Course title: Fundamentals of Agricultural Extension Education

EXTN: 122 **Credit: 2+1=3**

Teaching Schedule a) Theory

Lecture	Topic	Weightage (%)
1	**Education:** Meaning, definition and types – Formal, informal and non formal education	2
2, 3, 4	**Extension Education-** Meaning, definition, need, scope and process; history, objectives, philosophy, principles and approaches.	10
5, 6	**Extension Programme Planning-** Meaning, process, principles and steps in programme development	5
7, 8	**Extension systems in India:** ▪ Extension efforts in pre-independence era : Sriniketan, Marthandam, Firka Development Scheme, Gurgaon Experiment ▪ Post-independence era : Etawah Pilot Project, Nilokheri Experiment ▪ Present extension System : Department of Agriculture : Structure, Function	5
9, 10	**Various extension/ agriculture development programmes launched by ICAR/ Government of India :** Introduction, Objectives and Salient Achievements ▪ Intensive Agricultural District Programme (IADP) ▪ Intensive Agricultural Area Programme (IAAP) ▪ High Yielding Varieties Programme (HYVP) ▪ Institution-Village Linkage Programme (IVLP) ▪ Operational Research Project (ORP) ▪ National Agricultural Technology Project (NATP) ▪ National Agricultural Innovation Project (NAIP) ▪ RashtriyaKrishiVikasYojana (RKVY).	10
11, 12	**New trends in agricultural extension:** Meaning , Objectives, Salient features ▪ Privatization in extension, ▪ ICT in Extension education - Cyber extension/ e-extension, ▪ Market-led extension, ▪ Farmer-led extension,	5
13	**Rural Development:** Concept, meaning, definition, objectives and genesis	5
14, 15, 16	**Various rural development programmes launched by Government of India** : Introduction, Objectives and salient features ▪ Swarnajayanti Gram SwarojgarYojana (SGSY) ▪ Indira AwasYojana (IAY) ▪ Mahatma Gandhi National Rural Employment Guarantee Act ▪ Prime Ministers' RozgarYojana (PMRY)	10

Lecture	Topic	Weightage (%)
	▪ District Rural Development Agency (DRDA) ▪ Integrated Watershed Development Programme (IWDP) ▪ Providing Urban Amenities in Rural Area (PURA) ▪ Rashtriya MahilaKosh – (National Credit Fund for Women) ▪ MahilaArthikVikasMahamandal (MAVIM)	
17	**Community Development. :** Meaning, definition, concept, principles and philosophy	3
18	**Democratic Decentralization (Panchayati Raj) :** Meaning, Constitution and functions	2
19	**Extension administration and management:** Meaning and concept, principles, functions and differences	3
20	**Evaluation in Extension** : Meaning, definition, types of evaluation, monitoring and evaluation	2
21, 22	**Transfer of technology programmes :** Lab to Land programme (LLP), National Demonstration (ND), Front Line Demonstration (FLD), KrishiVigyanKendras (KVK), Technology Assessment and Refinement Programme (TARP) of ICAR	5
23, 24	**Capacity building of extension personnel and farmers** : Meaning, Training and Education, Types of training, Training institutes in India, Concept of Human Resource Development	5
25, 26, 27	**Extension Teaching Methods and Audio-Visual Aids** : Meaning, definition, importance, classification, media mix strategies; Factors affecting selection and use of methods and aids	10
28, 29	**Communication: Meaning and definition;** elements, selected models and barriers to communication	10
30	**Agriculture journalism** : Meaning, definitions, news writing	3
31, 32	**Diffusion and adoption of innovation:** Concept and meaning, Attributes of innovation, Innovation decision process, adopter categories.	5
	Total	**100**

I. Education

The word 'extension' is derived from the Latin roots, 'ex' – meaning 'out' and 'tensio' meaning 'stretching'. Stretching out is the meaning of extension. The word 'extension' came to be used originally in USA during 1914 which means "a branch of a university for students who cannot attend the university proper. In other words, the word "extension" signifies an out-of school system of education.

Definitions of Education:

Webster defines education as the *process of education or teaching to develop the knowledge, skill, or character of the student.*

1. Education is the *process of bringing desirable change into the behavior of human beings.*

2. It can also be defined as the *process of imparting or acquiring knowledge and habits through instruction or study.*

3. Sociologist Rodney Stark declares that, *"education is the cheapest, most rapid, and most reliable path to economic advancement under present conditions."*

4. *Education is the harmonious development of the physical, mental, moral (spiritual), and social faculties, the four dimensions of life, for a life of dedicated service.*

Classification/Types of Education

A) Formal education.

B) Non-formal education.

C) Informal education.

Other types of Education

With the development of society, education has taken many shapes, such as

1. Child education
2. Adult education
3. Technical education
4. Education in the arts and crafts.
5. Physical education
6. Health education
7. Education is the Humanities and social sciences and several others.

A) Formal Education:

Formal education is basically an institutional activity, uniform and subject oriented, full time, Sequential, hierarchically structured, leading to certificates degrees and diplomas.

Characteristics of Formal Education:

1. Hierarchically structured
2. Full time education.
3. Technical and professional training.
4. A variety of specialized programmes.
5. Running from primary school through the university.
6. Chronologically graded education system.

B) Non-formal Education:

Any organized education activity outside the established formal system whether operation separately or as an important feature of some broader activity that is intended to serve identifiable learning clienteles and learning objectives

Characteristics of Non Formal Education:

1. It is flexible.
2. It is life, environment and learner oriented.
3. It is diversified in content and method.
4. It is non authoritarian
5. It is built on learner-participation
6. It is organizer human and environmental potential.
7. It enhances human and environmental potential.

C) Informal Education:

The truly lifelong process whereby every individual acquires attitude, values, skills and knowledge from daily experience.

Characteristics of Informal Education:

1. It is least controlled.
2. It consists of accidental, unclear, quantitative information.
3. It has a quantitative aspect that a qualitative one.
4. It refers even to emotions, feelings, beliefs, superstitions etc.
5. It offers responsiveness ready response when interact with environment.
6. It offers possibility to freely act in unknown situation.
7. It offers freedom of self-formation.

Difference between Formal Education and Non-Formal Education

	Formal Education	**Non Formal Education**
Target Group	Mainly young, Universal, Compulsory, Selective	Mainly adults, those interested, voluntary and open
Time Scale	Full time and Primary activity	Part time and Secondary activity of participants
Relevance	Separate form life, In special institution, In sole purpose buildings	Integrated with life, In the community, In all kinds of settings
Programme	Run by professionals, Excludes large parts of life	It is participatory, Includes large parts of life.
Curriculum	One kind of education for all	Education to meet learner
Methods	Teacher centered, Mainly written	Learner centered, Much is Oral
Objectives	Conformist	Promotes
Independence	Set by teachers, Competitive	Set by learners and Controlled by Learners
Orientation	Future	Present
Relationship	Hierarchical	Egalitarian believing in Equal Right
Validation	Terminal at each stage, Validated by education Professional	Continuing validated by learners

II. Extension Education

Definition and Concepts:

The term extension was first used in the United States of America in the first decade of this century to can note 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, especially those relations 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.* (Lagans. J.P.)

6. Extension education *in 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 an 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 provider services and education designed to meet the needs of the people.*

Difference between Formal Education and Extension Education

Formal Education	Extension Education
The teacher starts with theory and works up to practical	The teacher (Extension worker) starts with practical and may take up theory later on
Students study subjects	Farmers study problems
Students must adapt themselves to the fixed curriculum offered	It has no fixed curriculum or course study and the farmers help to formulate curriculum
Authority rests with the teacher	Authority tests with the farmers
Class attendance is compulsory	Participation is voluntary
Teacher instructs the student	Teaching is also through local leaders
Teaching is only through instructors	Teaching is also through local leaders
Teaching is mainly vertical	Teaching is mainly horizontal
The teacher has more or less homogeneous audience	The teacher has a large and heterogeneous audience
It is rigid	It is flexible
It has all pre-planned programme	It has freedom to develop programme
It is more theoretical	It is more practical and intended for immediate application in the solution of problem

Scope of Extension Education

Extension appears to have unlimited scope in situations where there is need for creating awareness amongst the people and changing their behaviour by informing and educating them.

Kelsey and Hearne (1967) identified nine areas of programme emphasis, which indicate the scope of agricultural extension.

1. Efficiency in agricultural production.
2. Efficiency in marketing, distribution and utilization.
3. Conservation, development and use of natural resources.
4. Management on the farm and in the home.
5. Family living.
6. Youth development.
7. Leadership development.
8. Community development and rural area development.
9. Public affairs

Extension is an integral part of agricultural and rural development programmes in India. The progress in production which has been achieved in agriculture, horticulture, animal husbandry, veterinary, fishery, social forestry, sericulture etc., may be thought of as proportional to the strength of extension service of the relevant government departments.

