field School and Farm School

The technologies and innovations of the achiever farmers of field school may be disseminated following the same procedure of Farmer Field School. Here the facilitator or teacher would be the achiever farmer and disseminating the proper technologies in his farm.

9.10. Summing Up

In this unit we dealt with the meaning and basic concepts of Farmer Field School. The term “Farmer Fields Schools” came from the Indonesian expression *Sekolah Lapangan*. It is a form of adult education, which evolved from the concept that farmers learn optimally from field observation and experimentation. In regular sessions from planting till harvest, groups of neighboring farmers observe and discuss dynamics of the crop’s ecosystem. Simple experimentation helps farmers further improve their understanding of functional relationships. Farmer Field School was developed on Integrated Pest Management (IPM) to help farmers tailor their practices to diverse and



dynamic ecological conditions. Later, there are many other programmes besides IPM Farmer Field Schools which have succeeded to provide good educational results. We also dealt with Principles and characteristics of the Farmer Field School Approach. The Typical Rice IPM Field School is an insight to functionaries to operationalise the Farmer Field School. Learnt that we compared FFS with T&V on many parameters. Farm schools are established in the fields of innovative farmers or farmer achievers who are actually enhancing productivity and profitability in their farms through scientific and sustainable agriculture. The Farmer Field Schools and Farm Schools will be an important alternate extension tools for promoting farmer to farmer learning. These innovative extension tools need to be planned and implemented effectively to reduce the Innovation decision period and enhance the rate of adoption.

AEM-101

Introduction to Agricultural Extension Management **(4 Credits)**

Block-III

Institutional Framework for Agricultural Development

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Unit-1

Institutional Support for Agricultural Extension Programmes

Structures

- 1.0 Objectives
- 1.1. Introduction
- 1.2 Institutional Support for Agricultural Extension and Pro-active Initiatives of Extension Organizations
- 1.3 Public and Private Sectors, Cooperatives and Credit Institutions' Support for Agricultural Extension Programmes
- 1.4 NGOs for Agricultural and Rural Development
- 1.5 Democratic Decentralization through Panchayat Raj for People's Development
- 1.6 Summing Up

1.0 Objectives

After reading through this unit, you will be able to:

- understand various kinds of institutional support for agricultural extension programmes,
- know varied programmes and pro-active initiatives of extension organizations to help farmers' cause,
- know the roles of public and private sectors, cooperatives and credit institutions in agricultural and rural development,
- have better understanding about NGOs' support in empowering rural masses; and
- know the democratic decentralization process through Panchayat Raj in village development.

1.1 Introduction

To ensure agricultural development in the country which is the mainstay of the 70% of its population, several developmental efforts have been initiated and launched by the successive Governments through programmes, projects, campaign and various other educational and extension activities. Considering the vastness of the Indian State with its 28 States and 7 Union Territories with its predominant agricultural economy, the Government supported programmes and activities have not achieved the expected results. And it is pragmatically difficult to expect everything from Government endeavour. And hence, private players and other R & D and business houses have been encouraged to put their might in achieving agricultural development objectives since 1970s onwards particularly during Green Revolution period. Besides technology, sustainable agricultural development requires support from other services like input supplies, credit, market access, local government's cooperation, etc. Hence, institutional support from various public, private and non-governmental sectors is essential. The agricultural development scenario has undergone several changes after the 'green revolution'. Plurality has emerged as the characteristic feature of 21st century agricultural dynamics. This plurality is seen in a marked way in the number and types of institutions directly and indirectly influencing agricultural development. A comprehensive understanding of the institutional support for agricultural development is necessary to know the complementarity and competitiveness of these institutions so as to create conducive institutional environment for sustainable agricultural development. Profile of various institutional support systems for agricultural extension is presented in the next section.

1.2 Institutional Support for Agricultural Extension and Pro-active Initiatives of Extension Organizations

The optimal organization of an extension service and its management depends to a large extent on the tasks it has to perform and the environment in which it has to



operate. As this environment is changing rapidly, the tasks of extension organizations also have to change. Major changes include:

- 1) Demand for agricultural products is increasing rapidly in many countries because of a growing population and increasing incomes. As a result of this growth in income, the demand for animal and horticultural products is increasing more rapidly than the cereals and staples. In the past, much of the growth in production was achieved by cultivating more land and irrigating a larger proportion of it. However, with limitations on further expansion of land and irrigation for cultivation, further increase in production has to be achieved essentially by productivity enhancing technologies.
- 2) Economic liberalization opens new opportunities for farmers to sell their products in the world market, but it also renders them to risks of international competition. These developments favour the more efficient farmers who are supported by a well organized input supply, marketing, research, education and extension systems.
- 3) Many present farming practices are not sustainable. Development of more sustainable farming practices often requires collective decision-making, whereas extension in the past mainly supported individual decision-making.
- 4) It has become at least as important for extension agents to help their farmers to decide on new farming systems as to decide on new production technologies. The farmer often needs help to choose between the different options open to him rather than follow an extension recommendation. In other words, transfer of technology becomes less important than increasing the ability of the farmers to make their own choices.
- 5) Farmers obtain new information not only from the public agricultural extension services, but also from a rapidly growing range of extension service providers. Developments in information and communication technologies (ICTs) have opened up many new opportunities to obtain information and knowledge. Farmers will only turn to their extension agents for more reliable and more timely information at a lower cost than other information sources. Research and extension organizations are required in most less industrialized countries which respond more quickly to farmers' need for information and education than they did in the past. Thus,

extension organizations should themselves use all available sources of information, including their farmers' indigenous knowledge and experience.

- 6) There are strong forces towards a change in the financing of extension organizations through privatization and financial support of governments to NGOs.

As a result of these changes most extension organizations ten years from now will have to be organized in quite a different way. Only those organizations which proactively change in structure and culture will be able to survive in the emerging competitive development dynamics. Major changes are needed in the ways in which extension agents perform their tasks and relate to their farmers. The extension managers will have an important task in guiding this change process.

Specialists are required in extension organizations to ensure there is good communication between research workers and the general extension agents who have direct contact with farmers. Furthermore as women play an important role in agriculture, female extension agents often are required to help them effectively.

The optimal structure of any organization, including an extension service, will depend to a large extent on the function of that organization. Thus, the optimal structure for an extension service is different from that for a factory manufacturing a product on the mass production line.

1.3 Public-Private Sectors, Cooperatives, and Credit Institutions' Support for Agricultural Extension Programmes

Public-Private Sectors

The last two decades witnessed declining support for public extension and emergence of a wide range of extension service providers (ESPs) in the private sector all over the world. Similarly, the number and types of organizations providing extension services in India have also increased during the last two decades. In terms of number of staff and organizational reach, the public sector state Department of Agriculture (DoA) continues to dominate extension provision. Other line departments, research centers



and agricultural universities in the public sector play only a very limited role in extension. An indicative list of ESPs is presented in Table 1 and types of ESPs by their nature are presented in Table 2.

Table 1. Extension service providers in India – Nature of funding and delivery

Sl. No.	Extension Service Provider	Nature of Funding	Nature of Delivery
1.	Ministry of Agriculture, Govt. of India i. Department of Agricultural Research and Education (DARE) through Indian Council of Agricultural Research (ICAR) ii. Department of Agriculture and Cooperation (DAC) through Division of Extension & other schemes iii. Department of Animal Husbandry, Dairying and Fisheries through schemes	Public	Public (front-line)
2.	State Agricultural Universities	Public	Public (first-line)
3.	State Development Departments of Agriculture, Animal Husbandry, Horticulture, Fisheries, Sericulture, Forestry, Rural Development, etc.	Public	Public (mainstream)
4.	Krishi Vigyan Kendras	Public+Private	Public and Private
5.	MS Swaminathan Foundation	Private+Public	Public+Private
6.	Agro-Industries Corporations/Khadi and Village Industries Corporation	Public	Public
7.	Agri-business Firms	Private	Private
8.	Agri-Input Dealers	Private	Private
9.	Non Governmental Organizations and Voluntary Agencies	Private+Public	Private
10.	Farmers Associations	Private	Private
11.	Producers Cooperatives	Private+Public	Private
12.	Consultants	Private	Private

Sl. No.	Extension Service Provider	Nature of Funding	Nature of Delivery
13.	Print medium (Newspapers, Magazines, etc.)	Public+Private	Private
14.	All India Radio	Public	Public
15.	Television	Public+Private	Public+Private
16.	Banks (NABARD, Regional Rural Banks, Commercial Banks, Scheduled Banks, etc.)	Public and Private	Public and Private
17.	Internet	Private	Private
18.	Donors Agencies	Private	Private and Public

Source: Samanta and Sontakki (2005)

A large number of private agencies provide advisory and other support service to farmers engaged in agriculture and allied sectors. These include: input agencies, farmer organizations, producer cooperatives, agro-processing companies, agri-marketing firms, NGOs, agri-business house, individual consultants, consultancy firms, financial institutions, media and internet services. However, the presence of these private extension providers is generally skewed towards well-endowed regions and high value crops. Crop/commodity focused extension of private sector though very useful, is narrow in one sense as they do not engage with other related issues such as farmer organization development or those issues related to sustainability of resource use.

Table 2. Major Extension Service Providers (ESPs) in Government (Public), Cooperative, Private and Non-Government Sectors

Sectors	Major Extension Service Providers
Government (Public)	Ministry of Agriculture, GOI; ICAR (Division of Extension); ICAR Institutes, State Development Departments of Agriculture, Animal Husbandry, Horticulture, Fisheries, etc.; IFFCO
Cooperatives	NDDDB, AMUL, Milk Producers'/Dairy Cooperatives, Oilseed Growers Cooperatives, Fishermen Cooperatives, Self Help Groups, etc.



Non-governmental	Bharatiya Agro-Industries Foundation, MYRADA, Centre for Sustainable Agriculture, Deccan Development Society, Honey-bee, Shristi, MSSRF, Centre for World Solidarity, etc.
Private	ITC Ltd. (Soya-chaupals, Aqua-chaupals), Zuari Fertilizers, Monsanto, Syngenta, Mahyco, Nath Seeds, Pro-Agro, CIBA-Giegy, Cynamid, RCF, HLL, Wochardt, VetIndia, VetPharma, Hoechst, Ranabaxy, TAFE, Messey & Fergusson, Hindustan Tractors, etc.

Source: Samanta and Sontakki (2005)

Remote areas and poor producers (especially those growing low value crops and having little marketable surplus) are poorly served by both private as well as public sector extension. They rarely meet the needs of small and poor producers who need a broader kind of support to improve their livelihoods. Special efforts to target these areas and groups have to be planned by deploying public funds. Public funds also could be utilized to fund farmer organizations to help them contract services from other service providers including public sector. However, efforts should be made to strengthen the capacity of farmer organizations to prioritize, demand, contract and monitor services. Private extension is not a substitute for public extension and there is a need for significant public funding of extension in the years to come.

Cooperatives

The primary aim of all types of cooperative enterprises is to end man's exploitation - social, economic and cultural. While this stands to be the basic aim, their objectives do tend to be country / area specific, time specific and community / target population specific. The objectives of a cooperative enterprise in India are to improve the socio-economic status of its members, reduce economic disparities and build a more just society. Cooperatives are more important in smoothening agricultural extension work to achieve agricultural development objectives as it is difficult for an individual farmer to accomplish his farming goals.

Basic Purpose of Cooperatives: The objectives of the cooperative enterprises have always to be consistent with the larger social objectives. In other words, a cooperative is not like a private, joint stock company which may aim at promoting the interest of its members, irrespective of its repercussions on other sections of the society. A cooperative enterprise aims at promoting social goods even as it works to protect and promote the interests of its members.

It also needs to be stressed here that the basic purpose of cooperation is really education – to bring about a change in the attitude and values of people. A cooperative enterprise is essentially an instrument to achieve this aim of cooperation. To that extent, one objective of all cooperative enterprises is education – to prepare its members for a just, exploitation – free society.

At the Macro level, the basic challenge before all cooperatives is basically that of their relevance to the society at large and the emerging economic and political environment. It is the challenge of continuous search of finding better means to meet the needs of the community. At the Micro level, major challenges before the three types of cooperatives are a) Producer Cooperatives : Increasing agricultural productivity and production; b) Consumer Cooperatives : Ensuring delivery of basic needs to the community and higher value for the money; c) Workers Cooperatives : Raising the income generating potential of workers and reducing unemployment.

Basically India is an agricultural economy. Nothing can better enhance the effectiveness of cooperatives and nothing can bring more prosperity to the society than an increase in agricultural productivity and production. It is now widely believed that increasing agricultural production and productivity would require effective delivery systems that assure the farmers, help them to switch over to the modern technology, relieve them of post-harvest anxieties and fetch them an assured high price. Now, cooperatives are ideally suited to perform all these tasks. Wherever the leadership has taken up these tasks effectively, the results have been spectacular. Thus, this is the first



major challenge before the cooperative enterprises, especially those engaged in agricultural and allied fields.

Financial/Credit Institutions

As it is widely accepted that there are 4 basic needs of the farmers for its farming endeavour, and if the year met, his objectives of life are accomplished. The 4 basic needs are :

- awareness of improved technology and its management practices,
- advice on appropriate farm planning and resource management,
- practical farming skills for use of new technologies, production inputs and credit, and
- post-harvest and marketing services.

Therefore, not a single need can be separated from these 4 basic needs of the farmer to make him self-satisfied in his endeavour. And credit is the most important to carry out his mission in producing more and marketing more to earn more profit for his family's upliftment socially and economically. And here comes the role of financial or credit institutions to support farmers to fulfill his credit needs.

At present, there are a number of public and private institutions who provide credit to the farmers for the purpose. They are : Nationalized Banks, Gramin Banks, Farmers' Cooperatives, State Cooperative Banks, NABARD and alike. These institutes have a special programme in providing farm production credit to the farmers with special interest rates in comparison to other credit to clients specially to boost agricultural production and its related activities. Since 1979, when a few selected banks were nationalized, these special credit for the farm production have been introduced and Gramin banks have also been set up to smoothen and strengthen these activities. And there is no doubt that this credit support have helped farmers to utilize better inputs like fertilizers, plant protection chemicals, seeds and alike to realize their dream

in producing more and get more profit. However, this system has mostly helped the large and rich farmers than small, medium and marginal farmers.