The following statements will further amplify the **scope of extension**.

1. Extension is fundamentally a system of out-of-school education for dults and youths alike. It is a system where people are *motivated* through a proper approach to help them by *applying science* in their daily lives, in farming, home making and community living.
2. Extension is education for *all* village people.
3. Extension is bringing about *desirable changes* in the knowledge, attitudes and skills of people.
4. Extension is *helping people to help themselves.*
5. Extension is working *with* men and women, boys and girls, to answer their *felt needs* and wants.
6. Extension is teaching through *learning by doing* and *seeing is believing.*
7. Extension is working in harmony with the *culture* of the people.
8. Extension is a *two-way channel*; it brings scientific information to village people and it also takes the problems of the village people to the scientific institutes for solution.
9. Extension is *working together* (in groups) to expand the welfare and happiness of the people.
10. Extension is development of *individuals* in their day-to-day living, development of their *leaders*, their *society* and their *world* as a whole.

Objectives of Extension Education

The objectives of extension education are the expression of the ends forwards which our efforts are directed. In other words, an objective means a direction of movement before, starting any programme, its objectives must be clearly stated, so that one knows where to go and what is to be achieved.

The objectives should be such which provide night direction to the large number of people to set a direction and travel the distance between theory and practice.

Extension education objectives:

1. The basic objectives of the extension education are the overall development of the rural people.
2. To bring about desirable changes in the human behavior, which includes change in knowledge, skill and attitude?
3. The dissemination of useful and practical information relating to agriculture.
4. To make the people aware that agriculture is a profit table profession.
5. To create an environment for rural people so that they can show their talent, leadership and efficiency.
6. To provide appropriate solution of the farmer's problems.
7. To bring the scientist closer to the farmers.

Principles of Extension Education

Principles are the fundamental laws and rules discovered by educational researches and proven by years of experiences that now serve as guide lines for educational endeavors which necessary for an extension worker. Some of this related to agricultural extension is given here.

1. Principle of Interest and Needs: The rural people should voluntarily participate in the extension work. Extension work must be based on the needs and interests of the people. These interest and needs differ from individual to individual, from village to village, form block to block and form state to state and therefore there cannot be one programmes for all people.

2. Principle of Cultural Difference:

The educational methods should be in line with the culture of the people in order to make extension education effective. Extension work is based on the cultural background of the people with whom the work is done. Improvement can only begin form the level of the extension worker has to know the level of the knowledge and the skills of the people methods and tools used by them, their customs, traditions, beliefs, values etc. before starting the extension programme. In' a vast country, like India different extension methods need to be used for different states, as people in these states differ in their thinking living and culture. The blueprint of the

extension programme developed for one area may not be applicable as such in another area but it can serve as a guide in similar cultural areas.

3. Principle of Cultural Change:

To change the behaviors of the people through extension education, the extension worker should gain the confidence of the rural people. It is obvious that the change agent who works personally with the villagers must know what the villagers know and what they think. They should believe that what the extension worker says has relevance to their daily life. For example, extension worker shows same demonstrations or trials on the farmer's field. He gave the information about positive and negative point of that trial and also discuss the about their difficulties with the farmers. Then the farmers that, he is doing for their welfare only. Taking the changes in the needs of the rural people into account the extension worker has to change his area of work.

4. Principle of Participation:

The participation of the people is of fundamental importance of the success of any educational endeavor. People must share in the development of a programme and must feel that it is their own programme. Good extension work helps the rural people identifying their problems and then helping them in solving these problems, people will not feel attached to the work if they are given ready-made things. Extension helps people to help themselves. Actual participation and experience of people in these programmes creates self-confidence in them and also they learn more by doing.

5. Principle of Adaptability in the Use of Teaching Methods: People differ from each other, one group differs from another group and conditions also differ from place to place. These people differ in their level of understanding and knowledge and therefore, only one extension method will not be of use in providing information to all, An extension programme should be flexible, so that necessary changes can be made whenever needed to meet the varying conditions.

No single extension teaching method is effective under all situations. Written material will be of use for those who can read it, radio programmes for those who have radio, meetings for those who can attend. Like these different situations requires difference teaching

methods. New situations also arise where a special combination of method is necessary. Research show that, the use of more than one extension method carries the message effectively to the people.

Thus the extension methods must have flexibility to be adapted to members of a community who differ in age, education, economic and social status.

6. Principle of Organization: A group of rural people in local community should sponsor extension work. The programme should fit in with the local conditions. The aim of organizing the local group is to demonstrate the value of the new practices or programs so that more people would participate. Different groups work in rural communities. The extension worker should pay attention to the needs and interests of these groups while planning extension programmes. In same places the extension programmes are thrust on the people and the imposed innovations; many times have no relevance to the interests of these small groups. Unless the farmers feel that the ideas coming to them are useful they will not come ahead to adopt them. As the buildings based on should foundation last long similarly the programmes based on the needs and interests of these small groups would give better results in extension work.

7. Principle of Leadership:

It is said that there is one leader in ten persons. Local leaders are the guardians of local thoughts and action and can be trained and developed to best serve as interpreters of new ideas to the villagers. They are the representatives of the local situation. Extension work is based on the full utilization of local leadership. The selection and training of local leaders to enable them to help to carry our extension work is essential to the success of the programme. People have more faith in local leaders and they should be used to put across a new idea so that it is accepted with the last resistance. All communities have leaders or potential leaders Extension workers and specialists should train and orient these voluntary leaders for good extension work.

8. The Whole-family Principle:

The family is the unit of any society. All the members have equal importance and they should be developing equally. Extension work is for the whole family and it should reach all the members of the

family. Extension work will have a better chance of success if the extension workers have whole-family approach, instead of separate and uninterested approach. There should be place for the farer, his wife and children in the programmes. Such programme will be useful and popular. Any innovation liked by male member of the family but did not like by other, then decision of adoption may affected.

9. Principle of Satisfaction: The end product of the efforts of extension teaching is the satisfaction that comes to the farmer his wife or youngsters as the result of solving a problem, meeting a need, acquiring a new skill or some other changes in behavior. If the peoples are not satisfied by participating in democratic society's people cannot be made to move like machines. They continue the things only when they get satisfaction through these innovations. Satisfaction is the key to success in extension work. "A satisfied customer is the best advertisement".

10. Principle of Evaluation:

Extension is based upon the methods of science and it needs constant evaluation. It is necessary to determine the teaching results in an unbiased way. For this it is necessary to review the development made so far and see whether the extension work is proceeding in the right direction. If it is not, then it is necessary to take corrective measures. Extension work is educational in nature and therefore, its effectiveness should be measured by measuring the changes in people resulting from the teaching process. It is no longer enough to have only plans and methods but it is necessary to determine the teaching results by scientific way. The results of such evolutions would help the extension workers in improving the quality of the programmes in the future.

11. Principle of Applied Science and Democracy:

Applied agricultural science is not a one-way process. The problem of the people is taken to the scientists who do the experimentation necessary to find out the solution. The extension worker transmits the findings of the laboratories to the farmers, but the farmer has the freedom to decide the adoption or rejection of the innovation. In democracy, freedom of thought and the unbiased and objective approach of the scientist, establish facts used in the solution of problem. But farm families can voluntarily adopt these facts to satisfy their own needs.

12. Principle of Trained Specialists:

Extension is the bridge between scientists and farmers. It is very difficult for a multipurpose extension worker to keep himself abreast with all the latest findings of research in all the branches of science. If there are no trained cannot thrive. These specialists have the responsibility of solving the problems of the extension workers in their subject. The subject matter specialist should have a broad outlook and he should know other subject matter fields related to family problems thereby concentrating on the welfare of the whole family and making his special.

13. Principle of Co-operation: Extension programmes are for the people by the people. The idea behind the extension work is the coming together of the rural people and the extension workers for social upliftment. The extension programmes should be the people's programme with government aid. Most members of the village community will willingly co-operative in carrying out a project. All should co-operate and help each other for this task of social upliftment. Principle of learning by doing In extension work, farmers should be encouraged to learn new things by doing and buy to believe on innovations or new ideas, until they see the results with their own eyes. So that extension workers have to develop their faith. The motive for improvement must come from the people, and they must practice the new ideas by actually doing them. It is learning by doing, which is most effective in changing people's behavior and developing the confidence to use the new methods in future.

Philosophy of Extension

Philosophy is the pursuit of wisdom, a body of general principles or laws of a field of knowledge. Philosophy of a particular discipline would furnish the principles or guidelines with which to shape or mould the programmes or activities relating to that discipline.

The philosophy of extension work is based on the importance of an individual in the promotion of progress for rural people and for the nation. Extension Educators should work with people to help them, develop themselves and achieve superior well-being.

The basic philosophy of extension work that is directed at conversion of the whole man determines the approach that must be adopted for its implementation. Compulsion or even a beneficent act does not necessarily improve the man. The only way to secure cooperation of a person for betterment is to educate him. Therefore the primary aim is to transform the

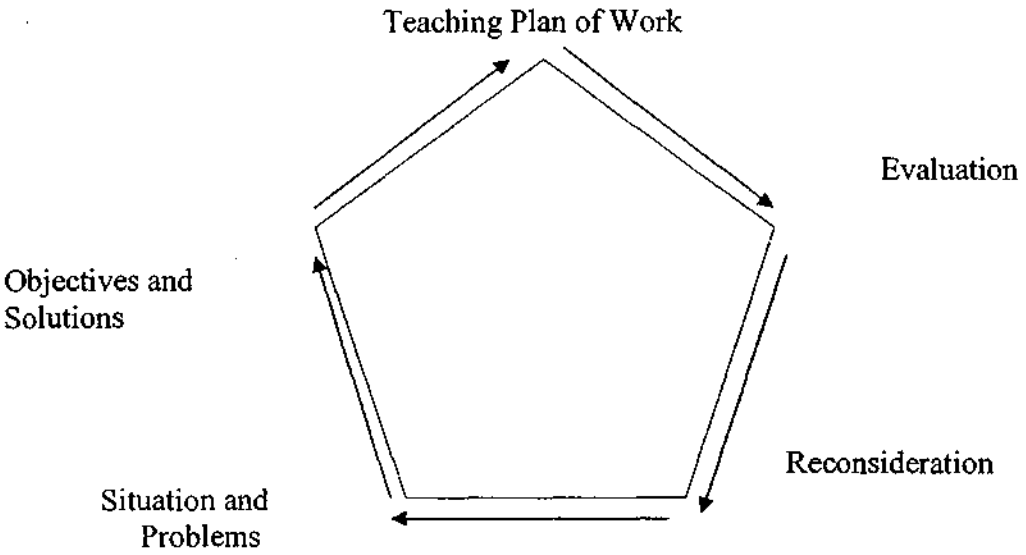
people by bringing about desired changes in their knowledge, attitude and skills.

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 furnishing the inspiration, supplying specific advice the 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 launch forth to achieve their objectives. Sound extension philosophy is always looking ahead.

Extension Educational Process

An effective extension educational programme involves five essential and interrelated steps. This concept of the extension educational process is intended only to clarify the steps necessary in carrying out a planned educational effort. It does not imply that these steps are definitely separate from each other. Experience shows that planning, teaching and evaluation take place continuously, in varying degrees, throughout all phases of extension activities.

Concept of Extension Educational process



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.

The responses obtained are to be analyzed with the local people to identify the problems and resources available in the community. For example, after a survey in a community and analysis of the data, the problem was identified as low income of the farm family from their crop production enterprise.

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 behavioural changes in people as well as economic and social outcomes desired.

In the example, the problem was identified as low income from the crop production enterprise. A deeper probe into the date revealed that low income was due to low yield of crops, which was attributed to the use of local seeds with low yield potential, application of little fertilizer and lack of protection measures. By taking into consideration the capacity and competency of the people in the community and the availability of resources, the objective was set up to increase the crop yield by 20 per cent within a certain period of time. It was estimated that the increased yield shall bring increased income, which shall enhance the family welfare.

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.

Based on the problems identified in the particular example, technologies like use of HYV seeds, application of fertilizer and plant protection chemicals were selected as teaching content.

Result demonstration, method demonstration, farmers' training and farm publications were chosen as teaching methods, and tape recorder and slides were selected as teaching 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 behavior should be collected, which shall not only provide a measure of success, but shall also indicate the deficiencies, if any. In the example, the re-survey after the fixed period of time, indicated that the crop yield had increased by 10 per cent. It, therefore, indicated that there was a gap of 10 per cent in crop yield in comparison to the target (objective) of 20 per cent fixed earlier. The re-survey also indicated that there had been two important deficiencies in carrying out the extension educational program, such as, there was lack of proper water management and the farmers could not apply the fertilizer and plant protection chemicals as per recommendation due to lack of funds.

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.

After re-consideration of the results of evaluation with the people, the following teaching objectives were again set up. For example, they were, training the farmers on proper water management practices and putting up demonstrations on water management. The people were also advised to contact the banks for obtaining production credit in time to purchase critical inputs.

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.

EXTENSION PROGRAMME PLANNING

DEFINITION

Programme is proclamation, prospectus, listing of events to be done in chronological fashion.

Planning is designing a course of action to achieve desired ends.

Planning is a process, which involves studying the past, and present in order to forecast the future and in the light of that forecast determining the goals to be achieved and what must be done to reach them.

Project is a specification of work to be done or procedure to be followed in order to accomplish a particular object.

Extension Programme is a statement of situation, objectives, problems and solutions.

Programme Planning is a decision making process involving critical analysis of the existing situation and the problems, evaluation of the various alternatives to solve these problems and the selection of the relevant ones, giving necessary priorities based upon local needs and resources by the cooperative efforts of the people both official and non-official with a view to facilitate the individual and community growth and development.

Programme Planning is a continues series of activities operations leading to the development of a definite plan of action to accomplish particular objectives.

PRINCIPLES OF PROGRAMME PLANNING

Principals are the fundamental truths and settled rules of action. There are some basic principals which are generally applicable before starting any extension programme. These are as follows:

1. Programme should be based on felt needs of people.
2. Objectives of the programme should have clarity and meaning
3. Programmes should be based on an analysis of the past experience, present situation and future needs.
4. Programme should have permanence with flexibility.
5. Has balance with emphasis.
6. Has definite plan of work.
7. Is a continuous process.
8. Is a teaching process
9. Is a co-ordinating process.
10. Provides for evaluation of results and reconsideration of programmes.
11. All concerning people must be given a summary of the programme in a written proforma.

STEPS IN EXTENSION PROGRAMME PLANNING PROCESS

1. Collection of facts

It is the starting point of programme planning process. Pertinent data may be collected from the available records and survey of the area. Information relating to the people, their enterprises, levels of technology,

facilities and constraints, values etc. relevant to programme building may be collected. Information may also be collected from Panchayats, Cooperatives and other organizations in the area.

2. Analysis of situation

The data and information collected are then analyzed with the local people. This shall help in understanding the situation in its proper perspective.

3. Identification of problems

A proper analysis and interpretation of the data shall help in correctly identifying the problems. There may be many problems, but only the urgent and significant ones, which may be solved with the available resources and within the limits of time, should be selected. Selections of a large number of problems, which cannot be properly managed, lead to a failure of the programme and generate frustration among the people.

4. Determination of objectives and goals

The objectives are then set forth on the basis of the significant needs identified. The objectives should be direct and stated in clear terms.

To make the objectives realistic and actionable, there is need to state them in terms of specific goals. In the determination of goals it may be necessary to again go through the data and information analyzed; to find out what could actually be done in the existing situation, with the available resources and time, which will be compatible and with which the people shall cooperate. It is necessary to discuss with the local people and local institutions, which shall also legitimize the programme planning process.

5. Developing plan of work and calendar of operations

The plan of work should be in written form and shall indicate who shall do what job i.e. what the change agent system and the client system shall do; which institutions, organizations, service departments shall be involved; what will be the financial requirement and how it shall be met; what arrangements shall be made for marketing of the produce, training of the farmers and so on. The plan should have all the essential details and no important point should be left out.

The calendar of operations shall be prepared on the basis of the plan of work and shall specify when a particular work shall be done, preferably mentioning date and time; how much quantity of different inputs including credit shall be required and when these must be made available; when, where and for how many days the farmers and farm women shall be trained, who are the specialists to be involved in training and preparing the handouts, when the publications shall be ready for distribution etc. That is, the calendar of operations shall specifically state how and when all the significant activities shall be performed. This should be at least for one season or for a period of one year. In that case, they may be termed as 'seasonal plan' or 'annual plan'.

6. Follow through plan of work and calendar of operations

This is not a routine type of work as many people may think. Training of participants, communication of information, conducting method demonstrations, making regular visits and monitoring are some of the important functions the extension agent shall perform at this stage. The work shall include solving unforeseen problems and taking corrective steps where needed. The performance of the extension agent and the organizational support received at this stage may make the difference between success or failure of a programme. Obtaining feed back information

as to what is happening to the farmers after introduction of new technology is extremely important at this stage.

7. Evaluation of progress

Evaluation is the process of determining the extent to which we have been able to attain our objectives. All programmes must have an inbuilt system of evaluation to know how well the work is done. It should be a continuous process not only to measure the end result but also to ensure that all the steps are correctly followed. Evaluation may be formal or informal, depending on the importance of the programme and also on the availability of trained manpower, funds, facilities and time.