1.4 NGOs for Agricultural and Rural Development

Non-Governmental Organizations (NGOs)

The Non-Government Organizations (NGOs) and Voluntary Organizations have a history of participation in agriculture and rural development in India. They are being increasingly involved in such activities. The characteristics of NGOs which favour such involvement are :

1. Most NGOs have been established with the basic objective of serving the rural community. They survive in the field through their own efficiency and commitment, and not because of any dictating power from above.
2. Most NGOs are small organizations that concentrate on a particular area and have a strong network at the grass roots level. They are able to understand local problems and the methods required to solve them.
3. NGOs may be able to persuade farmers to adopt new techniques because they maintain close ties with them.
4. NGOs can modify general plans and models to suit local needs. The State Village Level Workers and Agricultural Extension Officers, cannot modify the designs received from their higher authorities. As a result these, workers may be forced to promote irrelevant models that are not accepted by the farmers.
5. NGOs generally are strong in programme management and hence able to organize and monitor the programme more efficiently.
6. NGOs are primarily service organizations; they are generally hard working and efficient in comparison to Government extension agencies when it comes to promoting development programmes in rural areas.

The NGOs have a less bureaucratic and more participatory method of working. They are more competent at facilitating farmers to learn from their own experience and



from each other. They are more likely to discover new development methodologies. Further, NGOs are very helpful in disaster management and meeting crises situations.

Extension Approach of NGOs and Voluntary Organizations

The method of working of each of the NGOs and voluntary organizations is unique, and is largely determined by its objectives and resources. An analysis of Ramakrishna Mission's rural development programmes over a period of five decades from 1943 to 1993 (Ramakrishna Mission Lokasikhsha Parishad, 1993), may be an eye-opener in this regard not only for the extension agencies, but also for other voluntary and non-Government organizations as well.

Goals of development: The overall goal of development as adopted by different branch centers of the Mission, as a rule, had been the development of 'potential divinity' in human beings. While operationalizing the concept, development actually connotes greater income generation through application of improved techniques in methods of production. The broad goals thus boiled down to poverty alleviation through income generation.

Entry point: One of the most important components of development strategy is the selection of entry point through which an outside agency enters in a community to do development work. Entry point should normally be based on major areas of concern of the community so that acceptance is instant and encouraging. Entry programmes developed in consultation with the community itself could establish a firmer rapport with the community.

Infrastructure: There are three types of infrastructures relied upon by different branch centers to implement their programmes. The first was direct contact of the Monks with the people with the goodwill of Mission behind them. The second was creation of band of dedicated youth through training and motivation who are deputed to their own communities to carry the message of the implementing centre.

The third type was building up of local youth leadership through community organization by establishing and reactivating local youth clubs and then binding them into operational structures with full autonomy in decision making. Training comes after those groups were identified and developed through the process of community organization.

It was thought that it could be better if self-sustaining organizations with full decision making power at each level could be developed, because such type of organizations could only sustain rural development.

Method of work: The method of work was based principally on the planks of spiritual development, triggering off socio-economic development. Among the three bigger Mission centers, Palli Mongal and Divyayan believed that trained youths could successfully carry their messages on rural development. As such their methods of work were based on selection of qualified workers, training them in performing the jobs and post them at a given community with the hope that the persons would successfully transform the goals of the Mission centers into practical activities at the community level. They also promoted new organizations at the community level where these trained personnel formed the nuclei. To state briefly, the method of work adopted was based on performances of individuals trained and motivated by the Mission.

On the other hand, the Lokasiksha Parishad developed its activities on the platform of community organizations, crystallized into clusters which did not depend on individuals. In this case, the programme succeeds if the cluster works, which is again dependant on how much pressure the constituent youth clubs put on those clusters to keep it on the right track.

Sustainability: The merit of any programme, specially in the field of rural development, is tested in terms of its capacity to sustain after the initial thrust by the outside agency is withdrawn. Programmes undertaken by Lokasiksha Parisahd relied on local entrepreneurship and marketing, to make them viable. In this case, only



entrepreneurship development training is given, but choice of enterprise is left to the individual concerned who is to look for own finance and other facilities including marketing.

1.5. Democratic Decentralization through Panchayat Raj for People's Development

Panchayat Raj

The people's participation in agricultural development programmes is a must, as no development for people can take place without their active involvement and cooperation. Hence, every development initiative by Government and private organizations have been the joint effort of both sponsorer and beneficiary. And it has been well recognized that the success of agricultural development programmes largely depend on the participation of the people. And to ensure people's participation, democratic decentralization has been the core principle of the Government and in 1957 Balwanaray G. Mehta Committee appointed by the Government of India suggested launching of Panchayat Raj institutions in the line of democratic decentralization to help villages to ensure their own development process by utilizing the Government funds taking into account their priorities as dreamt by the Father of Nation, Mahatma Gandhi.

Democratic decentralization in the present context means, that the Government which has derived its authority from the people distributes it to some extent to the people for decision and action at the local level. This is popularly known as Panchayat Raj in India. It was thought that Panchayat Raj would emerge as a system of democratic local self-Government, discharging developmental, municipal and, ultimately, regulatory functions. The policy of democratic decentralization envisages –

- i. the establishment of elected and organically linked democratic bodies at the village, block and district levels;
- ii. the entrustment of all planning and developmental activities to these bodies; and
- iii. transfer of adequate resources to these bodies to enable them to discharge duties.

Mehta (1978), in the Report of the Committee of Panchayati Raj Institutions (PRIs) identified three phases of Panchayati Raj in India – the phase of ascendancy (1959-64); the phase of stagnation (1965-69); and the phase of decline (1969-77).

The Committee found that stagnation and decline in the Panchayati Raj system during the period were mainly due to –

- i. keeping most of the rural development programmes and activities outside the purview of the PRIs, making them inactive;
- ii. reducing the allocation of funds to the PRIs, making their resource base weak;
- iii. lack of adjustment of the bureaucratic administration with the Panchayati Raj system;
- iv. lack of political will, as evident in the absence of appropriate laws or if present, in their enforcement;
- v. postponement of elections and supersession of PRIs; and
- vi. lack of conceptual clarity about panchayati raj and its objectives.

The Committee further observed that the PRIs were dominated by economically or socially privileged sections of society, yielding no benefits to the weaker sections. The performance of PRIs had been vitiated by political factionalism, rendering developmental activities either twisted or diluted. Corruption, inefficiency, scant regard for procedures, political interference in day-to-day administration, parochial loyalties, motivated actions, power concentration instead of service consciousness – all these had seriously limited the utility of panchayati raj for the average villagers.

A revival of the panchayati raj system took place in some States of the country since 1977. The factors which contributed to their revival are –

1. Political will of the Government in sharing authority and responsibility with the panchayats.



2. Enactment of appropriate laws relating to panchayati raj system and their strict enforcement.
3. Holding panchayat elections at regular intervals.
4. Curbing the dominance of the economically and socially well-off sections of the rural society in the panchayats.
5. Pro-poor attitude of the Government and ensuring adequate representation of the backward classes in the panchayat raj bodies.
6. Involvement of the people at the grass roots level through the panchayats in planning and implementation of the development programmes in the rural areas.
7. Provision of adequate funds and facilities to the panchayats.
8. Administrative support and supervision by the Government to ensure proper functioning of the panchayats.
9. Holding regular training programmes of officials and non-officials for common understanding of the panchayati raj system.

To establish Panchayat Raj on a firm footing, the Constitution of India was amended (THE CONSTITUTION SEVENTY-THIRD AMENDMENT ACT 1992) which may be regarded as a landmark in the process of democratic decentralization.

The reorganized panchayat system is designed to ensure people's participation, including women and backward classes, for rural development and local self-Government at the grass roots level. Extension has to develop a system of working with the Panchayats to make people's participation in agriculture and rural development at the grass roots level a reality.

1.6 Summing up

Only effective extension organizations can help, support farmers' cause in providing necessary information, knowledge, skill and inputs to meet their needs in their production endeavour. Institutions like cooperatives, credit institutions, NGOs, Village Panchayats are in the forefront in helping these farmers' cause and meaningful

extension organizations must exploit and utilize their services to reach farmers effectively to satisfy their needs.

Hence, the goals of extension organizations must include the following :

1. The transfer of knowledge from research to the clients, who are generally farmers, farm women and rural youth.
2. Advising clients on the decisions they have to make, sometimes by recommending a certain decision to be taken, sometimes by helping them to acquire sufficient insight into the consequences of the alternatives from among which they can choose in order that they can make their own decision.
3. Educating. Helping clients to make a decision in such a way that they are able to make similar decisions themselves in the future.
4. Enabling clients to find their own way by helping them to clarify their goals and the possibilities which they have, together with others, to realize these goals.
5. Stimulating desirable and sustained economic developments.



Unit-2

Developmental Programmes in improving Agricultural Extension for Agriculture & Rural Development

Structures

- 2.0. Objectives
- 2.1. Introduction
- 2.2. Development Initiatives in Agriculture by Government of India after independence
- 2.3. Scientist – Extension-Farmers’ Interface and Technology Assessment and Refinement (TAR) through Institute Village Linkage Programme (IVLP)
- 2.4. Meeting Farmers’ needs holistically through Agricultural Technology Information Centres (ATIC)
- 2.5. National Agricultural Innovation Projects (NAIP) for rural livelihood security and production to consumption system research
- 2.6. Summing Up

2.0 Objectives

After going through this unit you will be able to :

- Understand the various development initiatives in agriculture taken by Government of India after independence
- Know Scientists - Extension - Farmers interface for improving farmer focused technology development through Technology Assessment and Refinement - Institute Village Linkage Programme (TAR - IVLP).
- Have detailed exposure on National Agricultural Innovation Projects (NAIP) for rural livelihood security, and
- Have details idea about Agricultural Technology Information Center (ATIC) established to meet farmers’ needs.

2.1 Introduction

The agricultural scenario all over the world has undergone rapid changes over the years, and more so since the middle of this century. The very nature of agriculture is undergoing transformation from a subsistence occupation to agri-business. India is no exception to this phenomenon. India has made great strides in agricultural production, since 1960s following the massive application of science and technology in the field of agriculture and its allied disciplines. The remarkable performance made during the Green Revolution period marked the beginning of the process of transformation from age old traditional subsistence agriculture to a modern commercial venture or enterprise. The impact of its research and development efforts is amply reflected in the accomplishment of self-sufficiency in food grain production which rose from a modest 51 million tones in 1951 to a record production of over 200 million tones in recent years. At the same time livestock and fisheries sector have also shown considerable growth, though more to be done in these sectors.

Advances in agricultural technology have contributed largely to increased production at the farm level, in turn contributing income and prosperity to the farmer, which is enough testimony to purchasing power among all the rural farming community in India has got now. It is no doubt that agriculture has been and will remain the most crucial sector in India's economy and physical development. India has been singularly fortunate enough in moving away from the clutches of the begging bowl and the hapless and helpless dependence on developed countries from basic food needs to the era of selfreliance today. This is the result definitely not by chance by sustained and meticulous planning and collaborative efforts to increase production and productivity in agriculture by its planners, administrators, leaders and also the scientists and the farmers.

The progress in Indian agriculture in the last 55 years can be measured by the development occurred in its social, economic, educational and defence sectors. Today except petroleum, India does not need to import any of the items from outside its



country, rather it exports today almost all the commodities, from food grains and plant products to finished clothes, electronic goods, computer software and automobiles. The mother earth of India perhaps has given enough of abundant resources through its natural products, which if exploited in proper perspective can meet all the demands of our 1000 plus millions of peoples food, fibre and other socio-economic needs.

India is fortunate to have several resources required for its agriculture, animal husbandry, fisheries and forestry. The climate, the land, the water and the hard working people make all the difference in production and productivity in all these sectors and India is having all those in plenty. Only needs are to channelise them in desired directions with proper perspectives, to accomplish its objectives.

2.2 Development Initiatives in Agriculture by Government of India after independence

Government Programmes in relation to Agriculture & Rural Development

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

MNREGA was launched on February 2, 2006 from Anantapur in Andhra Pradesh and initially covered 200 "poorest" districts of the country. The Act was implemented in phased manner - 130 districts were added in 2007-08. With its spread over 625 districts across the country, the flagship program of the Government has the potential to increase the purchasing power of rural poor, reduce distress migration and to create useful assets in rural India. Also, it can foster social and gender equality as 23% workers under the scheme are Scheduled Castes, 17% Scheduled Tribes and 50% women.

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is an Indian job guarantee scheme, enacted by legislation on August 25, 2005. The scheme provides a legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage of ₹120 per day in 2009 prices. If they fail to

do so the govt. has to pay the salary at their homes. The Central government outlay for scheme is ₹40,000 crore in FY 2010-1.

This act was introduced with an aim of improving the purchasing power of the rural people, primarily semi or un-skilled work to people living in rural India, whether or not they are below the poverty line. Around one-third of the stipulated work force is women. The law was initially called the **National Rural Employment Guarantee Act** (NREGA) but was renamed on 2 October 2009.

The act directs state governments to implement MGNREGA "schemes". Under the MGNREGA the Central Government meets the cost towards the payment of wage, 3/4 of material cost and some percentage of administrative cost. State Governments meet the cost of unemployment allowance, 1/4 of material cost and administrative cost of State council. Since the State Governments pay the unemployment allowance, they are heavily incentivized to offer employment to workers.

However, it is up to the State Government to decide the amount of unemployment allowance, subject to the stipulation that it not be less than 1/4 the minimum wage for the first 30 days, and not less than 1/2 the minimum wage thereafter. 100 days of employment (or unemployment allowance) per household must be provided to able and willing workers every financial year. In 2010-11, 41 million households were employed on NREGA worksites.

Provisions under NREGA

- Adult members of a rural household, willing to do unskilled manual work, are required to make registration in writing or orally to the local Gram Panchayat
- The Gram Panchayat after due verification will issue a Job Card. The Job Card will bear the photograph of all adult members of the household willing to work under NREGA and is free of cost.
- The Job Card should be issued within 15 days of application.



- A Job Card holder may submit a written application for employment to the Gram Panchayat, stating the time and duration for which work is sought. The minimum days of employment have to be at least fourteen.
- The Gram Panchayat will issue a dated receipt of the written application for employment, against which the guarantee of providing employment within 15 days operates
- Employment will be given within 15 days of application for work, if it is not then daily unemployment allowance as per the Act, has to be paid liability of payment of unemployment allowance is of the States.
- Work should ordinarily be provided within 5 km radius of the village. In case work is provided beyond 5 km, extra wages of 10% are payable to meet additional transportation and living expenses
- Wages are to be paid according to the Minimum Wages Act 1948 for agricultural labourers in the State, unless the Centre notices a wage rate which will not be less than ₹60 per day. Equal wages will be provided to both men and women.

Note: The original version of the Act was passed with Rs 155/ day as the minimum wage that needs to be paid under NREGA. However, a lot of states in India already have wage regulations with minimum wages set at more than ₹100 per day. NREGA's minimum wage has since been changed to ₹130per day.

- Wages are to be paid according to piece rate or daily rate. Disbursement of wages has to be done on weekly basis and not beyond a fortnight in any case.
- At least one-third beneficiaries shall be women who have registered and requested work under the scheme.
- Work site facilities such as crèche, drinking water, shade have to be provided
- The shelf of project for a village will be recommended by the gram sabha and approved by the zilla panchayat.
- At least 50% of works will be allotted to Gram Panchayats for execution
- Permissible works predominantly include water and soil conservation, afforestation and land development works

- A 60:40 wage and material ratio has to be maintained. No contractors and machinery is allowed
- The Central Govt. bears the 100 percent wage cost of unskilled manual labour and 75 percent of the material cost including the wages of skilled and semi skilled workers
- Social Audit has to be done by the Gram Sabha
- Grievance redressal mechanisms have to be put in place for ensuring a responsive implementation process

WATERSHED DEVELOPMENT PROGRAMME

India is an agricultural country and so agricultural activities are the backbone for the economy of our country. It is assumed that in our country the agricultural work is totally dependent on the monsoon.

Activities of man like deforestation, farming techniques, overgrazing and faulty land use lead to the destruction of plant and tree cover exposing the earth to the natural forces like heavy rains, direct sunshine and high winds. This in turn led to environmental problems such as soil erosion, floods or water scarcity. Agricultural yield is lowered and this resulted in decline in income levels of people resulting in poverty.

In comparison to flood, drought creates many serious troubles such as unbalanced ecology, lack of moisture in soil, lack of water for drinking and irrigation etc. Many programmes have been introduced in the last three decades such as CADP, DPAP and DDP etc for improving the surface and ground water resources in our country.

It is evident from the results of these programmes that they could not have the long term effect on the affected areas. In the present times the management of land, water and forest, has become a challenge in the rural areas. The opinion of agricultural scientists is that without balanced development of soil, land, water and forest, it is impossible to have balanced ecosystem, so there is need for proper and integrated management.



Hence considering the importance of issue, the government formed Shree Hanumant Rai Committee to evolve strategies for overall socio economic development of resource poor through proper management of land, water and forest. Consequently, the concept of watershed was evolved and according to the recommendations of this committee, a special integrative programme called as WSDP was initiated. Watershed development involves not only regeneration of environment but also management of needs of human beings according to availability of resources locally, leading to improved standards of living. (Jitendra Chauhan, 2006).

- It can be defined as the drainage basin or catchment area of a particular stream or river (Source: Watershed Development Fund)
- A watershed is a geo hydrological unit which drains into a common point by a system of streams (Mondale and Ray, 2009).
- The watershed approach is a project based Ridge to valley approach for in-situ soil and water Conservation

Watershed Area: It refers to the area from where (river or stream) water to a particular drainage system, comes from. The area may range from few hectares to several thousands of hectares

It is a land area that captures rainfall and conveys the overland flow and runoff to an outlet in the main flow channel. The size of the watershed may vary from a few square meters to thousands of square kilometers. The size becomes important, depending upon the objective of working with the watershed. For example, for large irrigation projects, watersheds of thousands of square kilometers size may be considered. On the other hand, for a small storage structure in farm (farm pond), only a few hectares of land is considered. Watershed is also affected by afforestation, grassland development, cultivation etc The board objectives of WSDP were the promotion of the overall economic development and improvement of the socio-economic conditions of the resource poor sections of people inhabiting the programme areas. The Drought Prone Area Programme (DPAP) and the Desert Development Programme (DDP) were

brought into the Watershed mode in 1987. The Integrated Wasteland Development Programme (IWDP) launched in 1989 under the National Wasteland Development Board also aimed at the development of wasteland on watershed basis. All these programmes were brought under the Guidelines for Watershed Development with effect from 1 April, 1995. Other major programmes now being implemented through this approach are the National Watershed Development Project in Rainfed Areas (NWDPA) and the Watershed Development in Shifting Cultivation Areas (WDSCA) of the Ministry of Agriculture. (Mondale and Ray, 2009).

Components of Watershed Development

1. Human Resource Development
2. Soil and Land Management
3. Water management
4. Afforestation
5. Pasture Development
6. Agricultural development
7. Live stock Management
8. Rural Energy Management.

Objectives:

1. Developing wastelands/degraded lands, drought-prone and desert areas on watershed basis, keeping in view the land capability, site-conditions and local needs.
2. Promoting the overall economic development and improving the socio-economic condition of the resource poor and disadvantaged sections inhabiting the programme areas.
3. Mitigating the adverse effects of extreme climatic conditions such as drought and desertification on crops, human and livestock population for their overall improvement.



4. Restoring ecological balance by harnessing, conserving and developing natural resources i.e. land, water and vegetative cover.
5. Encouraging village community for:
 - a. Sustained community action for the operation and maintenance of assets created.
 - b. Simple, easy and affordable technological solutions.
6. Employment and development of human and other economic resources of the villages (Mondale and Ray, 2009).

Finances- The sphere of one “Water Shed Development Project” is considered to be 500 hectare land and per project Rs. 20 lakh have been allotted for the expenses.

Criteria for selection of watershed

1. Each small contiguous watershed with an approximate total area of 500 ha may be taken up for development.
2. In case a watershed falls in two villages, it should be divided into two sub-watershed areas confined to the designated villages. Care should be taken to treat both the subwatershed areas simultaneously.
3. Watershed which has acute shortage of drinking water should be selected.
4. Watershed having large population of Scheduled Castes/Scheduled Tribes dependent on it is to be considered.
5. Watershed that has a preponderance of non-forest wasteland/degraded land should be nsidered for sanction.
6. Watershed where actual wages are significantly lower than the minimum wages.
7. Watershed which is contiguous to another watershed that has already been developed/treated.
8. Watershed where people’s participation is assured through raw materials, cash, contributions on labour etc. for its development as well as for the operation and maintenance of the assets reated. (Mondale and Ray, 2009).

Operational setup

Mondale and Ray, 2009 suggested the following operational setup for a watershed

A. State Watershed Development Committee (SWDC)

State Level Monitoring committee set up by SWDC shall review and evaluate the progress of the programme twice in a year.

B. District Watershed Development Committee (DWDC)

To ensure coordination at district level, DWDC will advise and assist Zilla Parishad/DRDA on matters relating to the programme.

C. Role of Panchayati Raj Institutions (PRIs)

The Zilla Parishads and other tiers of PRIs shall have important role to play in watershed development programme. At village level, gram panchayat shall be fully involved in the implementation of the programme.

D. Project Implementation Agency (PIA)

The project at field level shall be implemented under the overall supervision and guidance of PIA.

E. Watershed Development Team (WDT)

Each PIA shall carry out its functions through a multidisciplinary team designated as the Watershed Development Team (WDT). Each WDT may handle 10-12 watershed development projects and may have at least four members one each from the disciplines of forestry/plant science, animal science, civil/agricultural engineering and social science.

F. Self Help Group (SHG)

The PIA shall constitute SHGs in the watershed areas with the help of WDT.



G. User Group (UG)

The PIA shall also constitute User Groups (UGs) in the watershed area with the help of WDT.

H. Watershed Association (WA)

Where a watershed is conterminous with a gram panchayat or its area is confined within the boundaries of a village panchayat, the gram sabha of the panchayat concerned will be designated as the Watershed Association

I. Watershed Committee (WC)

Subject to the overall supervision and control of the Watershed Association, a Watershed Committee shall carry out the day-to-day activities of the Watershed Development Project. The WC may consist of 10-12 members who will be nominated by the WA from amongst the UGs (4-5), SHG (3-4) and a member from WDT.

Implementation

The selection of Water Shed, organization and implementation will be based upon public participation. In this project, the role of Gram Sabha and Panchayat is very important. For the implementation of this project, a period of 4 years has been fixed. (Jitendra Chauhan, 2006). The responsibility of selection of the implementation agency has been given to district Panchayat/District Rural Development Authority (DRDA). For the implementation of the project, one Watershed Development Team (W.D.T.) will be formed. During the four years, this team will popularize the programme and will do extensive surveys of the resources of the area. It will cooperate or guide those works such as Watershed Association, Watershed Committee, Demonstration Group, Self Assistance group and the organization of volunteer group etc. The Water Shed Committee will record the day-to-day activities in which there will be 10 to 12 authorities. One proposed member by the Watershed Development Team will also be the member of this committee. For completing the work of Watershed Project in a year,

the fixed amount will be paid on the basis of work-progress of the project. Brief description of release of funds is as follows:

First year - 25%;Second year - 40%;Third - 25% and Fourth year - 10%

During the period of implementation of the programme, WDT and Self Help Group will deposit 10% and 5% of budget respectively either in the form of cash or labour works which, in the later years, will be spent on the maintenance. There is one arrangement that property less members of Self Assistance Group will be paid an amount of rupees ten thousand for more work and this mount would be taken back in the future.

Target beneficiaries

Population below poverty line (BPL) particularly the marginalized groups like marginal farmers, landless labourers, specially the women are the target beneficiaries. (Mondale and Ray, 2009).

Manner of execution

Under the Watershed Development Programme, watershed is taken up for a period of five years. There are basically four stages for execution of Watershed Development Projects viz.

Stage I : Preparation of Watershed Community.

Stage II : Project formulation by the watershed committee through different community organizations set up for the purpose.

Stage III : Project implementation by the watershed committee through project level community organization.



Stage IV : Withdrawal of PIA and external agencies from the project so that the watershed community could be self-reliance

The items that can be included in Watershed Development Plan are:

- i. Land development including in situ soil and moisture conservation measures.
- ii. Afforestation including agro-forestry, horticulture and plantation crops etc.
- iii. Drainage line treatment - combination of both vegetative and engineering structures.
- iv. Development of small water harvesting structures.
- v. Renovation and augmentation of water resources.
- vi. Pasture development.
- vii. Repair, restoration and up gradation of existing common property assets.
- viii. Demonstration for popularizing new crops/varieties or innovative management practices.
- ix. Promotion and propagation of soil-conservation measures. (Mondale and Ray, 2009).

15.3 Rashtriya Krishi Vikas Yojana (RKVY)

Economic reforms initiated since 1991 have put the Indian economy on a higher growth trajectory. Annual growth rate in the total Gross Domestic Product (GDP) has accelerated from below 6 percent during the initial years of reforms to more than 8 per cent in recent years. The Planning commission in its approach paper to Eleventh Five-Year-Plan has stated that 9 per cent growth rate in GDP would be feasible during the Eleventh Plan period. However, Agriculture that accounted for more than 30 per cent of total GDP at the beginning of reforms failed to maintain its pre-reform growth. On the contrary, it witnessed a sharp deceleration in growth after the mid-1990s. This happened despite the fact that agricultural productivity in most of the states was quite low as it were, and the potential for the growth of agriculture was high.

The GDP of agriculture increased annually at more than 3 percent during the 1980s. Since the Ninth Five-Year-Plan(1996 to 2001-02), India has been targeting a growth rate of more than 4 percent in agriculture, but the actual achievement has been much below the target. More than 50 percent of the workforce of the country still depends upon agriculture for it's livelihood. Slow growth in Agriculture and allied sectors can lead to acute stress in the economy because the population dependent upon this sector is still very large. A major cause behind the slow growth in agriculture is the consistent decrease in investments in the sector by the state governments. While public and private investments are increasing manifold in sectors such as infrastructure, similar investments are forthcoming in Agriculture and allied sectors, leading to distress in the community of farmers, especially that of the small land marginal segment. Hence the need for incentivising states that increase their investments in the Agriculture and allied sectors has been felt.

Concerned by the slow growth in the Agriculture and allied sectors, the National development Council (NDC), in its meeting held on 29th May, 2007 resolved that a special Additional Central Assistance Scheme (RKVY) be launched. The NDC resolved that agricultural development strategies must be reoriented to meet the needs of farmers and called upon the Central and State governments to evolve a strategy to rejuvenate agriculture. The NDC reaffirmed its commitment to achieve 4 percent annual growth in the agricultural sector during the 11th plan.

Basic Features of RKVY

The RKVY aims at achieving 4% annual growth in the agriculture sector during the XI Plan period , by ensuring a holistic development of Agriculture and allied sectors. The main objectives of the scheme are:

1. To incentivise the states so as to increase public investment in Agriculture and allied sectors.



2. To provide flexibility and autonomy to states in the process of planning and executing Agriculture and allied sector schemes.
3. To ensure the preparation of agriculture plans for the districts and the states based on agro-climatic conditions, availability of technology and natural resources.
4. To ensure that the local needs/crops/priorities are better reflected in the agricultural plans of the states.
5. To achieve the goal of reducing the yield gaps in important crops through focused interventions.
6. To maximize returns to the farmers in Agriculture and allied sectors.
7. To bring about quantifiable changes in the production and productivity of various components of Agriculture and allied sectors by addressing them in a holistic manner.

These guidelines are applicable to all the States and Union Territories that fulfill the eligibility conditions.

The RKVY is a State Plan Scheme

1. Since the RKVY is applicable to the entire State Plan for Agriculture and allied sectors, and seeks to encourage convergence with schemes like NREGS, SGSY and BRGF, the Planning Commission and the Ministry of Agriculture will together examine the States' overall Plan proposals for Agriculture and allied sectors as part of the Annual Plan approval exercise.
2. Once a state becomes eligible for the RKVY, the quantum of assistance and the process of subsequent allocation to the state will be in accordance with the parameters and the respective weights.
3. It will be permissible for the states to initiate specific projects with definite time-lines and clear objectives for Agriculture and allied sectors excluding forestry and wild life, and plantations (i.e. Coffee, Tea and Rubber). For this purpose, the RKVY would be available to the states in two distinct streams. At least 75% of the allocated amount shall be proposed under Stream-I for specific projects. The amount under Stream-II will be available for strengthening the existing state sector schemes and filling the resource gaps.

4. A State Level Sanctioning Committee (SLSC) headed by the Chief Secretary of the state will have the authority to sanction specific projects under the Stream-I. India's representative shall participate in the SLSC meetings and the quorum shall not be complete without the presence of at least one official from the Government of India.
5. There may arise a situation when a particular state becomes ineligible to avail of the funds under the RKVY in a subsequent year due to its lowered expenditure on Agriculture and allied sectors. If this were to happen the states shall be required to commit their own resources for completing the sanctioned projects/schemes under the RKVY.
6. The Pattern of funding is 100% Central grant and the eventual goal is that the additional investments made through the RKVY scheme will lead to at least 4% growth in agriculture.