Programme evaluation involves the following three essential steps –

i) Setting up of some standards or criteria in relation to the objectives.

ii) Collection of information.

iii) Making judgment, and drawing some unbiased and valid conclusions.

8. Reconsideration and revision of the programme

On the basis of the results of evaluation, the programme should be reconsidered and revised, if needed. This reconsideration should be done not only with the participants; but also with the scientists, administrators in extension organization and local bodies like Panchayats, etc.

Reconsideration shall help in making necessary corrections and modifications in the programme. In reconsideration, emphasis should be on the removal of technical defects if any and how to obtain more cooperation and involvement of the participants and various organizations. The purpose of such an exercise is to make the extension programme more effective by removing the defects.

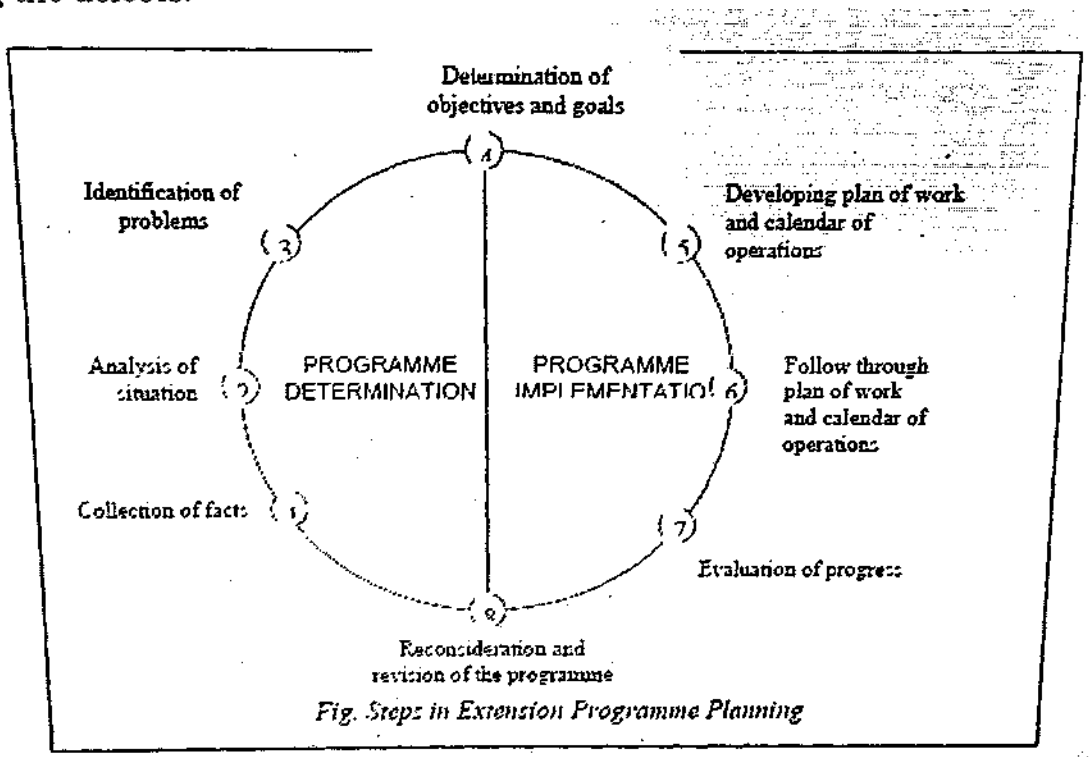


Fig. Steps in Extension Programme Planning

EVALUATION

MEANING

Evaluation is an activity we engage in every day because we are always making judgments relating to the value or worth of things we do or experience. For example, we are constantly evaluating the food we eat, the jobs we do, the programmes we listen to on radio, and so forth.

The following sequence of steps are usually involved in all evaluations:

1. Evaluations are usually prompted by the need to make a decision about the value or potential value of something. For example, if we are listening to a programme on the radio for entertainment, we may need to decide whether such a programme is likely to provide the type of entertainment we are looking for. Or, at the end of the programme we may want to decide whether we would listen to similar programmes in the future.

2. We define criteria as to what constitutes an entertaining programme for us (type of music, amount of certain type, etc.)

3. We make observations or collect evidence relating to the criteria (what type of music is being played and how often)

4. We form judgments relating to the value or potential value of the programme (not valuable or not likely to be valuable because the music we like is hardly being played).

In our day to day activities we may hardly be aware of these steps. However, in systematically evaluating extension programmes, explicit attention must be given to each step in the process.

DEFINITIONS

The term 'evaluation' is a derivative of the Latin word 'Valere' which means strength of. From 'Valere' comes the word 'Value' meaning worth or quality of something.

In simple words evaluation may be defined as the process or method of determining the worth or quality of something. This something in extension may be an activity, a programme, a situation, a process, a procedure, a method, an innovation, a practice, an organization, a person, a group of persons and the like.

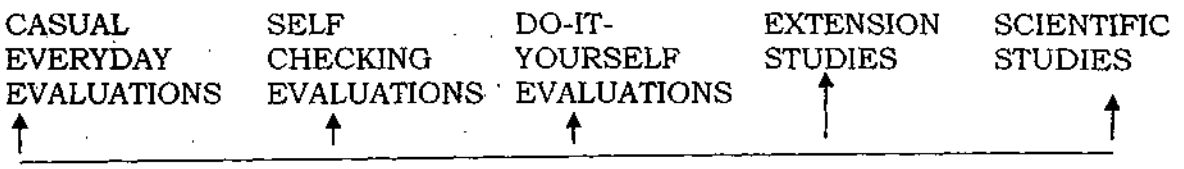
Evaluation is defined in the following manner :

- Extension evaluation can be defined as a continuous and systematic process of assessing the value or potential value of extension programmes.
- Evaluation is the process of assessing the degree through which one is achieving his objectives.
- Evaluation is the comparison of two situations before and after a developmental programme, has operated within it for a predetermined period. In other word, evaluation measures performance against a predetermined goal.

TYPES OF EVALUATION

(a) Informal and Formal Evaluations

There are several degrees of evaluation. This can be illustrated by means of a continuum. At one end of the continuum there are "casual every day evaluation" or informal evaluations, and at the opposite end, "scientific research" or formal evaluations.



It can be done so casually that we are hardly aware of doing it, such as looking out the window to decide whether or not to carry an umbrella. At the other extreme is scientific research in complicated problems to get information which people can use. Somewhere in between will fall most kinds of evaluation undertaken by extension personnel.

Casual everyday evaluations : They are like the first impressions of Extension Worker about his meeting or the umbrella decision. They are the ones we ordinarily make without much consideration of the principles of evaluation in the decisions we make about simple problems.

Self-checking evaluations : It includes further checking on our ordinary observations. It includes talking further with others, writing to others for their judgement, sending out a brief questionnaire having one filled out at a meeting and so on.

Do-it-yourself evaluations : They are more systematically done, more carefully planned and usually require some technical help. Each step in the evaluation is considered, planned and carried out with due consideration to evaluation principles.

These evaluations are not complex and involved. They are usually surveys which produce usable results and which can be easily with some training in evaluation or with some technical help.

Extension studies : These are more involved and complicated to plan and carry out than any of the preceding locations on the scale. They are broader in scope. They require greater attention to sound principles of scientific procedure in order to secure the accuracy needed. Theses for Master's degrees usually fall in this location.

Scientific research : it is at the "top" of the scale, involving very complex problems and techniques for getting information from which conclusions can be drawn. Long-time and experimental studies to determine cause and effect relationships are characteristics of this location. For example, atomic research, satellite research or cancer research.

(b) Formative and Summative Evaluations

Formative evaluation attempts to identify and remedy shortcomings during the developmental state of a programme. Formative evaluations are conducted before programme completion, more particularly, during programme implementation. Such evaluations provide early feedback on

programme weakness, which can be used to modify or adjust the remaining stages of a programme.

Summative evaluation assesses the worth of the final version when it is offered as an alternative to other programs. Summative evaluations are conducted after the completion of the programme to asses the accomplishments and whether intended objectives are achieved.

(c) On-going and Ex-post Evaluation

Ongoing evaluation is an action-oriented analysis of project effects and impacts, compared to anticipations, to be carried out during implementation.

Ex-post evaluation would resume this effort several years after completion of the investment, to review comprehensively the experience and impact of a project as a basis for future policy formulation and project design.

ADVANTAGES OF EVALUATION

1. It helps to establish a bench mark - the situation at the start of the programme
2. It shows how far our plans have progressed.
3. It shows whether we are proceeding in the right direction.
4. It indicates effectiveness of a programme.
5. It helps to locate strong and weak points in any programme.
6. It improves our skills in working with the people.
7. It helps to determine priorities for activities in plan of work.
8. It brings confidence and satisfaction to our work.

DIFFERENCE BETWEEN MONITORING AND EVALUATION

MONITORING	EVALUATION
Continuous : starts and ends with a programme	One shot operation; at a point of time (Usually after completion or mid way of a programme)
Required for immediate use and mid course correction	Used for future planning
Done by implementing agency	Usually by outside agency
Quick but covers all units	In-depth; covers a sample
Correcting/ managing process	Learning process
Symptomatic; early warning system	Diagnostic

broad based re-organization and mobilization of rural masses in order to enhance their capacity to cope effectively with the daily task of their lives and with changes consequent upon this. According to the World Bank Rural Development must be clearly designed to increase production. It recognizes that improved food supplies and nutrition, together with basic services, such as health and education, not only directly improve the physical well-being and quality of life of the rural poor, but can also indirectly enhance their productivity and their ability to contribute to the national economy.

Rural Development ensures the modernization of the rural society and the transition from its traditional isolation to integration with the national economy. It is concerned with increased agricultural production for urban and international markets. This is essential so as to generate foreign exchange, and to attract revenue to finance public and private consumption and investment. In order to encourage increased production rural development may offer a package of inputs and welfare services for the rural masses. Such inputs and welfare services include physical inputs (such as the provision of feeder roads, water and electrification), social inputs—(namely health and educational facilities) and institutional inputs such as credit facilities, agricultural research facilities, rural expansion services among others.

Objective of Rural Development

The main objective of the Rural Development is improving the living standards of rural people by utilizing the easily available natural and human resources. The other objectives of rural development programmers are as follow:

1. Development of agriculture and allied activities.
2. Development of village and cottage industries and handicrafts.
3. Development of socio-economic infrastructure which includes setting up of rural banks, co-operatives, schools etc.
4. Development of community services and facilities i.e. drinking water, electricity, rural roads, health services etc.
5. Development of Human resource mobilization.

Concept, meaning and definition

-Rural development may be defined as overall development of rural areas to improve the quality of life of rural people. It is an integrated process, which includes social, economical, political and spiritual development of the poorer sections of the society.

-Rural development can be defined as, helping rural people set the priorities in their own communities through effective and democratic bodies, by providing the local capacity; investment in basic infrastructure and social services, justice, equity and security, dealing with the injustices of the past and ensuring safety and security of the rural population, especially that of women.

-According to **Robert chambers**, rural development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves, and their children more of what they want and need. It involves helping the poorest among those who seek a livelihood in the rural areas to demand and control more of the benefits of rural development. The group includes small scale farmers, tenants and the landless.

The meaning of rural development has been the subject of much debate and little agreement. The definition of rural development varies from one point of view to the other. The definition or rural development may be centered on income criterion in which the concept is made to address the problem of rural poverty. Rural development may also be seen as an ideology and a practice. It may mean planned change by public agencies based outside the rural areas such as the national Government and International organization; It may also be the bringing of the countryside into an active state, as well as the transformation of the inferior nature of the country side into something more superior in terms of activities. Rural development as the improvement in the living standard of the rural dwellers by engaging them in productive activities such as the establishment of rural industries that will increase their income. It is seen by these scholars as a means of raising the sustainable living of the rural poor by giving them the opportunity to develop their full potentials. Rural development can be distinguished from agricultural development which it entails and transcends. In essence Rural Development may imply a

Importance of Rural Development

Improvement in the quality of life of rural people is the important agenda of rural development programme. In India – a country where the number of people living in rural areas, rural development programme is necessary aspect.

Rural development implies both the economic betterment of people as well as greater social transformation. The basic objective of all rural development endeavors / programmes has been the welfare of the millions. In order to achieve this planned attempts have been made to eliminate poverty, ignorance and inequality of opportunities. A wide spectrum of programmes has been undertaken so far, to alleviate rural poverty and ensure improved quality of life for the rural population especially those below the poverty line. In the initial phase of planned rural development, the concentration was on sectors of agriculture industry, communication, education and health. The Ministry of Rural Development places importance now on health, education, drinking water, housing and road so that the quality of life in rural areas improves and the fruit of economic reform are shared by all sections of the society. With time and experience, it is realized that accelerated and meaningful development can be achieved only if people of the grass root are involved, "people's participation" has become the keyword in rural development programmes. The participation of the people is necessary to provide the rural people with better prospects for economic development

Problems in Rural Development

As we know the 60-70% of rural population in India lives in primitive conditions. This sorry state exists even after 60 years of independence. So that Rural Development programmes have urgency in the present condition also.

There are many obstacles in the rural development programmes which are as under

1. In 21st Century, there is no electricity supply in many villages.
2. Now also many rural peoples using primitive methods of cooking, living and farming and they have trust on these methods.

3. By using primitive cook stoves, around 300,000 death / year takes plan due to pollution.

4. 54% of India's population is below 25 years and most of them live in rural areas with very little employment opportunities.

5. Literacy is the major problem in rural development programme.

6. The poor extension linkage causes slow growth of rural development.

7. Untrained, unskilled, inexperienced staff in extension linkage cannot provide satisfactory help to rural peoples.

8. Every one wants to go to the cities, so that rural people's remains as ignores part by the policy makers also.

9. Privatization concept is useful for rural development but, government not paying much attention to this aspect.

10. Policy makes prepared policies, programmes for betterment of rural people but, if these programmes are not implemented very well then have no used.

Extension Systems in India

A. Development Programmes of Pre-independence and Post Independence Era

The present day human institution has not developed in a day or two or in the creations of one man. They represent the cumulative fruit of the endeavor, experience, thoughtful planning and patient labours of large number of people through generations. To comprehend, understand and appreciate the present day human institutions adequately, it is necessary to have a back ground knowledge of the course of its growth and development since the roots of these institutions lie deeply buried in the past, Organized extension work in India was started during post independence the alien rule under East India Company was largely concerned with maintenance of law and order rather than development. However, concern for villagers and woes of toiling masses moved saints, sheers and social leaders to launch voluntary efforts at rural reconstruction. One can find resemblance of extension work in these endeavors of pre-independence era.

Extension efforts in Pre-independence Era

1) Sriniketan:

Early effort at rural development was initiated by Shri. Rabandranath Tagore in 1908 by establishing youth organization in the Kaligram Progana of his Zamindari, He tried to create a class of functionary workers who could learn to identify themselves with the people. In 1921 he established a Rural Reconstruction Institute at Shantiniketan in West Bengal. A group of eight villages was the centre of the programme. This project, co-incidentally, had many elements of extension education in both spirit and action. Activities like demonstration on scientific methods of agriculture, training of youths, adult education and health co-operatives were important aspects of the work aimed to make a group of villages self-reliant. This was a very comprehensive programme combining culture, health, education and economic aspects of village life together. Concept of village level workers and regeneration of village organization were put to work. This project was closely guided by Mr. Leonard Elmhirst, an Englishman trained in economics from USA.

Objectives of the Programme:

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 and to improve village sanitation.

These objectives were desired to be achieved by creating a spirit of self-help, developing village leadership, organizing village scouts called Brati Balika, establishing training centers for handicrafts and establishing a demonstration centre at Shantiniketan.

These demonstration centers conducted demonstration or farmer's holding for improved practices. Under this programmes establishment of dairy to supply pure milk and better animals to the farmers poultry farm for development of farmers. The students and worker of the institute were provided facilities for training in tanning, pottery, embroidery tailoring etc. This institute also had a mobile library and runs night schools film shows in the rural areas.

Though the institute could not get much help from the government it could not conduct research work on the lines initially planned by R. N. Tagore and so its work remained limited to the eight villages only. But in the course of history, the Government of Independence India did recognize it as an important pioneering centre of extension research in India.

2) Marthandam:

The work was commenced by Dr. Spencer Hatch an American Agricultural expert in Travancore under the auspicious of young Men's Christian Association (YMCA) in 1921.

The aim of the project was to bring more abundant life for rural people. It was intended to symbolize the three-fold development, not only spiritual, mental and physical but also economic and social.

The essential technique of the centre was 'Self-help with intimate expert counsel'. From the demonstration centre at Marthandam, about hundred villages were covered through Y.M.C.A. centers in villages.

The extension secretary was appointed supervise the activities of the group. Marthandam was in a strategic position to serve the villages.

It kept prize bulls and goats, model bee-lives, demonstration plots for improving grain and vegetable seeds, poultry runs with prize laying-hens, a

weaving shed, etc. Inside the centre, there was equipment like honey extractors, health charts and the items needed for other cottage vocations.

At the centre, cottage vocations were taught and agricultural implements tested. The emphasis throughout was on self-help and co-operation.

The successful output of this project was the Egg-selling Club. In 1939 which became a self governing body. Another co-operative society was honey club, where the villagers were taught the use of modern bee-hives and extracted honey scientifically. The honey was cured and marketed co-operatively.