Areas of focus under RKVY

The components/activities which would be eligible for project based assistance under the Streams-I of the RKVY are elaborated below. This is an indicative list; the states may choose other components/ activities. The components for the RKVY could cover the following:

1. Integrated development of major food crops such as wheat, paddy, coarse cereals, minor millets, pulses, oilseeds.
2. Agriculture mechanization
3. Activities related to enhancement of soil health
4. Development of rainfed farming systems in and outside watershed areas, as also Integrated development of watershed areas, wastelands, river valleys
5. Support to State seed farms
6. Integrated Pest Management schemes
7. Encouraging non-farm activities
8. Strengthening of Market Infrastructure and marketing development



9. Strengthening of Infrastructure to promote Extension Services
10. Activities relating to enhancement of horticultural production and popularization of micro irrigation systems.
11. Animal husbandry and fisheries development activities
12. Special schemes for beneficiaries of land reforms
13. Undertaking concept to completion projects
14. Grant support to the State Government institutions that promote agriculture/horticulture
15. Study tours of farmers
16. Organic and bio-fertilizers
17. Innovative schemes

Operationalisation of RKVY

The State Agriculture Department shall be the nodal department for the implementation of the scheme. For administrative convenience and ease of implementation, the State governments may identify, or create an exclusive agency for implementing the scheme on the fast track. Even where such an Agency is created /designated, the entire responsibility of ensuring that the RKVY is properly implemented will be that of the Agriculture Department only. In a situation where the states notify a Nodal agency, the release of funds may be done by the Centre directly to the Agency.

National Food Security Mission (NFSM)

The growth in food grain production has stagnated during recent past while the consumption need of the growing population is increasing. To meet the growing food grain demand, the National Development Council (NDC) in its 53rd meeting held on 29th May, 2007 adopted a resolution to launch a Food Security Mission comprising rice, wheat and pulses to increase the production of rice by 10 million tons, wheat by 8 million tons and pulses by 2 million tons by the end of the Eleventh Plan (2011-12).

Accordingly, A Centrally Sponsored Scheme, 'National Food Security Mission', has been launched from August, 2007 to operationalize the above mentioned resolution.

Objectives

The major objective of this scheme is to increase production and productivity of wheat, rice and pulses on a sustainable basis so as to ensure food security of the country. The approach is to bridge the yield gap in respect of these crops through dissemination of improved technologies and farm management practices. More specifically the objectives are:

1. Increasing production of rice, wheat and pulses through area expansion and productivity enhancement in a sustainable manner in the identified districts of the country;
2. Restoring soil fertility and productivity at the individual farm level;
3. Creation of employment opportunities; and
4. Enhancing farm level economy (i.e. farm profits) to restore confidence amongst the farmers.

Strategy

To achieve the above objectives, the Mission would adopt following strategies:

1. Implementation in a mission mode through active engagement of all the stakeholders at various levels.
2. Management including micronutrients, soil amendments, IPM and resource conservation technologies along with capacity building of farmers.
3. Flow of fund would be closely monitored to ensure that interventions reach the target beneficiaries on time.
4. Various interventions proposed would be integrated with the district plan and targets for each identified district would be fixed.
5. Constant monitoring and concurrent evaluation for assessing the impact of the interventions for a result oriented approach by the implementing agencies.



Major Components of NFSM

1. National Food Security Mission – Rice (NFSM- Rice)
2. National Food Security Mission – Rice (NFSM- Wheat)
3. National Food Security Mission – Rice (NFSM- Pulses)

Total financial implications for the NFSM will be Rs. 4882.48 crores during the XI Plan (2007- 08 – 2011-12). Beneficiary farmers will contribute 50% of cost of the activities / work to be taken up at their / individual farm holdings. Beneficiaries can choose to draw loans from the Banks, in which case subsidy amount prescribed for a particular component for which the loan availed will be released to the Banks. The implementation of the NFSM would result in increasing the production of rice by 10 million tones, wheat by 8 million tones and pulses by 2 million tones by 2011 -12. It would also create additional employment opportunities.

States covered under NFSM

Total 136 districts of 14 states (AP, Assam, Bihar, Chattisgarh, Gujarat, Jharkhand, Karnataka, Kerala, MP, Maharastra, Orissa, Tamilnadu, U.P. and West Bangal) will be covered under NFSM – Rice. Total 141 districts of 9 states (Punjab, Haryana, UP, Bihar, Rajasthan, MP, Gujarat, Maharastra and West Bengal) will be covered under NFSM – Wheat. Total 171 districts of 14 states (AP, Bihar, Chattisgarh, Gujarat, Karnataka, MP, Maharastra, Orissa, Rajasthan , Tamilnadu, Punjab, Haryana, UP and West Bengal) will be covered under NFSM – Pulses. Twenty million hectares of rice, 13 million hectares of wheat and 4.5 million hectares of pulses are included in these districts that roughly constitute 50% of cropped area for wheat and rice. For pulses, an additional 20% cropped area would be created. Panchayati Raj institutions will be actively involved in selection of beneficiary and identification of priority areas for the implementation of Mission interventions; and implementation of local initiatives in the identified districts.

INDIRA AWAS YOJANA (IAY)

Indira Awaas Yojana is a Government of India social welfare programme to provide housing for the rural poor in India. The differentiation is made between rural poor and urban poor. Separate set of schemes operate for the urban poor (like the Basic Services for Urban Poor). It is one of the major flagship programmes of the Rural Development Ministry to construct houses for BPL population in the villages. Under the scheme, financial assistance worth Rs. 45000/- in plain areas and Rs. 48500/- in difficult areas (high land area) is provided for construction of houses. The houses are allotted in the name of the woman or jointly between husband and wife. The construction of the houses is the sole responsibility of the beneficiary and engagement of contractors is strictly prohibited. Sanitary latrine and smokeless chullah are required to be constructed along with each IAY house for which additional financial assistance is provided from Total Sanitation Campaign and Rajiv Gandhi Grameen Vidyutikaran Yojana respectively. This scheme, operating since 1985, provides subsidies and cash-assistance to people in villages for constructing their houses, themselves

Background:

Started in 1985 as part of the Rural Landless Employment Guarantee Programme (RLEGP), Indira Awaas Yojana (IAY) was subsumed in Jawahar rojgar Yojana (JRY) in 1989 and has been operating as an independent scheme since 1996. From 1995-96 the scheme has been further extended to widows or next-of-kin of defence personnel killed in action, ex-servicemen and retired members of the paramilitary forces who wish to live in rural areas as long as they meet basic eligibility criteria.

Given that India has been historically a populous and poor country, the need of proper housing for the refugees and villagers has been a focus of Government's welfare schemes since the time of India's independence.^[2] As a result various welfare schemes like House Sites cum Construction Assistance Scheme have been ongoing since the 1950s. However, it was only in the 1983 that a focussed fund for creation of housing for scheduled castes (SCs), scheduled tribes



(STs) and freed bonded labour was set up under Rural Landless Employment Guarantee Programme (RLEGP). This gave birth to IAY in the fiscal year 1985-86.

Purpose

The broad purpose of the scheme is to provide financial assistance to some of the weakest sections of society for them to upgrade or construct a house of respectable quality for their personal living. The vision of the government is to replace all temporary (*kutchcha*) houses from Indian villages by 2017^l

Eligibility criteria:

Scheduled Castes/Scheduled Tribes, freed bonded labourers, minorities and non-SC/ST rural households in the BPL category, widows and next-of-kin to defence personnel/paramilitary forces killed in action (irrespective of their income criteria), ex-servicemen and retired members of paramilitary forces residing in rural areas^[2] form the primary target group of eligible candidates for the IAY Scheme

Implementation

IAY is an allocation based, centrally sponsored scheme funded on a cost sharing basis between the Central Government and the State Government in the 75%:25% ratio, except in case of North-eastern states and Union Territories (UTs). For NE states the central government funds 90% and 100% for the UTs.

The funds are allocated to the states based on 75% weightage of rural housing shortage and 25% weightage of poverty ratio. The housing shortage is as per the official published figures of Registrar General of India based on the 2001 Census.

Current Provisions

As per the Budget 2011, the total funds allocated for IAY have been set at ₹10,000 crore for construction of houses for BPL families with special focus on the Left Wing Extremist (LWE) districts.

Impact:

Since 1985, 25.2 million houses have been constructed under the scheme. Under the Bharat Nirman Phase 1 project, 6 million houses were targeted and 7.1 million actually constructed from 2005-06 to 2008-09. Additional, 12 million houses are planned to be constructed or renovated under the Bharat Nirman Phase 2.

INTEGRATED TRIBAL DEVELOPMENT AGENCY (ITDA)

A Special Programme for the development of selected tribal areas was initiated in 1970 -71. This is called Tribal Areas Development Programme (TADP). Under this programme six pilot tribal development projects were sanctioned - one in Andhra Pradesh (Srikakulam), one in Bihar (Chaibasa), two in Madhya Pradesh (Dantewara and Konta) and two in Orissa (Gunupur and Baliguda) as a Central sector scheme. Two more programme were sanctioned as part of the programme during the Fifth Plan. Each of the project was implemented through a society called Tribal Development Agency. A detailed and comprehensive review of the tribal peoples' problem was taken up on the eve of the Fifth Five Year Plan period and instruments of Tribal Sub Plan (TSP) were developed. TSP was implemented from 1974-75, the first year of the Fifth Plan. The Tribal sub plan areas were divided into 180 Integrated Tribal Development Projects for operational purpose. Since ITDP is operated as Agency model under the Registration of Societies Act, 1860 and the ITDPs is also known as ITD Agency (ITDA).

Objectives

The main objective of ITDA/ITDP is socio-economic development of tribal communities through income generating schemes allied with Infrastructure Development programmes and protection of the tribal communities against exploitation.

The long term objectives of Tribal Sub-Plan are:

1. to narrow the gap between the levels of development of tribal and other areas; and
2. to improve the quality of life of the tribal communities.



Salient Features

1. Recognizes that there is no uniform solution to the variety of problems facing tribal regions and tribal communities; therefore, accept the uniqueness and formulate policies, programmes and schemes to suit each individual situation and especially for vulnerable sections like Primitive Tribal Groups (POTGs), bonded labourers, shifting cultivators, forest villagers, displaced person, etc.
2. Priority was given to agriculture and allied sectors
3. Infrastructure like roads and rural electrification was lined with the economic development
4. Evolve appropriate frame for development with emphasis on tribal people at the national and State level through Sub-Plan exercise,
5. Accord highest priority to protective measures for elimination of exploitation of tribal people
6. Restructure the administrative and institutional set up to suit the local needs and aspirations
7. Supplement State efforts substantially by the Union Government through Special Central Assistance (SCA)
8. The ITDA project areas are generally contiguous areas of the size of a Tehsil or Block or more in which the ST population is 50% or more of the total. Due to the demographic profile of the tribal people in these regions, however, the ITDPs in Assam, Karnataka, Tamilnadu and West Bengal may be smaller or not contiguous.
9. The ITDPs/ ITDAs are headed by Project Officers though they may be designated as Project Administrators or Project Directors.

DEVELOPMENT OF WOMEN AND CHILDREN IN RURAL AREAS (DWCRA)

DWCRA was launched in 1982-83 as pilot project in 50 districts chosen on the criteria of high infant mortality rate and low female literacy. There has been a phased expansion since then and in 1989-90, DWCRA was being implemented in 106 districts.

Objective

The basic objective of DWCRA is to provide rural women with productive income-generating assets and credit and enhance their skills. It seeks support to provide an effective organizational support structure so that the women can receive assistance in the production of goods and services more effectively.

Salient Feature

1. The target group of DWCRA was the families which had an annual income of less than Rs. 4,800/-
2. In DWCRA, instead of families, group of beneficiaries receives assistance.
3. The scheme promotes the formation of group, each consisting of 15 to 20 women; it was expected that the women will come together for activities which were mutually beneficial.
4. The financial assistance which was available for a group was follows-
5. Rs. 15,000 in the form of a one time grant, contributed in equal measure by the Govt. of India, State Government and UNICEF, which was used as -
6. Working capital to procure raw materials, and for marketing purposes.
7. Honorarium to group organizer which was not to exceed Rs. 50 per month for a period of one year
8. Infrastructural support for income generating activities.
9. Childcare facilities.
10. Travelling allowance at the rate of Rs. 2,000/- per year for one year for the group organizers.
11. DWCRA also included supportive services like mother and child care, adult education, immunization etc. For these purpose, coordination is maintained with various other departments such as Education, Health and Family Welfare and Women and Child Development.
12. Trainings were provided to the selected beneficiaries of DWCRA for taking up economic activities.



Achievements

1. In some states like West-Bengal, DWCRA had been fairly successful in aiding women to produce products of good quality.
2. In Punjab, it has been successful in providing markets for the products.
3. Groups were formed by poor women to get assistance through DWCRA.

RASHTRIYA MAHILAKOSH (RMK)

It has been felt for sometime in India that the credit needs of poor women, particularly in the unorganized sector, have not been adequately addressed by the formal financial institutions in the country. The vast gap between demand for and supply of credit to this sector established the need for a National Credit Fund for Women or the Rashtriya Mahila Kosh(RMK). It was **setup** in March, 1993 as an independent registered society by the Department of Women and Child Development in Government of India's Ministry of Human Resource Development with an initial corpus of Rs. 3,10,000,000/-. The Kosh is established not to replace the banking sector but to fill the gap between what the banking sector offers and what the poor need.

Objectives

1. To promote or undertake activities for the promotion of or to provide credit as an instrument of socio-economic change and development through the provision of a package of financial and social development services for the development of women.
2. To promote and support schemes for improvement of facilities for credit for women.
3. for sustenance of their existing employment
4. for generation of further employment
5. for asset creation
6. for asset redemption and
7. for tiding over consumption , social and contingent needs

8. To demonstrate and replicate participatory approaches in the organization of women's groups for effective utilization of credit resources leading to self-reliance.
9. To promote and support experiments in the voluntary and formal sector using innovative methodologies to reach poor women with credit and other social services.
10. To sensitize existing government delivery mechanisms and increase the visibility of poor women as a vital and viable clientele with the conventional institutions.
11. To promote research, study, documentation and analysis, including provision of fellowships and scholarships, credit and its management and successful experiences at various levels in order to promote replication and dissemination of successful credit extension and management methodologies.
12. To promote the federation and net working of women's organizations for shaping and exchange of experience and information and to develop skills in response management and social mobilization.
13. To promote and support the expansion of entrepreneurship skills among women.
14. To cooperate with and secure the cooperation of the Central Government, State Governments and Union Territory Administration, credit institutions, industrial and commercial organizations and non-governmental, voluntary and other organizations and bodies in promoting the objects of the Kosh.
15. To accept subscriptions, grants, contributions, donations, loans, guarantees, gifts, bequests etc. on such terms and obligations not inconsistent with the aims and objects of the Kosh.
16. To do all such lawful acts & things as may be necessary or conducive for furthering the objects of the Kosh.

Salient Feature

1. RMK has three main roles:
2. **Wholesaling Role:** It acts as a wholesaling apex organization for channelising funds from government and donors to retailing intermediate microfinance organizations (IMOs).



3. **Market Development Role:** It develops the supply side of the micro finance market by offering institution building support to new and existing – but-inexperienced IMOs by structures of incentives, transfers of technology, training of staff and other non-financial services.
4. **Advocacy Role:** RMK acts as an advocate or agent for influencing development and micro-finance policy and creating a more enabling policy and legal environment for spread of micro–finance activities in India. Being a creation and a representative of the government, RMK has a particular advantage in this area.
5. There shall be no discrimination on the ground of religion, community, caste or class, creed or race in carrying out the aims and objects of the Kosh.
6. All the incomes, earnings, movable and immovable properties of the Kosh shall be solely utilized and applied towards the promotion of its aims and objects only.
7. The Kosh will seek to enable women to achieve economic independence.
8. While provision of credit to cover composite needs is essential, such credit will be linked mainly to production and economic activity.
9. RMK creates an environment to facilitate and support further innovation and experimentation for designing suitable delivery mechanisms to reach poor women.
10. Education of credit management will be integrated with the provision of credit, along with literacy and skill training for individual women, leadership training among groups for self management, etc.
11. Accessibility of credit to poor women will be improved in terms of physical distance, simplification of procedures, flexibility of measures for loans and recovery and other measures conducive to increase utilization etc.
12. Provision of adequate, timely, regular flexible credit inputs matched to the individual needs of women allowing for the seasonality and diversity of poor women’s work and occupations.
13. Promote and support grassroots level societies and organizations.

14. Establish a mechanism for dissemination of information and experience among agencies in the Government and non-government sectors in the area of credit for poor women.
15. To mobilize resources at several level from governments public and private donors and from other developmental agencies both governmental and non-governmental.
16. Motivate voluntary organizations.
17. To coordinate with other credit and development agencies/ connected with the wellbeing of women.
18. Top grant monetary and other assistance including loans/guarantees to banks/ persons/organizations and associations, etc who are engaged in the promotion and development activities for economic uplift of women.

The Government of India, since 1952, has initiated and implemented several developmental programmes to promote agriculture development through agricultural extension. The three distinct stages in the development of extension under the management of national government in this regard could be specifically mentioned. They are: Community development, Technological development, and Development with social justice. Following table elaborates the important systems of extension in each of the stages with their commonly used abbreviations and year of initiation.

Stage 1 : Community Development

1952	CDP	Community Development Programme
1953	NES	National Extension Service
1954	CDB	Community Development Block
1957		Panchayat Raj Democratic Decentralization

Stage 2 : Technological Development

1960	IADP	Intensive Agricultural District Programme
1964	IAAP	Intensive Agricultural Area Programme



1964-65	ICDP	Intensive Cattle Development Project
1966	HYVP	High Yielding Variety Programme
1979	LLP	Lab to Land Programme
1983	NAEP	National Agricultural Extension Project
1986	TMO	Technology Mission on Oilseeds
1999	TAR-IVLP	Technology Assessment and Refinement - Institute Village Linkage Programme
1999	NATP	National Agricultural Technology Programme
2000	ATIC	Agricultural Technology Information Centre
2006	NAIP	National Agricultural Innovation Project

Stage 3 : Development with Social Justice

1970-1971	SFDA	Small Farmers' Development Agency
	MFAL	Marginal Farmers' and Agricultural Labourers Programme
	DPAP	Drought Prone Areas Programme
1972-1973	PPTD	Pilot Project for Tribal Development
1974	T&V	Training and Visit Programme
1978-1979	IRDP	Integrated Rural Development Programme
1979	TRYSEM	Training of Rural Youth for Self-Employment
1980	NREP	National Rural Employment Programme
1982	DWCRA	Development of Women and Children in Rural Areas
1989	JRY	Jawahar Rojgar Yojana

Further, Indian agriculture is the mainstay of Indian economy and Indian Agriculture has been the flagship of our achievement and torch light of our success since Independence. In the early fifties when our food grain production was about 50 million tones and population was increasing at alarming rate, it was predicted that Indians will starve by 1970. This prediction went wrong but on the contrary, the post independence period witnessed an era of self sufficiency in food. The green revolution experienced in India achieving the planned target and able to have satisfactory buffer stock of food grains represent a success story for the science and technology sector in India. Our success in food front has received international attention and appreciation. In the special report of the Rock Feller Foundation, it is mentioned that “the speed with which India’s farmers and scientists gave their country an approach to abundant food supply has not been duplicated any where in the world including the sophisticated United States”. Efforts of our farmers, scientists, policy makers and politicians have made our country to achieve this excellence and proud among the community of nations.

In India, our culture, our festivals, our traditions and our trade and business activities are linked with agriculture. Many of our great leaders have stressed the need for patronizing agriculture for all round development of the country.

Mahatma Gandhi has mentioned way back in 1930s that Indian agriculture will continue to stagnate unless brain and brawn are married in the country side. His wishes and vision have been fulfilled in the form of Green Revolution. After 60 years of achieving independence, it is time for us to look back and review the progress made in agriculture. This will help us to know and understand clearly the steps of success and pitfalls so that we can keep them in our mind in our future endeavours. It is told that in the ladder of progress, going two step forward and coming one step backward is also a progress.

Success in Indian agriculture during last five decades is stupendous. The progress can be categorized into three broad areas. Firstly considerable progress has been made in developing research and developmental infrastructure. There is atleast one



agricultural university in each state and there are many agriculture concerned central institutes. Secondly, reasonably efficient input production and delivery system has been developed. Thirdly policies essential for stimulating higher production by all category of farmers have been framed.

2.3 Scientist - Extension - Farmers' Interface and Technology Assessment and Refinement (TAR) - Through Institute Village Linkage Programme (IVLP)

The Green revolution was one of the greatest success stories of the second half of the 20th century. This country from a meager production of 50 million tones of food grains in 1950 characterized by acute scarcity of food, has made a tremendous impact in achieving the self-sufficiency in food grains. However such an impact was not visible in rise in the productivity of irrigated small farms, and all rainfed farms and there is still a wide "technology application gap".

Earlier, non adoption of modern technologies by small and resource poor farmers was attributed to the inadequate support systems for small farm agriculture, such an extension services, credit, input supplies, etc. These conditions are well appreciated and recognized but they are only a part of the problem. An important reason put forth for the non-adoption of improved technology is the altitudinal constraint on the part of small farmers, such as innate conservatism, ignorance, resistance to change besides a resource crunch. This perception of the problems is largely the product of basic assumption that the technology is good and appropriate in all resource conditions and often not supported by field investigations of small farm systems. However, the main aspect which has not been duly considered earlier is whether the so called modern technologies are appropriate for farms of CDR and also for resource poor farmers of irrigated area. The field investigations conducted in the last decade world over, clearly suggest that many modern technologies are simply inappropriate for the specific conditions of small-farm production systems which are highly diverse in nature and are largely influenced both by socio-economic as well as bio-physical factors.

In view of the fact that the technology adoption by resource-poor farmers is low, the social and biological scientists are becoming aware of the existing complex farming systems and the relevant decision making by these farmers and understand the reasons for non-adoption. They have, therefore, emphasized the need for participation of farmers in technology selection management process for generation of appropriate technologies. In the FPR, a beginning is made with the knowledge, problem analysis and priorities of the farmers and farm families. In other words, this approach takes the whole farm as a system and not as an individual activity. Further, the farmers and researchers are actively involved in the technology generation process as partners. This approach encompasses an understanding of farmer's resources, their requirements, and goals in the technology generation process so that it can lead to a final adoption.

In the past the strategy followed in designing and implementing transfer technology projects has been based more on the supply of technological information than on the consideration of limitations at the farm level. The usual approach has been that any technology, which produces the best results at the experimental level, is superior, and that is what should be offered to the farmers. Failure to consider the actual circumstances under which small farms operate has seriously affected the appropriateness of these technologies. What is needed is a technology generation and transfer mechanism and a methodology that will make it possible to recognize and classify the different types of small farmers. Then, and only then, the organizational design can generate and make available to farmers an appropriate technology, which they could adopt.

A more holistic approach in terms of diagnosis of problems, identification of technological interventions based on farmers' knowledge and technology identification for various production systems is called for to generate appropriate technologies. It is in this concept a programme captioned TAR-IVLP was evolved to address the above elements to arrive at appropriate technologies. The programme got its fillip and momentum since 1999 when it was brought under the fold as part of NATP.



Main Objectives of TAR - IVLP

- To introduce technological interventions with emphasis on stability and sustainability along with productivity and profitability taking into account environmental issues in well endowed and small production systems.
- To introduce and integrate appropriate technologies to increase the productivity with marketed surplus in commercial and off farm production systems.
- To monitor socio-economic impact of technological interventions for different production systems.
- To identify extrapolation domain for new technology/technology modules based on environmental characterization as at meso and mega levels.

Operation of TAR-IVLP

1. Selection of operational area

A village is the unit of operation of TAR-IVLP. Selection of suitable village or a cluster of villages covering about 1000 farm families and having representation of various production systems is of paramount importance. Villages having primary institutions like cooperative, schools, panchayat (village-elected body of representatives etc.) shall be an important component to forge better advantage for having better linkages, In addition, factors such as proximity to the implementing agency center, willing nature of farm families, absence of political/social/class conflicts etc. need to be borne in mind while selecting the village for the programme.

2. Constitution of multidisciplinary team of scientists

The project is implemented by Central Agricultural Research Institutes/State Agricultural Universities through a multidisciplinary core team of scientists numbering 4-5 from the implementing institution led by a Team Leader. (Principal Investigator). The TAR-IVLP also envisages an optional team of scientists drawn from other institutes to look into specific issues.

3. *Agro-ecosystem analysis (AESA)*

The AESA of the village using PRA techniques was the first step towards launching the programme. It provided information on resource availability, production practices, interaction within and amongst various resources and enterprises on spatial and temporal basis.

4. *Problem diagnosis and technology intervention*

Based on the information elicited from AESA and the legitimization through focused group discussion problems of various enterprises in terms of bio-physical and socio-economic causes were identified. The identified problems were prioritized and possible technological interventions were assessed in a focused group discussion with farmers and scientists.

5. *Action Plan for technology assessment and refinement*

The technological interventions contemplated were categorized down into specific action plans in terms of on-farm trials/demonstration, treatments, local checks, number of trials, plot size, critical inputs etc. Action plans were prepared keeping in view the AESA and in consultation with farmers. The technologies were evaluated not solely in terms of their technical/economic performance, but also in terms of their conformity to socio-economic and cultural circumstances, goals and needs with active participation of farmers.

6. *Site committee meetings*

Action plans were also discussed in the site committee meetings to improve the nature of interventions. Site committee was constituted for proper implementation including site selection and project submission considering the guidelines of ICAR. Site committee meetings were held to advise the TAR-IVLP core team on the selection, modifications and approval of techno-interventions and action plan in the adopted villages and overall review of the project.



7. *Monitoring and Evaluation*

The goals of this component are to measure the scale of success. Review team was constituted comprising of subject experts for this purpose. The peer review team visited the TAR-IVLP villages to monitor the progress of the project and made specific recommendations. The progress of TAR-IVLP was also monitored through organizing workshops and visits of officials.

2.4. Meeting Farmers' Needs holistically through Agricultural Technology Information Centres (ATIC)

The primary goal of agricultural extension is to assist farming families in adapting their production and marketing strategies to rapidly changing social, political and economic conditions so that they can, in their long term, shape their lives according to their personal preferences and those of the community. The task of extension, thus, is to improve interactions with the Agriculture Knowledge System (AKS) so that farmers have optimum access to any information that could help them enhance their economic and social situation.

To attain these objectives, the Indian Council of Agricultural Research initiated Transfer of Technology (TOT) projects through various means like Krishi Vigyan Kendras, and Institute-Village Linkage Programme centers to satisfy the need of the farmers to a larger extent. However, some more are to be done to attain the requirement and expectations of the vast majority of farmers in 640 districts of the country.

Though the aforesaid TOT projects and their vast mechanisms are made to help and serve the farming community to accomplish their objectives, some of the basic needs of the farmers are not yet met.

The five basic needs of the farmers as generally viewed are :

1. Awareness of and motivation to use improved technologies / management practices.
2. Advice on appropriate farm planning and resource management.

3. Practical farming skills relevant to new technologies / management practices.
4. Production inputs and credits and
5. Post harvest and marketing services to farmers to get a food price in a competitive global agriculture.

Interestingly these needs of the farmers irrespective of their locations and farming practices are not realized by the existing transfer of technology projects. Hence a new and innovative transfer of technology mechanism named, Agricultural Technology Information Centre (ATIC) has been conceived and put into practice since 1998-99 under National Agricultural Technology Project (NATP) sponsored by World Bank and implemented through 40 ICAR Institutes and State Agricultural Universities (SAUs) located in various parts of the country.

ATIC - Its Distinctive Features

ATIC is intended to provide all basic needs of the farmers through a single window service. This unique system not only serves the farmers but also other stakeholders of the farming practices to provide solution to their location specific problems and make available all the required technological information together with technology inputs and products for testing and use by them. The rationale behind the establishment of ATIC has been :

1. Providing diagnostic services for soil testing, plant and livestock health;
2. Supplying research products such as seeds and other planting material, poultry strains, livestock breeds, fish seed, processed products, etc., emerging from the institution for testing and adaptation by various clientele;
3. Disseminating information through published literature and communication materials as well as audio-visual aids; and
4. Providing an opportunity to the institutes / SAUs to have resource generation through the sale of their technologies



ATIC's Focused Objectives

1. to provide a single window delivery system for the products and species available from an institution to the farmers and other interested groups as a process of innovativeness in Technology Dissemination at the institute level;
2. to facilitate direct access to the farmers to the institutional resources available in terms of technology, advice, technology, products, etc., for reducing dissemination losses; and
3. to provide mechanism for feedback from the users to the institute.

Attributes of ATIC

The inbuilt mechanism of ATIC ensures :

1. Availability and accessibility of new technologies
2. Relevance of new technologies
3. Responsiveness of new technologies to the needs of different categories of farmers
4. Varied requirements for different categories of farmers and
5. Sustainability of such unit within overall institutional framework.

It is expected that if ATIC works with its full vigour and mandated objectives there will be no doubt that farmers of India will be able to accomplish their coveted goal and produce more with quality and with reduced cost and will be competitive partner in the agriculture market in the context of WTO and globalisation of agriculture. Not only ATIC will help farmers to use modern technology for demand driven agriculture but also it will help developing viable, responsive and sustainable agriculture with linkages among research, extension and farmer's systems.