There were Bull clubs, weaver's blub also. The activities conducted at centre could meet the mental, physical and spiritual needs of the villagers. The main shortcomings of the project were inadequate funds and governmental help. The activities were mainly organized the Marthandam and the village workers did not stay in villages. The religious bias of the institution was also a major hindrance in its activities.

3) Gurgaon Experiment:

Rural upliftment movement on a mass scale was first started by Mr. F. L. Brayne, Deputy Commissioner in the Gurgaon district of Punjab state. He was prompted by the backwardness, poverty and misery of the people. A village guide had been posted to act as a channel through which the advice of the experts in various departments could be passed on to the villagers. The programme of introducing improved seeds, implements, the methods of cultivation etc. was started throughout the district. As the village guides were not technical men, very little permanent value was achieved in fact. The project could not develop leadership in the villages that would continue work when the village guides had left the villages.

The work again gathered momentum, after 1933, where Mr. Brayne was appointed Commission of Rural Reconstruction in the Punjab. 1935-36. Government of India granted Rs.1 crore for various rural works which acted as a stimulus. Nevertheless the project could not make much headway ass the local talent was not utilized for development process. Most of the work done by exercising authority over the people rather than by voluntary participation of local people.

4. Firka Development Project:

This project was government sponsored and aided at the attainment of the Gandhian ideal of Gram Swaraj by bringing about not only educational, economic, sanitary and other improvements in villages, but also by making the people self-confident. The scheme was launched in 1946 in 34 Firkas (group of 5 villages) throughout the state, and on April 1, 1950, it was extended to another 50 additional Firkas at the rate of two Firkas for each state. The selection of the Firkas was based on general backwardness of area and the possibilities for initiating the production of handloom cloth and other cottage industries to give a encouragement to Rural Reconstruction.

This scheme was aimed at **attacking the problem of rural people as well as short term plans for the development of rural communication, water supply, formation of panchayats, organization of co-operatives and sanitation programme.** In long term plans, to make the area self-sufficient through agricultural, irrigational and livestock improvements and the development of Khadi and other Cottage Industries. The Collector was primarily was primarily responsible to see the working of the scheme in the district. Then he was assisted by rural welfare officer of the rank of Naib Tahsildar. He was put in charge of 2-3 selected firkas. Each Firkas was divided into 5 to 10 group of villages which were put in the charge of Gram Sevaks who were of the rank of Revenue Inspecrtors. Each Firka or group of Firka was provided with special staff like agricultural field men, administrative officers, Mistries, P. W. D. supervisors and minor irrigation overseers. To associate the people with the implementation of the programme, Development committees, consisting of officials and non-officials, were constituted in each Firka. At the state level, there was a State Rural Welfare Board comprising the heads of the Departments and influential and constructive social workers. For stimulating healthy competition between the official and non-official agencies, the Government of Madras decided to entrust the development schemes to non-official agencies were selected and paid grants for doing Firka development of :- a) Rural Reconstruction, b) Drinking water facilities, c) Sanitation d) Agriculture and Khadi and other village industries. At the end it was realized that these efforts were restricted in scope and

lacked co-ordination. There was lack of direction, support and encouragement from the central authority. However, it was provide that no extension programme which is implemented without the help and co-operation of local people could continue for long and have a desired impact on the Rural Reconstruction.

B. Developmental Programmes of Post-independence Era

1. Etawah-Pilot Project:

The ideal of this project was conceived and born in 1947. Actually this projected was put into action in September, 1948 with headquarter a Mahewa village about 17 miles from Etawab (U. P.) First 64 villages which were then increased to 97, were covered under it. Lt. Col. Albert Maya was the originator of this project. He started this project with the aim of introducing work on the rural reconstruction front.

The Government of U.P. helped him in setting up machinery at district level and with extra staff for the project. The point 4-programme of America also provided finances.

This project had a widespread effect on educating the villagers and broadening their mental horizons. The experiment proved not only that the material was moldable, but that the saying that the villager is ignorant, conservation and incapable of improvement was an outmoded one. The project handled the rural problem by Efforts to broaden the mental horizon of the villagers so that he might accept new and tested ideas which might then become self-generating and self-perpetuating Dealing with the villager's land, his tools and his surroundings. The method of approach used under this project was educative and persuasive rather than coercive. For getting faith and confidence of village people, it was essential to extension worker to live in the village and prove themselves as friend of rural people. The project started as a pilot project for introduction of improved agricultural technology. It also included general awakening of all round village-upliftment activity, so that the panchayats get on a sounder-footing. The most effective achievement of this project was that the entire area was under improved wheat crops. The area under vegetables was extended and diseases like Rinderpest and Hemorrhagic Septicemia controlled. The other programmes taken on were the construction of roads, soak pit, adoption of improved agricultural practices etc. In this project, all round development

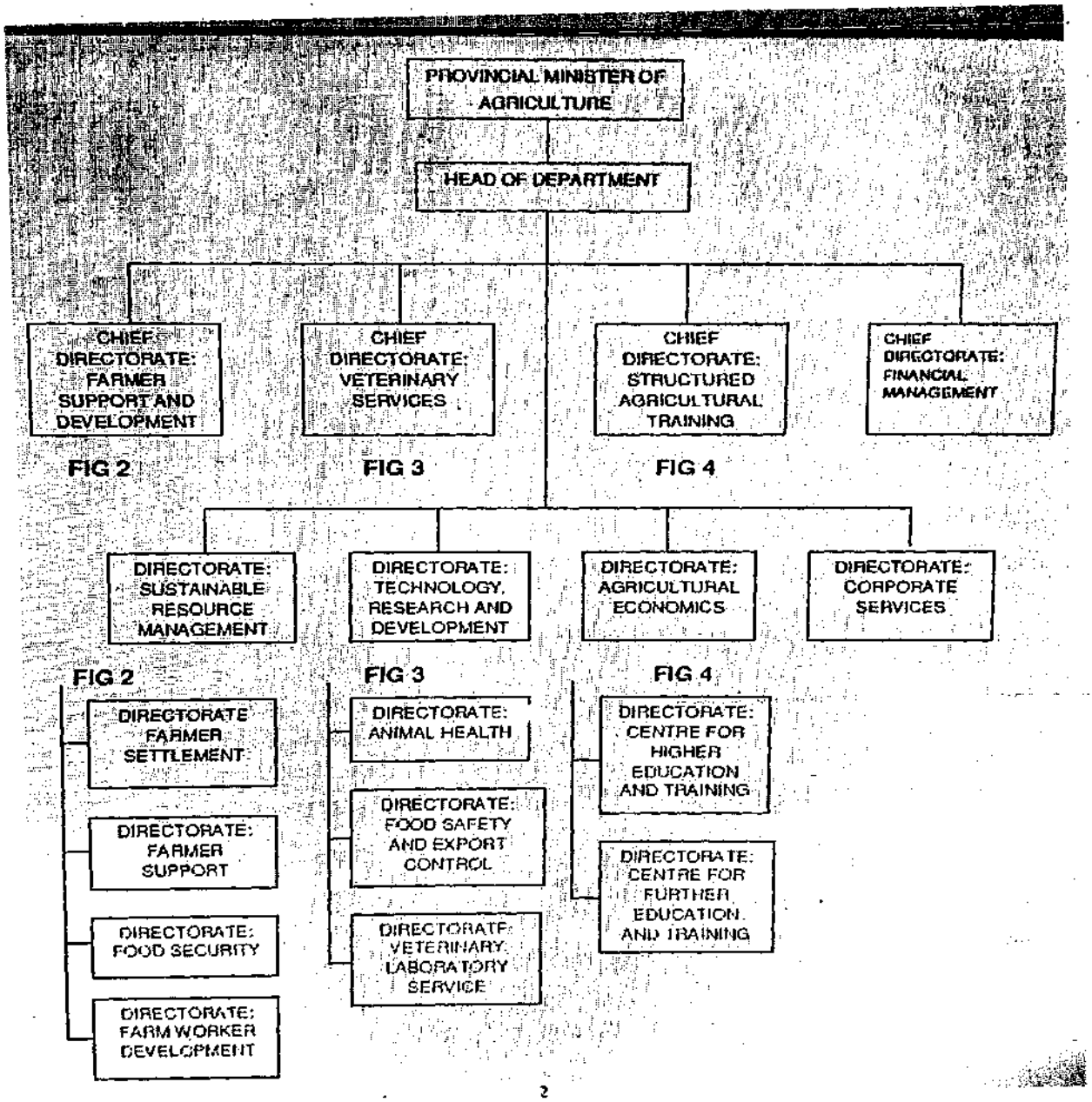
in the village life, in terms of social, economic, health and hygiene etc. were reported form the area.