Central Sector Scheme on Extension Support to Central Institutions

This is an on-going scheme of the Extension Division, Department Agriculture and Cooperation, Ministry of Agriculture, Government of India. It has the following components:

- a. HRD activities: MANAGE based in Hyderabad is providing outstanding HRD support for middle and senior level extension functionaries who are engaged in extension activities including training for agri-clinic and agri-business centres through which Agri-Graduates are trained to set up their own business.

Extension Education Institutes: 4 Extension Education Institutes located at Nilokheri, Anand, Rajendrangan, and Jorhat provide training to middle level extension functionaries are supported under this component.

Model training Courses/ Interfaces/ Workshops/ Seminars: 95% of the training needs of extension functionaries are met by the State agriculture and line departments. However, Model Training Courses on thrust areas are proposed to be supported under this component. 70 Model training courses are proposed to be supported.

- b. Exhibitions/Fairs: Agriculture exhibitions are an excellent mechanism for showcasing latest technological advancements and dissemination of information to the farming community and also for promoting business opportunities in agriculture and allied sectors. Agriculture fairs are organized at different levels.

- At the national level, DAC organizes a Krishi Expo and/ or participates in India International Trade Fair organized by India Trade Promotion Organization.
- DAC is supporting five Regional fairs – one in each region – every year.
- DAC also participates in ad-hoc exhibitions organized by various agencies
- The agriculture fair at block, district and state levels are also being supported by DAC under the Extension Reforms (ATMA) Scheme and decision in this regard rests with the States.

- c. Awards: Under the Scheme on National Productivity Awards, funds to the tune of Rs.20.00 lakh is provided to the National Productivity Council as Grant-in-Aid for implementing the scheme and 14 Awards are given to Organizations/Institutions working for the development of agriculture and allied sectors in a year.

- c. National Gender Resource Centre in Agriculture: A Gender Resource Centre has been set up to work as a focal point for convergence and coordination of gender related issues within DAC, MOA. This centre is to essentially review, monitor and assess the gender contents and impact of various on-going programmes of MOA



- and make recommendations on appropriate improvements in their strategy and design. Besides, the centre is to collect, analyze and document information on Women in Agriculture and make it available in a user-friendly mode. It has also established a Gender Budgeting Cell which will look into the budgetary commitments for various schemes /programmes of DAC and the proportionate benefits flowing to women farmers.
- d. Support to Restructured Directorate of Extension (DOE): The fast changing extension scenario calls for redefining the roles, responsibilities and restructuring of the DOE to enhance its effectiveness and operational efficiency. The Directorate of Extension has been restructured to meet current and future challenges, based on SIU study.
- e. Monitoring and Evaluation/ Innovative Activities: The specific activities under this component include Central Monitoring & Evaluation of schemes by engaging institutions of repute and take up innovative activities.

Support to State Extension Programmes for Extension Reforms

The Scheme is currently in operation in 603 districts of 28 states & 3 UTs. The scheme essentially focuses on institutionalizing key reforms. The extension support to farmers under the scheme is provided through a 'basket of activities' called the ATMA Cafeteria, which covers activities that are to be implemented at both State and District levels. State level activities include preparation of State Extension Work Plan (SEWP), support for up-grading state level training institutions, such as, State Agricultural Management & Extension Training Institutes (SAMETI), human resource development of extension functionaries, organization of various agriculture related activities including monitoring and evaluation. District level activities are further categorized into four groups; namely: (i) Farmer Oriented Activities; (ii) Farm Information Dissemination Activities; (iii) Research-Extension-Farmer Activities, and (iv) Innovative Activities. Based on SREP, and the Block Action Plans jointly firmed up by the Block Technology Team (BTT) and BFAC, the District Agriculture Action Plans (DAAPs) are prepared annually. At the State Headquarter, district plans are collated and a State Extension Work Plan (SEWP) is approved by Inter-Departmental Working Group (IDWG) headed

by the Agriculture Production Commissioner/ Secretary (Agriculture) of the State. The State Extension Work Plan (SEWP) approved by IDWG is further put up to State Level Sanctioning Committee for approval and Government of India for release of funds.

The status of implementation

- Over 157 lakh farmers have been benefited so far since inception of the scheme
- through various extension activities viz.:
- Over 10.97 lakh farmers benefited through Exposure Visits;
- Over 39.55 lakh farmers through various training programmes at different levels;
- Over 16.97 lakh farmers through Demonstrations; and
- Over 89.85 lakh farmers through Kissan Melas/Field days and Kissan Goshties.
- Over 75,000 Farmers Interest Groups have been mobilized.
- Over 25,400 Farm Schools have been set up on the field of Progressive/Awardee farmers.

The evaluation and impact assessment of the scheme has been conducted during 2009-10 through an independent agency namely, Agricultural Finance Corporation (AFC). While the assessment has found a large increase in trainings, exposure visits and demonstrations after the introduction of the Scheme, it stressed the need for further increase in exposure visits and demonstrations. More than 52% of the respondent farmers agreed that they have gained knowledge of new practices and technologies and a substantial section of them disseminated the newly acquired knowledge among fellow farmers (Farmer to Farmer Extension). About 25% of the farmers reported increase in agricultural production and income. The Study recommended that CIGs/SHGs are to be promoted in order to fill gaps in extension services at the village level. They also recommended that the time-lag between technology generation and dissemination needs to be minimized. The ATMA scheme was revised in 2010 and revised guidelines for operationalization of ATMA are being implemented since then. Revised guidelines can be accessed from <http://vistar.nic.in/projects/atma22410.pdf>.

Agri-Clinics and Agri-Business Centres (ACABC)

Launched in 2002, the Scheme on Establishment of Agri-Clinics and Agri-Business Centres (ACABC) was aimed to strengthen the extension services and to tap the potential of unemployed agriculture graduates in order to provide them self-employment opportunities. Under the scheme, free training and handholding support is provided to unemployed agriculture graduates so as to enable them with required knowledge, skill and orientation towards agri-preneurship. Needed support is also extended to the trained graduates for developing a bankable agri-business project and for availing loans from a commercial bank at concessional rates. A provision of back ended capital subsidy and interest subsidy to them on the loans availed of for Agri-venture establishment was also made in 2006. The Scheme is being implemented by Government of India through National Institute of Agricultural Extension Management (MANAGE) and the National Bank for Agriculture and Rural Development (NABARD). MANAGE coordinates and implements the training and handholding support through a network of Nodal Training Institutes (NTIs) identified through a well-designed process of screening and assessment. NABARD looks after the credit part of the scheme by refinancing the agri-business loans granted by commercial banks to the trained graduates and release of subsidy thereon.

Ever since its launch in 2002, a total of 24,229 candidates have been trained under the scheme out of which 8604 have established their ventures. This shows that the scheme has invoked tremendous interest in the unemployed agriculture graduates towards entrepreneurship in the rural areas. UP, Maharashtra and Bihar have exhibited remarkable achievement in the numbers of candidates that enrolled for ACABC training. States like Rajasthan, Karnataka, Tamil Nadu, Andhra Pradesh, and J&K have also exhibited a modest progress. Overall progress in the establishment of agri ventures by trained graduates was 35.5% since its inception. Though the success has been maintained during the preceding year, at least 50% success rate during coming years is further anticipated.

Many factors contribute to the development of agripreneurs through ACABC Scheme including level of agricultural development in the State, awareness in prospective candidates about the ACABC scheme and infrastructure facilities available. Thus, the need for efficient support organizations to monitor the activities of small enterprises was felt. Moreover, prediction of the future demand, introduction of modern technologies, cost control and business expansion are the important areas, where entrepreneurs need regular support.

Major revisions were made in the Scheme during 2010-11 to accommodate these concerns. The revised training cost per trainee is now limited to Rs.35,000 by proportionately raising the limits under different components and adding the new area of hands on industry training. In order to incentivize most successful agripreneurs under that scheme, an element of refresher training has been introduced in the revised Scheme format. This training of about 3-5 days duration would be conducted in specialized Institutions like SAUs/ICAR Institutes /IIMs/IITs/CSIR Institutes /DST Institutes/Private Institutions. Similarly, NABARD has given support to organize sensitization training and workshops to motivate the bankers across the country to provide credit to agripreneurs for establishing ventures. The initial Interest and Capital Subsidy pattern of the Scheme has been replaced with a Composite Subsidy (36% for general and 44% for women, SC/ST & NE) in place of earlier Interest + Capital Subsidy to make the assessment simpler. The benefit of Subsidy shall be limited for the project cost up to Rs. 20 lakh (plus 5 lakh for extremely successful individuals) for individual projects and project cost up to Rs.100 lakh for a group project (established by a group comprising of minimum of five individuals) of trained candidates under the Scheme. In order to ensure that the provisions made under the revised Scheme are gainfully utilized and Scheme achieves the desired success rates, sufficient checks and balances, and an effective monitoring mechanism has been put in place with the active involvement of all the stakeholders including MANAGE, NABARD, Banks, State Functionaries, SAUs and ICAR Institutes.



Kisan Call Centres (KCC)

To harness the potential of ICT in agriculture, the Ministry of Agriculture has launched an innovative scheme, called 'Kisan Call Centers.(KCCs).' KCCs have been functioning since 21 January, 2004 and working in 25 different locations covering almost all the states. At present, 144 Call Center Agents have been engaged in KCCs, who are answering farmer's queries in 22 local dialects. All KCC locations are accessible by dialing single toll free number 1800-18-1551 from 6.00 AM to 10.00 PM on all 7 days a week nationwide. This number is accessible through all mobile numbers of all telecom networks even of private service providers and land lines as well. At each KCC location there are Kisan Call Centre Agents. Twenty five Nodal Officers of Government of India are keeping liaison with them for providing technical support for running the Kisan Call Centres. Till September, 2011, 62.5 lakh calls from the farmers have been received in the Kisan Call Centres since inception.

The number of calls has trebled since November, 2010. In order to monitor the activities of Kisan Call Centers a State Level Monitoring Committee has been constituted comprising of the Secretary (Agri.)/Director Agriculture and allied Depts, representatives of local BSNL office, and concerned nodal officer. Call escalation matrix has been revised to offer different tiers of support and to ensure greater and direct involvement of farmers.

Capacity Building

The Extension Education Institutes were established at four locations in phases namely: (i) Nilokheri (Haryana) in 1958; (ii) Anand (Gujarat) in 1962; (iii) Rajendranagar, Hyderabad (A.P) in 1962; and (iv) Jorhat (Assam) in 1987. The primary objective of establishing four Extension Education Institutes is to prepare high quality professional leaders in the field of extension education and communication to serve as trainers of various training programmes for the growth and development of agriculture. Initially these institutes were required to organize a three month duration course for the Subject

Matter specialist. Besides, the institutes were providing long term in-service training to instructional staff of Gram Sevak Training Centres. EEIs are also engaged in adaptive research in extension teaching methods and communication. Looking into the weakness in the institutional framework of the Extension

Education institutes, a study on restructuring of the EEIs was commissioned during December 2004 through the agency Centre for Organizational Research & Development in Management (CORD-M), Hyderabad. It was observed that the EEIs had become, over a period of time, another department of the respective university. All these resulted in exclusion of EEIs from the mainstream of extension system. The concerned states and vice chancellors of all four SAUs (Hyderabad, Anand, Nilokheri & Jorhat) involved with EEIs were consulted and based on the intimation a roadmap for restructuring the EEIs has been drawn.

Model Training Courses (MTCs) scheme has been implementing since 1996 which emphasizes a demand-driven capacity building of extension managers, marketing managers and extension functionaries of the State development departments. ICAR Institutes and State Agricultural Universities are engaged in the technology dissemination and these technologies need to percolate to the farmers' field. MTCs are of national character and offer training courses in specialized areas through ICAR and SAUs in agriculture, horticulture, veterinary, sericulture and extension. MTCs are very cost effective as the training infrastructure and specialists of the host institutes are used for imparting training. The Model Training Course of eight days duration offers an interface between host institutes and extension field functionaries.

Use of Media in Reaching the Farmers

The Central Sector Scheme 'Mass Media Support to Agriculture Extension' is in operation since the Tenth Plan Period to enable a revamping of the extension services in the country by using electronic media i.e the wide network of Doordarshan and All India Radio for transfer of technology and information to the farmers. The primary



objective of the Scheme is to use Television and Radio with their massive penetration as a vehicle that could be exploited for the purpose of extension. They have the advantage of reaching a wide audience at a very low cost. Under this Scheme, the existing infrastructure of Doordarshan (DD) and All India Radio (AIR) is being utilized to make the farmers aware of modern technologies and researches related to agriculture and allied areas. A 30 minute programme is being telecast five to six days a week through National, 18 Regional Kendras and 180 High Power/Low Power Transmitters of Doordarshan. Similarly, 96 Rural FM Radio Stations of All India Radio are being utilized to broadcast 30 minutes of programme for farmers 6 days a week. For telecasting success stories, innovations and for popularization of change-setting technology and farming practices through the Saturday slot of Doordarshan's National Channel, DAC is producing films, which would consciously project inter-alia positive aspects of agriculture in India. A three-tier system has been set up, Apex Committee at the Centre, the State Level committees (SLC) and the District Level committees (DLC) to provide guidance and monitor the programmes telecast/ broadcast through DD and AIR. A hundred percent achievement in respect of the physical target during the Eleventh Five year is expected under the Scheme.

Focused Advertisement Campaign

The Department of Agriculture & Cooperation, Ministry of Agriculture has launched a 'Focused Advertisement Campaign'; which would cut across all the Divisions of the Ministry to create awareness of assistances available under various schemes. The Campaign was launched on 5 July, 2010. At the national level this is being implemented by way of short advertisements Audio & Video Spots of 30 - 60 seconds duration. The spots are broadcast/telecast through AIR, DD and private channels operating at the national and 190 State of Indian Agriculture regional level during news, serials, and entertainment programmes having maximum viewership.

On an average, one spot in every month is dubbed in different languages. Till date the following spots are produced under the campaign.

- Farm School (Munim)
- Farm School (Sass Bahoo)
- Kisan Credit Card
- National Horticulture Mission
- Accelerated Pulse Production Programme (A3P)
- Jagrook Kisan – Drought Advisories for Bihar, Jharkhand and West Bengal.
- Judicious use of Fertilizers
- Poorvi Bharat Haritkranti.

The spots were telecast through DD National and 25 Regional Kendras of DD as well as 21 private channels operating at National & Regional level. To monitor the campaign, a software has been developed with the help of NIC. All the Channels are uploading the prelogs (time band of 20 min) and post logs. IP TVs have also been installed to monitor the campaign. A 'Focused Publicity Campaign Committee' has been formed in DAC and regular meetings of the committee are being held to monitor the programme. A proposal has already been initiated to get the feedback of the campaign through Audience Research Unit (ARU) of Doordarshan.

Challenges

The main challenges of the public extension services include the following:

Many progressive states such as Gujarat, Haryana, HP, Madhya Pradesh and West Bengal have not been able to show a level of progress matching with their agricultural development initiatives. Except for Assam, Nagaland and Manipur, many of the NE States have exhibited very poor progress under the Scheme on Establishment of Agri-Clinics and Agri-Business Centres



There was hardly any institutionalized relationship between EEIs & MANAGE and EEIs & SAMETIs. There is not much consultancy and research work done by the faculty of EEIs and there is no interaction with private organizations.

SLC & DLC have been constituted in all the States but the meetings of the committees are not being held regularly.

Monitoring the scheme in respect of the quality and content of the programmes telecast/broadcast needs attention.

Monitoring of Focused Advertisement Campaign; Feedback of the Farmers on the campaign and the programmes in which the spots could be placed will be productive.

The Way forward

Some of the important measures which can strengthen the public extension services include the following:

- All the institutions involved in extension activities should better target their beneficiaries; characterize the requirements of each beneficiary group; and customize their extension services, so that they become total solution providers to target groups.
- Extension activities to emphasize sustainable natural resource management including indigenous knowledge systems.
- Documentation, rationalization and institutionalization and popularization of contemporary farmer innovations
- Promote CIGs/SHGs in order to fill gaps in extension services at the village level.
- The time-lag between technology generation and dissemination needs to be minimized by devising suitable mechanism.
- Strengthening communication and knowledge sharing through establishment and maintenance of technology museums, mobile field services, village adoption
- programmes, farmer field schools, tele-advisory services, online agri video channel, SMS-based agri advisory service, information kiosks, disaster management interventions, organizing exhibitions, field days, exposure visits, etc.

- Strengthen media and e-resources through publications such as newsletters, books, manuals, leaflets, brochures, technology hand outs, etc.; media coverage of extension programmes; development of cyber extension platforms and extension portal; content development for cyber extension, production of AV and interactive aids, etc.
- Strengthening market intelligence, EDP and consultation through EDP packages, project report preparations and consultancies, industry and enterprise relations and partnership, establishing local market network on prices, establishing value chain demonstration units, etc.
- Strengthening continuing education programmes through open and distance learning for farmers and entrepreneurs with online courses, conducting certificate courses for farmers, entrepreneurs input dealers, extension agencies, etc.

2.5 National Agricultural Innovation Projects (NAIP) for rural livelihood security

Agricultural innovations and diffusion of new technologies are the important factors in the country's quest for food, nutrition, environmental security and enhancement of income and employment. Agricultural research in India has generated outstanding productivity increases in the past and shall continue to play an important role in supporting rural livelihoods and accelerating rural growth. However, rising population and per capita income are pushing up the food-demand, which needs to be met through enhanced productivity per unit area, input, time and energy. At the same time, the issues of decreasing factor productivity and resource-use efficiency have also emerged. Furthermore, many promising research findings have not reached the farmers, due to either inadequacies in research designs or research results, deficiencies of delivery systems or lack of economic incentives. This is particularly visible in the complex environments and less-favored areas. In order to address the problems of poverty and hunger, it is critical to redirect and augment resources devoted to agricultural research to the farming and livelihood systems of the poor rural communities. Further, to utilize the technological breakthroughs that are already



available for commercial use, the agricultural research priorities and strategies will have to be revisited and new system-wide approaches need to be developed and adopted.

The NAIP will address the above issue through a coordinated effort on changing the content and process. Policy and technology options will be screened or tested by the end-user for applicability as well as for economic social and environmental sustainability. In the applied and adaptive research projects, the end-user of innovations will be involved from the start of programmes and projects and will remain partner till their completion. Both indigenous knowledge and frontier technologies will be used to generate the targeted products.

The overall objective of the NAIP is to facilitate an accelerated and sustainable transformation of the Indian agriculture so that it can support poverty alleviation and income generation through collaborative development and application of agricultural innovations by the public organizations in partnership with farmers' groups, the private sector and other stakeholders. The specific objectives envisaged are :

- a. To build the critical capacity of the ICAR as a catalyzing agent for management of change in the Indian NARS
- b. To promote 'production to consumption systems research' in priority areas / themes to enhance productivity, nutrition, profitability, income and employment.
- c. To improve livelihood security of rural people living in the selected disadvantaged regions through technology-led innovation systems encompassing the wider process of social and economic change covering all stakeholders.
- d. To build capacity to undertake basic and strategic research in frontier areas of agricultural sciences to meet challenges in technology development in the immediate and predictable future.

The NAIP is planned for six years (2006-12) to allow time for piloting, learning and scaling-up, wherever possible.

Institutional Development Priorities of the NAIP

The NAIP is aware of the growing importance of access to information in the global competitive economy. Competitiveness and access to information are of sufficient relevance to poor-population groups to save them from further marginalisation. The quantum of new information and the rapid rate at which the existing knowledge is becoming obsolete may pose a threat to the traditional and indigenous knowledge of our country. The NAIP plans to support efforts to protect the useful traditional knowledge. Thus, the NAIP shall strive for a better balance between utilization of the existing / indigenous knowledge, creation of new knowledge and protection of useful traditional knowledge through documentation, validation, dissemination and utilization.

India's agricultural sector is composed of a large number of small individual entrepreneurs. Farmers are becoming increasingly dependent on other entrepreneurs for services, inputs, implements, marketing and processing. The capacity of these large numbers of entities to adjust to the rapid changes in the institutional, economic and political environments, and inter-collaborations is highly crucial for the success of agricultural development. Capacity building and strengthening of partnerships will be major elements in all the components of the NAIP. Capacity building applies to individual farmers, farmers' groups / organizations, and agrarian institutions and businesses, which support them. Partnerships refer to collaborations among public sector institutions, farmers' organizations, self-help groups, NGOs and the private sector. The NAIP is well aware that women farmers, whose number and contributions are significant in the Indian agriculture, have to be increasingly involved in the development process. Participatory involvement in the development process. Participatory mode of technology development, learning and action taking shall be the essential ingredients for capacity building and project management in the NAIP.

With the increasing importance of marketing in the Indian agriculture, enhancing the business skills of agricultural research institutions assumes high significance. There is a need to develop business development units / groups as models in potential institutions for business planning, and market development for commercialization of agro-technologies.



2.6 Summing Up

India enjoys favourable soil and climatic conditions to grow varied crops with abundant other resources. Scope for growth in agriculture is enormous in India. Although we have achieved self sufficiency in food production but it should not be a matter of complacency. It is generally felt by experts and policy makers that India should strive for second green revolution to break the present plateau in food grain production. This is quite evident when we compare the production level of two of our most important crops – rice and wheat in India and with the other countries.

Further, Indian agriculture had been and is the mainstay of Indian economy. This has to be seen not only in terms of contribution of agricultural sector to the gross domestic produce but also the number of people dependent upon agriculture and the role agriculture sector plays even in terms of industrialization. Important segments of industries in India are dependent on the products from the agricultural sector. However, to keep pace with the growing population and industrial demands there is need to increase the food production from the present level and also make it self sustaining.

One should note that Indian agricultural economy is quite significantly integrated with other sectors of economy and it gets influenced and it influences other sectors. Modernization of agriculture has made it dependent on various inputs which are from within the country and outside the country. While discussing the challenges of the Indian agriculture in the coming years, it is necessary to discuss it keeping in view the growth, sustainability, labour availability and government policies.

Hence, the special agricultural development programmes discussed in this section can be very much effective, meaningful and purposeful to help farmers produce more and have more income. These programmes also provide a congenial and useful platform for participatory technology development for more easy adoption by the farmers. These innovative programmes also take care of farmers needs of their production inputs, knowledge and skills to carryout their farming endeavours.





Unit-3

Case Studies and Success Stories in Agricultural Extension Management

Structures

- 4.0 Objectives
- 4.1 Introduction
- 4.2 Case study and success
- 4.3 Let us sum up

4.0 Objectives

After reading this unit, you will be in a position to:

- Understand the importance of identifying the successful cases related to Agricultural sector in your jurisdiction
- Realize the importance of using success stories to motivate, persuade and influence the farmers to change their attitude in adopting new technologies.

4.1 Introduction

A 'success story' is known as a snapshot of reality, a slice of life and facets of development, which ushers in an understanding of the situation with analysis and offers a set of recommendations that can be used as a template for replication.

'Success Story' is not just a 'story' but the art and science of description of real events. It must be based on factual information, with provision of corroborative evidence to support the facts. The principal qualifications of a qualitative success story are the systematic documentation of experiences that sets it apart from the rest. The

distinguishable feature of a success story is the set of practices and processes that have helped to bring in optimal 'change' and it must clarify three basic dimensions viz.

What is different?

How is it different?

Why is it different?

The ultimate mission of documenting a success story is to "cascade the effect of success from one to many". The objectives are

- To recognize and communicate a message of 'uniqueness' (success).
- To analyze the reasons for 'uniqueness' (success)
- To provide a set of guidelines (practices and processes) to replicate the 'uniqueness' (success).

The satisfaction obtained from observing direct success among successful farmers or community as a result of our Extension program efforts is most gratifying. These successes may take many forms and may be focused on a single individual, group, or larger population. However, the underlying theme in any success story is the positive result on an individual or society that occurred as a result of our program efforts.

Ultimately success stories should be

- Short, clear, simple and readable
- Reflecting positive change and transformation
- Highlighting project interventions
- Empowering farming communities
- Should attract immediate attention of the farmers

The success stories documented during the NATP (ITD) representing different aspects of farmers will give various facets of agricultural development and extension programmes.



4.2 CASE - 1: SAY IT WITH FLOWERS BUT FIRST GROW THEM PROFUSELY

A story of Chrysanthemum Proliferation

The locale was the drought prone Ahmednagar district. The actors involved were the chrysanthemum growing farmers of Akolner, Chas, Kokangaon, Bhoyarepathar, Pimpalgaon and Nagadevle and the ATMA (Agricultural Technology Management Agency) Personnel in the year 2000.

Though 'say it with flowers is an old adage, flowers had not received our close attention. Only gods and grooms were their recipients. The scenario have changed now and the flowers are in demand as an essential commodity. Birthdays, anniversaries, inauguration, home decor and all such occasions of festivities cannot be celebrated without flower. They are now available in market in all seasons in all Colours, shades, fragrance - pungent or soft. The aesthetics of flowers is everywhere now and is going to reach new heights as an indicator of the cultural aesthetics of our society. The ATMA, Ahmednagar in its programme of positive intervention in agriculture related issues of the farmer, realized that though drought prone, Ahmednagar block of the district was a major flower growing area and chrysanthemum had the lions share in flower production. It was a cash crop in Akolner Chas, Kokangaon, Bhoyarepathar, Pimpalgaon and Nagardevle and approximately 400 acres were under cultivation.

PROBLEM: Knowledge gap vis a- vis low income.

These farmers were found to be unaware of the new high yielding floral varieties, new package of practices as well the importance of drip irrigation for efficient use of available water. They were also ignorant of the techniques of improving the flower quality. They lacked the still in harnessing the post harvest technologies too.

All these had a collective and adverse effect on the income of the chrysanthemum flower growers of the area. Once the problem and its causes were identified, the ATMA team sought to go ahead with its package.

Intervention & Proces

ATMA as the first step organised exposure visit of flower producing farmers during 2000 to the Floriculture Research Centre of MPKV, at Ganeshkhind, Pune and to successful flower producing farmers of Rajgurunagar in Pune District. During the exposure visit the farmers were exposed to the improved varieties, package of practices and importance of drip irrigation for efficient utilization of available well water for quality production of flowers. Subsequently for the same group of farmers, a training programme on improved package of practices was conducted with the help of scientists from MPKV, Rahuri. Improved varieties of Chrysanthemum i.e. Sonali-Tara and Baggi were introduced in villages of Akolner, Kamargaon and Chas by organizing adaptive trials during the year 2000.

The Flower growers of Akolner have formed the 'Akolner Phulotpadak Sangh, a Farmers Interest Group for arranging the inputs, production and marketing of flowers under the guidance of Mandal Agricultural Officer. Members of this group met and exchange ideas on every Monday under the guidance of Agricultural Officer of the mandal. Before formation of the group, the produce was being sold at local markets without any grading and packaging and return was not at par with the investment. Now the group has been oriented about the packaging and grading of the flowers and they are sending flowers collectively to distant markets of Nagpur, Baroda, Mumbai, Surat and Ahmedabad.

Benefits & Impact

- The high yielding improved Sonali-Tara variety of chrysanthemum in the area.
- Production of chrysanthemum flower increased from 5-6 to 10 t /Ha.
- Area under chrysanthemum under drip irrigation increased from 50 acres to 125 acres.

TDMC Members Exposure Visit to Chrysanthemum Demonstration Plant at Akolner, Ahmednagar



Lessons & inferences:

- The beneficiaries when exposed to the successful examples, research stations and trained on production practices, adopted the improved package of practices.
- A continuous guidance and support from extension workers is important.
- Formation of farmer's interest group is important for maximum adoption of technology in the villages.
- For better remuneration, the farmers must be trained about post harvest technologies.
- Water management practices are found very crucial for higher production with better quality.
- The location specific need based technologies by involvement of farmers are helpful for technology adoption and improving income level.
- Group approach for sustainable technology dissemination is important.

CASE - 2: Artificial Insemination (A.I.) in Goats

The credit for success of widespread Artificial Insemination in goats goes to Kiran Rajput of Bodhegaon in Phulambri Tahsil in Aurangabad district. ATMA impressed upon the poor farmers that goat rearing was a remunerative activity.

Though goat rearing is a remunerative activity for poor farmers, they have local goats having very low productivity. Two improved breeds " Shirohi " and Osmanabadi are available but it is a difficult process of replacing the breed. The better alternative is upgradation of goats through cross breeding. Animal Husbandry Department has been undertaking several activities for cattle. A.I. for cattle is also an important programme. However for local goats, inspite of huge scope very less attention was is paid. Hence ATMA decided to take up this task.

Project Director, ATMA informally came to know that a paravet Shri Kiran Rajput from Bodhegaon Tq: Fulambri took up A.I. in goats on experimental basis. ATMA identified his success story and decided to give publicity to it for replication. ATMA

developed a folder on the success story and invited Kiran Rajput to organize a training programme on Goat rearing.