2. Nelokheri Experiment:

Nelokheri was the part of State of Punjab and witness of displacement and destitution due to partition. It was started to rehabilitate 7000 displaced persons from Pakistan and later integrated with the 100 surroundings villages into what came to be a rural-cum-urban township. It was built round the vocational training centre that was transferred from Kurukshetra, in July 1948 to the 1100 acres of swampy land on the Delhi-Ambala highway. The central figure of this project was Shri. S. K. Dey, later Union Minister for Communal Development and Co-operatives up to 1965. This scheme was called urban township in all the essential requirements of life, The colony has school, an agricultural farm, polytechnic training centre, dairy, poultry farm, piggery farm, horticulture, garden, printing press, garment factory, engineering workshop, soap factory and so on. This was probably as ideal experiment which provides to be comparatively more successful addressing the immediate problems of providing help to the displace people of Punjab.

DEPARTMENT OF AGRICULTURE

1. **Structure of the Department**



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2. Functions of the Department

To promote agriculture in the Western Cape·

DIRECTORATE: SUSTAINABLE RESOURCE MANAGEMENT

1. Promotion of resource management
2. Development of implements and effective water utilisation methods

DIRECTORATE: TECHNOLOGY, RESEARCH AND DEVELOPMENT

1. Manage research services
2. Manage infrastructure services
3. Manage integrated information services

DIRECTORATE: AGRICULTURE ECONOMICS

1. Enhancement of the competitiveness of the agricultural and agri-business sector
2. Provision of agricultural economic intelligence for effective decision-making in the agricultural and agri-business sector
3. Support of AgriBEE in the Western Cape

CHIEF DIRECTORATE: FARMER SUPPORT AND DEVELOPMENT

1. Promotion of farmer settlement
2. Provision of farmer support
3. Promotion of food security
4. Promotion of farm worker development
5. Rendering of an advisory support service

DIRECTORATE: FARMER SETTLEMENT

1. Management of the farmer settlement programme
2. Co-ordination of activities in the Overberg and Boland municipal districts with regard to farmer support and development

DIRECTORATE: FARMER SUPPORT

1. Management of the farmer support programme
2. Co-ordination of activities in the Eden and Central Karoo municipal districts with regard to farmer support and development

DIRECTORATE: FOOD SECURITY

1. Management of the food security programme
2. Co-ordination of activities in the Eden and Central Karoo municipal districts with regard to farmer support and development

DIRECTORATE: FARM WORKER DEVELOPMENT

1. Co-ordination of interventions of government departments towards farm worker development
2. Facilitation of training processes :
3. Assessment of training processes
4. Preparation of business plans and budgets for training programs
5. Management of donor funds
6. Monitoring of training interventions
7. Maintenance of a comprehensive database

CHIEF DIRECTORATE: VETERINARY SERVICES

1. Maintenance of animal disease risk
2. Management of food safety
3. Management of export matters
4. Rendering of veterinary laboratory services
5. Rendering of a support service

DIRECTORATE: ANIMAL HEALTH

1. Enhance the overall effectiveness of animal disease surveillance, prevention and control
2. Ensure the rendering of services with regard to animal disease surveillance, prevention and control in the Western Cape Province

DIRECTORATE: FOOD SAFETY AND EXPORT CONTROL

1. Manage food safety
2. Manage export control

DIRECTORATE: VETERINARY LABORATORY SERVICES

1. Rendering of veterinary laboratory services
2. Rendering of veterinary laboratory service in Oudtshoorn
3. Rendering of veterinary laboratory service in Beaufort West

4. Doing applied research for the veterinary laboratory
5. Rendering of a quality control service
6. Rendering of an administrative support service

CHIEF DIRECTORATE: STRUCTURED AGRICULTURAL TRAINING

1. Determination of strategic direction of agricultural training in the Western Cape
2. Execution of policy regarding agricultural training
3. Rendering of agricultural training
4. Marketing of agricultural training
5. Co-ordination of agricultural training in the Western Cape
6. Conclusion of (service level) agreements with the Department of Education and other institutions
7. Rendering of an administration and support service

DIRECTORATE: CENTRE FOR HIGHER EDUCATION AND TRAINING

1. Provision of pomology training
2. Provision of vegetable and agronomy training
3. Provision of viticulture and oenology training
4. Provision of animal production training
5. Provision of agriculture management, agri-tourism and extension training
6. Delivery of an administrative support service

DIRECTORATE: CENTRE FOR FURTHER EDUCATION AND TRAINING

1. Provision of basic level agricultural training
2. Facilitation of comprehensive training in regions

DIRECTORATE: ADMINISTRATION AND SUPPORT SERVICES

1. Rendering of a student administration service
2. Rendering of non-curricular services
3. Rendering of a college support service

CHIEF DIRECTORATE: FINANCIAL MANAGEMENT

1. Ensure effective budget management
2. Manage the departmental accounting service
3. Ensure effective supply chain management
4. Ensure effective internal control

New trends in agricultural extension: Meaning , Objectives, Salient features

- Privatization in extension,
- Market-led extension,

Farmer-led extension,

ICT in Extension education - Cyber extension/ e-extension

Indian agriculture had been on traditional lines till the 60s. The green revolution gave a sudden boost to the production and productivity of major cereals in the assured irrigated areas. Quick dissemination of technological information from the National Agricultural Research system to the farmers

in the field and reporting of farmer's feedback to the research system were the critical inputs in transfer of agricultural technology. The information and knowledge dissemination methods during the last 50 years have mainly been conventional. This approach has not been able to reach majority of the farmers who are spread across the remote parts of the country. This gap remains a challenge for the extension system even today. To reach millions of farmers, spread over 500 districts and over 6,00,000 villages is a Herculean task. The diversified agro ecological situations in the knowledge aggravate this challenge. Farmer's needs are much more diversified and the knowledge required to address them is beyond the capacity of the grassroots level extension functionaries.

Today, it is possible to find a solution to this situation by using the potential of Internet based technologies to meet the location specific information needs of the farmers. Information and communication networks are expanding very fast. To bridge India's widening digital divide, the government is focussing on increasing physical access to computers connected to the Internet.

At the present situation, Indian farmers need to be updated with the latest knowledge about new techniques of farming, new cultivars, farm machinery, market and trade situation. in the light of fast changing scenario, the extension services have to face entirely changed and multifaceted responsibility with respect to the advice to be provided with the involvement of community stakeholders and the use of different sources of information, advice and education, it also serves its responsibilities to facilitate marketing, micro-enterprise development and organization of farmer's associations. Now, as the extension services have become more diversified, the demand on the extension functionaries is growing as the agriculture has become more specialized, commercial and integrated with other enterprises like livestock, horticulture and agro-forestry. Thus, extension needs to be more diversified, more technology intensive and more demand driven. This requires the extension worker to be a master of so many trades, which is virtually impossible. The use of recent tools of communication can help the extension workers to be more effective in meeting farmer's information need. It is true that the villagers still have difficulty in accessing crucial information in order to make timely decision. It is essential that information availability is demand driven rather than supply driven. The challenge is not only to improve the communication accessibility of the villagers but also be improving its relevance to local development and needs. Cyber extension could be a better solution at this juncture. Before getting details about cyber extension, we should understand the Internet.

INTERNET

The Internet is a global network of computers. What make it so useful is the vast amounts of information that is stored in these computers and is

readily available in fairly organized form. And what makes it so interesting is the great numbers of people, cutting across geographical boundaries, who interact through it, using as well as providing the information it contains. It is this highly interactive nature and the ability to readily allow each and every user to be a consumer as well as a provider of information that make the internet unique as a tool in information technology (Laha, 2001, G.L. Ray)

The Internet is an electronic infrastructure, which opens a way to have intense communication between colleagues, competitors and disciples. Despite these extremes the Internet community is bound together by a framework of a computer communication, networking protocols and infrastructure. Internet is often referred to as the network of networks. The use and exchange all kind of information, in innumerable social context on the Internet. It has no definite boundaries; its limitations imposed only available software and hardware technology. It has been used exhaustively by the scientific and academic communities for many years.

Internet in India

Internet in India was available for sometime through the ERNet was made available for commercial use by VSNL since August 1995. Presently VSNL operates in seven major metros and the network is being spread day by day. The membership and networking rules are controlled by VSNL. It has its own leased lines to America where the Indian network is connected to main Internet network.

Purpose

Internet is used mainly for the following purposes.

i. To log into and browse a network system
ii. To exchange E-mail instantly with others.
iii. To find educational tools.
iv. To participate in group discussions through public news.
v. It get access to commercial information.
vi. To read about sports and leisure events.
vii. To get technical support for products we are using.
viii. To market and sell products.
ix. To distribute software.
x. To communicate or collaborate on projects.