Farmers' awareness about A.I. in goat increased. The crossbred goats were fetching higher prices in the range of Rs. 1500 - 3000 /- compared to local ones (Rs. 800 to 900) per male goat. Besides this, female goat got matured earlier. As ATMA published this information through a leaflet and in local newspaper, Mr. Kiran Rajput started getting enquiries from all over district and groups of farmers were coming forward for A.I. in goats.

- Two groups of farmers having goats are now regularly getting A.I.
- FAC members of Aurangabad Taluka visited; thereafter several farmers have been visiting to see crossbred goats leading to more adoption of A.I. in goats.
- ATMA identified the success story, had dialogue with AHD dept officials, AMC members and then encouraged both AHD dept. and paravet to try it on a larger scale. ATMA invited paravet as trainer, He was recognized as a trainer and his confidence up. BTT officials also identified 2/3 farmer groups in Fulambri block and linked them to Mr. Kiran Rajput for getting part A.I.

CASE - 3: Value addition - An effective tool for transformation of economy

Cashew is one of the major horticultural crops of Ratnagiri district. Total area under cashew in the district is 70577 hectars and is increasing at a phenomenal rate of 5% per annum. Total production of cashew nuts in the district is 1.12 lakh tones per annum. In spite of large-scale production, the economic gain to the cashew orchard owners was meager. The main reason for this was 99.78 % of the total produce was sold in raw condition and only 0.22 % was processed.

A study undertaken by ATMA revealed interesting findings. The farmers were fully aware of the benefits of Cashew Processing. But cashew processing involves a very delicate process. The processor should have sound technical knowledge which was not available to them. Therefore, some units which were already existed had



become sick. None was willing to start processing unit. Another revelation was that at least 12 tons of raw cashew nuts were required for commercially viable micro processing unit.

The average cost of one tonne cashew nuts is Rs. 35,000/- and the total capital required for raw material is Rs. 4,20,000/-. Small-scale processors would not have the financial backup to procure this much raw material.

Challenges

The premier task before ATMA was technical training. Therefore, ATMA had organised 11 training programmes for owners of sick units as well as for potential entrepreneurs. The courses covered selection of good quality raw material, boiling of nuts, cutting, drying, grading, packaging, marketing etc. (For new entrepreneurs on machinery selection, project report preparation, govt. schemes etc.).

All potential entrepreneurs were called twice in a month and technical session of three to four hours was held at ATMA's office, which was followed by a discussion session. The response was excellent to these training programmes. A total of 311 farmers participated in these programmes. Another aspect was relating to Stocking of Cashewnuts. ATMA had facilitated a support linkage between *Kharedi Vikri Sangh* (Cooperative Trading Societies) and the entrepreneurs. These societies purchased cashew nuts and got them processed by the micro cashew processing units.

Apart from the above ATMA also took care that the new entrepreneurs were benefited under the subsidy scheme of the Department of Agriculture on priority basis.

Major Achievements

As sick units were revived, people came to know about the tremendous potential of the industry. Hence, demand for training as well as cashew units got increased. Due to training, 89 new micro cashew units started functioning in the district. (Chiplun-28, Guhagar-11, Sangameshwar-3, Mandangad-5, Dapoli-12, Lanja-3, Ratnagiri-17, Khed-

10). Every year these units process on an average 12 tonnes per unit. A total of 1068 tonnes of cashew processed in 2002-03 and the value addition was to the tune of Rs. 213 lakhs.

During the year 2001-02, amount of convergence in the form of subsidy from the department of agriculture at the rate of Rs. 25,000/-per unit to 89 new units was Rs. 22.25 lakhs.

Replication

Success of the effort could cover only 1% of the total produce, 99% of the cashew produced in the district is still not being processed locally. To achieve cent percent value addition, 14000 more micro processing units are needed for the district. Therefore, ATMA is trying to replicate this feat in the entire district by well planned task oriented training.

CASE - 4: Group Effort of Women Interest Group (WIG) in Floriculture

The women of weaker section of the society wanted to do some work on their own to earn some income for their families. It was difficult for them to find a suitable enterprise which would not only give decent returns, but also provide gainful employment to fellow women. The case of Mrs. Shanti Devi is an example which could be portrayed to show that where there is a will there is a way. Mrs. Shanti Devi received training from ATMA, Patna and was advised to form a WIG and get registered with ATMA so that ATMA could provide necessary support to her group keeping the mandate in mind. ATMA not only helped her in procuring good quality planting material of marigold but also provided marketing linkages through another FIG from Bishanpura village of Bihta block.

Mrs. Shanti Devi belongs to the weaker section of society and she took lead in planting the new crop of marigold and selling it in the local flower market. In this endeavour, she gained support from three of her fellow women who pooled their land



and money to start this new venture in 5 kathha of land and later leased in another 27 kathha to make in one acre. The initial working capital of Rs. 1,000/- was collected from their own savings in 2003 and within no time they started earning a profit from the sale of garlands in Patna flower market.

The group distributes the earning as per the share of land and money contribute to this venture and time devoted in their enterprise. She gets seeds/ planting material of marigold from Kolkata through another FIG, for planting during summer season and uses local seeds and planting material for other seasons. Mrs. Shanti Devi now intends to send flowers to distant places like Kolkata and New Delhi because she feels that the Patna flower market for marigold has reached a saturation point. She now wants to diversify to medicinal and aromatic plants cultivation if proper technology and planting material is made available to her group.

Outcome Benefits and Impact

The group started with an initial working capital of Rs. 1,000/- which was collected from their own savings. The group now earns a net profit of Rs. 10 to 15,000/- per annum per acre of land from the sale of marigold flowers. This has brought a sea change in their lives.

Lessons Drawn/ Inferences Drawn

The success of flower cultivation in the extremist infested area has lead us to believe that if sincere effort are made to improve the incomes and living conditions of the rural poor, this would not only eradicate extremism but also create better opportunities for others to emulate them.

Possibility of Replication and Future Implications-

As a result of Mrs. Shanti Devi's success in cultivation of marigold and its marketing, this activity has picked up in a big way in the area and about 50 women

farmers are now involved in its cultivation resulting in a sea change in their lives. This model can very easily be followed elsewhere under similar circumstances.

CASE - 5: Bee Keeping Through Women Self Help Group

Mrs. Rekha Devi is a resident of village Patiyasa Jalal under Bonchaha Block in Muzaffarpur District. She is 30 years old educated lady having six family members including three children. She belongs to a very poor family. Due to lack of any source of income, the whole family was facing stress in their livelihood.

Apiculture was practised in neighbouring village and being inspired from that her husband also started the same and she helped him. But due to lack of means & proper knowledge, on apiculture was going on very slow pace.

Once Mrs. Suman Kumari, Lady Extension Officer-cum-BTT member and Mr. Sushil Kumar Sinha, BAO-cum-Chairman, BTT, ATMA, Muzaffarpur, organised a meeting in her village under ATMA programme. They advised the people for adopting Apiculture by forming group of active young women. In the mean time, Horticulture Department organised a training programme sponsored by ATMA, Muzaffarpur especially for women group in which Dr. S. R. Singh, scientist of Apiculture (Bee-keeping), Rajendra Agricultural University was invited as trainer. After getting inspiration they started Bee keeping with 10 boxes of bees.

At present there are 13 women members having 150 Bee boxes. For starting business, they got Rs. 2.50 Lakhs as loan from UCO Bank, Bochaha with the help of ATMA functionaries. It costed nearly Rs. 5000/- per box per annum and gained an income of Rs. 6000/- per box per annum. This business runs throughout the year. After the end of season in their own locality, women moved to Ranchi & Punjab along with their Bee boxes in a group for collecting honey. Besides selling honey, they also sell Bees, boxes and Wax Plates to other interested people (having interest in bee keeping). Neighbouring women groups have also been attracted to this business.



They are paying back the bank loan amount and saved Rs. 60,000.00 as revolving fund. This amount is being utilized as per the requirement of the group members.

Apiculture is a very fruitful business if it is taken up systematically with improved techniques. This business is very helpful in upliftment of living standard of the people. They want to setup a processing plant and also produce different byproducts of honey. Mrs. Rekha Devi, group leader giving training and required material to newly trained women on cost and thus getting more benefit. Now she is living happily with her family members and her children are studying in local convent school.

CASE - 6: "HELLO ATMA"

Dissemination of Technology through Information Technology in ATMA - Kurnool

Background

ATMA - Kurnool was established with the prime aim of Technology Dissemination to the farmers. It is found that the live interactive programmes between farmers and ATMA experts through Electronic Media are found to be very useful to the farming community to get instant and immediate solutions to their problems.

Intervention And Process

ATMA - Kurnool has launched a live programme "**Hello ATMA**" on All India Radio - Kurnool Station during 2003 - 2004 and Broadcasted live programme on every Monday between 7-30 P.M to 7-45 P.M with a team of Scientists / Experts on a particular subject. The farmers can call and interact with the team members by dialing Phone (08518 - 259386) on various aspects and covered 23 topics on Agriculture, Animal Husbandry, Horticulture, Sericulture, Marketing etc. The ATMA, Kurnool provided telephone facilities free of cost to the farmers at all the FIACs to facilitate the process of interaction.

Benefit and Impact

Farmers from different villages even from the adjoining, villages of Mahabub Nagar District also shown very much interest and participated actively with enthusiasm in getting the technical information from the team of Scientists / Experts. The programme has become popular among the farmers and officials within a short time. ATMA, Kurnool has completed 23 programmes broadcasted through All India Radio - Kurnool and responded to more than 500 farmers.

Lessons Learnt and Inferences Drawn

The farmers from interior and remote areas could be able to interact directly with the team of experts on their Agriculture related problems. The farmers could be able to get immediate solutions to their problems and needed information.

Possibilities and Replication

The success of the programme was appreciated by many of the farmers including District Administration and steps have been taken to continue this programme during this year also.

CASE - 7: CROP DIVERSIFICATION WITH MARKETING TIE-UP

Socio Economic Back Ground

The District is categorized under Southern Agro Climatic Zone of Andhra Pradesh based on soil type, rainfall and altitude. The average rainfall of the district is 918 mm and it is distributed equally both in Southwest monsoon and North-East Monsoon. Red soils and red sandy-soils occupies major portion (91%) of the District. Alluvial Soils are seen in parts of Chittoor and Bangarupalem Blocks. The District is not having perennial rivers. For irrigation, the farmers purely depend on Tanks Wells and Bore-wells.

The Major crops in the district are groundnut, paddy and sugarcane. The district is suffering with drought due to non-receipt of rainfall. Groundnut is cultivated in Rabi



under I.D. Conditions in 28,000 hectares. Paddy is cultivated in 35,000 hectares. In Kharif and 48,000 hectares. In Rabi. Sugarcane is cultivated in 35,000 hectares. The area under principal crops are declining due to water problems and fluctuations in the prices.

There is hardly any functional linkage between farmers and marketing institutions. The middlemen who corner major chunk of profit of Prime producers as well as ultimate consumers.

Intervention and Process

There is every need that the farmers should go for diversification within their farming systems in view of soil degradation imbalance of nutrients, depleting underground water resources and erratic rainfall. The farmers of the district are depending on poultry and dairy as major source of subsidiary income.

Chittoor District is the second largest poultry population in the State. The poultry industry is formed as a union at District level named as "Chittoor District Poultry Association". For preparation of poultry feed, the District Association is importing 30 to 32 truckloads of (300 to 320 MTs) of maize from the neighbouring state of Karnataka daily.

The soils of Chittoor District is best suitable for growing of Maize crop even though there is an immediate market within the district and the crop requires less water. The farmers are reluctant to grow Maize crop and the area under Maize is only 80 hectares in the District.

ATMA, Chittoor has identified the demand and potentiality of the Maize crop. The Project Director and Chairman of ATMA has decided to popularize the Maize crop in the District. In Kharif 2002, ATMA has conducted 22 No. of awareness camps in all the Blocks on Maize crop. ATMA also printed leaflets / Pamphlets on Maize crop. ATMA also conducted six Exposure Visits from six Blocks to the Karnataka State. Scientists from Maize Research Station, Rajendranagar were also invited and conducted workshop

at Revenue Division level. Eighty Maize FIGs were formed covering 710 No. of male and 110 No. of Female members.

Impact

ATMA, Chittoor has contacted the District Poultry association and came to an understanding on purchase of Maize from the growers. The poultry association given a written agreement that they will purchase the maize seed at Minimum support price i.e., @ Rs.485/- per Quintal. The Poultry association also agreed to supply 2 MTs of poultry Manure on free of cost to the maize growers.

To boost up the Maize crop, ATMA, Chittoor has supplied Maize seed on free of cost in an extent of 400 acres in Kharif, 2002 and for 1000 acres in Rabi, 2002-03, as an incentive technical support is given by the ATMA and BTT Officers for cultivation of Maize.

Outcome

- The case study of Sri Kanakarajulu of Pulicherla Block shows that, 20 quintals of yield is obtained and the farmers got net profit of Rs.9000/- acre and incurred a nominal Rs.1,500 as cost of cultivation.
- Under drought situation and with the availability of limited ground water, Maize crop is accepted as alternative crop to Sugarcane & Groundnut under irrigated dry conditions.
- Maintenance of Maize crop is very easy as the crop is free from pests & Diseases.
- The crop come up in 100 to 120 days duration and assured immediate market is available within the District.
- After harvest, the farmers can use the stalk as Green fodder for cattle.
- The normal area under Maize in the district is increased from 80 hec. to 1150 hec. With the intervention of ATMA.



Lessons Drawn

With the availability of depleting ground water resources, the farmers are convinced with the Maize crop and accepted as an alternative crop to traditional crops like Sugarcane and Groundnut under irrigated dry conditions.

Since, there is an assured market and with the Minimum Support price, the area under Maize is increased drastically.

This type of proper linkages with markets not only improves the overall income but also serve as incentive for adoption of high production technology and diversification of existing farming systems. The farmers are realized the need for diversification within their farming systems.

Economic Benefits achieved

- Cost of the cultivation is less
- Requirement of irrigation water is reduced in drought situation compared to other ID crops.
- Free from pest and Diseases.
- Duration of crop is short and the farmers will get immediate intense.

4.3 Let us sum up

The above success stories indicate that it is possible to bring positive changes in the attitude of farming community through their active participation, collective efforts and planned and systematic efforts of extension.

The above success stories only an indicative. Similarly many success stories are available in various aspects of Agriculture and Allied sectors in every locations. Extension functionaries has to identify such innovative success cases and have to be documented. These documented cases can be used in the training and other activities as a source of inspiration for the neighboring farmers for replications. Similarly the fields of the success cases can be utilized during the exposure visits to further convincing the farmers for up scaling in a larger scale.