Benefits of Internet

1. *Education*

Students, teachers and researchers are most beneficiaries of the Internet. At the touch of a key, one can access a whole range of subjects like mathematics, chemistry, engineering, physics, technology, languages, agriculture etc. One can become an expert through self-learning. The Internet is simply irresistible to the student, teacher and researcher. India can be benefited if all its schools, colleges, universities, and research institutes are on the net. Internet education can tremendously supplement the use of education for everybody even those in rural urban or semi urban

areas can access the knowledge or information that remains locked in institutions and. libraries, within and outside India. With the links between various schools, libraries, museums and laboratories students, teachers and researchers are going to have greater choice in pursuance of their education research and knowledge. The Internet has become a tool for research and a medium for interactive and collaborative learning.

2. *Publishing*

Almost all the major newspapers in the world are already on line. The Internet adds value. It would not replace newspapers but it does give up to the minute information. Internet allows you to login to watch on to the latest information news, bulletins, put out by news groups.

3. *Shopping*

Internet reduces the whole world to a virtual reality and one will get all the best information from all over the globe. Physical shopping has the opportunity to see and feel whereas the Internet does not allow that. But it helps to have a mixture of both, real and virtual shopping. Browsing through the yellow pages of Internet like 'Yahoo' and 'Soho', one can be online with any product or service that is listed on the net.

4. *Advertising*

Advertising and marketing are the most important activities of a company too. Internet's World Wide Web enables you to hop easily round the net players. The webs are the fastest growing part of the Internet and advertising and marketing are just picking up on the web. The invention of multimedia, combination of text, data, audio, video graphics, still pictures, animation and moving pictures has revolutionized advertising into a powerful marketing tool. A tool, which works better on Internet at negligible costs and adds value to the product. Advertising on web gives better financial returns than through newspapers. Internet adverting retires more number of people around the world and ensures larger volumes of interactive communication.

5. *Financial services*

Banking insurance, investments, every major financial service can be done through Internet. Online share, price information, investment tips, stock brooking services and research reports which are all down loadable at the press of a key. The transactions like tele credit card, ATM, teleban king, teleinsurance and cyber investing are taking place through Internet.

6. *Governance*

Government's major business of governance is likely to be reduced to a great extent by the use of internets NIC net extends its roots to all the districts of the country access to government information become easier and faster. Public information, which will be of use to every citizen, can be on the net. Government authenticates queries and statistics required by the citizens, budget and economic surveys were available on line. Indian budget presented every year in the Parliament is now simultaneously available on Internet. The Internet improves the quality of public administration.

7. *Careers*

Internet has unfolded a new horizon of a spectrum of career opportunities like Internet chess providers, Internet librarians, Java programmers, hardware and software providers, web spec sellers, content providers, Internet guides, Internet cops, Internet hosts. These are some of the careers. One can explore the opportunities for Internet trainers and cybercoaches, multimedia wizards, web copywriters, musical composers, web site engineers etc are the careers that the new technology can offer.

8. *Internet communication*

The most important benefit of Internet particularly from the point of view of rural and agricultural extension, communication is yet to be exploited. It provides cheap and universal access to all kinds of information available on the latest technology in the field.

E-mail: It allows the users to send messages to others. It works very much like regular postal mail. Every user on the net work has a private mail box. Ones mail is received it will be kept on the ones file until one's has decided to discard it. Each user must know the Email address to send a message. If a message is not delivered it will make every attempt to return it to the sender. It is also useful to transfer documents, obtain electronic copies of books. Subscribes to news services or to journals. It is primary communication tool in the Internet.

LISTER: It allows group of people with common interest to send messages to each other at no cost. It requires that interested people subscribe to a discussion group which is essentially a mailing list; whenever a subscriber sends a message to the LISTERV group name, the message will be sent to a name it will be redistributed among the subscribers. There are thousands of LISTERVER available on different topics such as ecology and Biosphere etc. some lists are also used for electronic journals and electronic news letters.

Usenet News Group: It is often referred to as news group. There are thousands of news groups based on the topics. Subscription to new groups is to be done something like this. First of all find out which newsgroup is available through one's system. Then determine the name of the news group make sure the spelling entered is correct and the news group make to the file. It is an interactive kind of a thing in which a user not only receives the message and can also send replies.

Telnet: It connects to remote computer locations. It offers an easy entry into the world of Gophers and WWW for those people who may otherwise have access to these tools. It is used to log in and work in a remote computer available anywhere in the world.

Information and Communication Technologies (ICTs)

Information and Communication Technologies (TCTs) are emerging as an important tool for the development of societies and have driving forces in the economies worldwide ICTs are no more confined to assist high end research and development; the new technologies have made significant

improvements in the life-styles and the efficiency levels all sectors of economy. The positive impact of ICTs is most visible in service sector, where the efficiency levels have gone very high. New businesses like 'Business Process Out- Sourcing (BPOs),' Banking and Insurance, the entertainment industry and other industries and organizations are all taking maximum advantage of the ICT revolution.

The agriculture sector is gearing itself to make optimal use of the new information and communication technologies. At the government of India level, a number of important initiatives have been taken to provide IT hardware and connectivity to all organization involved in agricultural education, research, development and dissemination. Simultaneously agricultural content development initiatives have been taking by Ministry of Agriculture, in collaboration of National Informatics Centre (NIC) to provide marketing information of various agricultural commodities to the farming community. Another content-creation and aggregation initiative is being supported by ICAR under its world. Bank aided project NAIP, wherein the Leading ICT institutions like IIT Kanpur, IIT Mumbai, IITKM, Kozikode and International Crop Research Institute for Semi-Arid Tropics (ICRISAT) have been roped in to guide National Agricultural Research System to design, development and implement knowledge management systems (KMS) in agriculture.

Cyber Extension: Use of ICTs in Agricultural Extension

The weak linkages among extension, research, marketing network and farmers limits the effectiveness of research and extension to contribute to agricultural development. The government of India has identified this problem and is addressing it through National Programmes. The emphasis on usage of vernacular press, radio and television for reaching to the farmers is being augmented with use of state-of the- art communication technologies such as Internet and satellite communication. Under the new initiative of NATP, adequate attention is being paid to provide ICT connectivity down to the Block level.

This connectivity will facilitate two-way communication among all the stakeholders in the Research-Extension-Marketing-Farmers loop. Apart from core ICT connectivity, other forms of audio and visuals communication like satellite communication (SATCOM) are also being promoted on project basis. ICTs have opened whole new set of options for the Agricultural Extension Scientists, Extension Officers in the research and extension system to improve the speed, accuracy of the communications at relatively lower costs. The ICT tools like Internet, e-mail, on-line expert systems, call centres and information portals on agricultural marketing information, packages of practices and subject specific discussion groups on internet have enhanced access of extension personnel to the latest information within and outside the country.

Communication is the central mechanism of extension process. ICTs provide new dimensions to communication as a process.

These include:

- ✓ Access to information resources of the whole world, beyond state and national boundaries (improved reach).
- ✓ Most of the time accesses free (less cost).
- ✓ Instant access to the important recourse-people and literature, Extension journals, newsletters (less time).
- ✓ Facilitates two-way communication- e-mail, chat groups, discussion forums.
- ✓ Information is available any time.
- ✓ Little or virtually no chance for information distortion, as the communication is between the user and communicator directly.
- ✓ Easy documentation as all the communication is in digital form, including e-mails, audio and video exchange.

All the above dimensions of proper use of ICTs have generated a lot of interest among the Agricultural Extension Scientists and Extension Functionaries. This whole new field of interest and application. 'Use of ICTs in Agricultural Extension' is emerging as a body of knowledge, popularly known as 'Cyber Extension'.

Cyber: According to Oxford Dictionary the word cyber means, 'relating to IT, the Internet, and virtual reality, the *cyber space.*'

The cyber space: Cyber space is the imaginary or virtual space of computers connected with each other on networks, across the globe. These computers can access information in the form of text, graphic, audio, video and animation files. Software tools on networks provide facilities to interactively access the information from connected servers. Thus the cyber space can be defined as the c imaginary space behind the interconnected telecommunications and computer networks and the virtual world.

Extension: Extension stands for 'the action or process of enlarging or extending something.' It could be extension of area, time or space.

Cyber extension: It can be defined as the 'Extension over cyber space.' As the word extension is subject-neutral, so is cyber extension. But in the applied context of agriculture, cyber extension means 'using the power of online computer networks with the help of communication channels to deliver the content in the form of text graphics, audio and video either passively or interactively to facilitate dissemination of agricultural technology.' Cyber extension includes effective use of ICTs, national and international information networks, internet, expert systems, multimedia learning systems and computer based training systems to improve information access to the farmers, extension workers, research scientists and extension managers.

Cyber Extension for Research, Extension, Communication: Need and Significance

The cyber extension is not for replacing the existing systems of communication but to provide quickest and reliable up-to-date information related to value added crops, horticultural crops, agro-industries, agri-export, contract farming, marketing, SHGs and community organizations etc from different corners of the world. Cyber extension can make agriculture a more remunerative and fruitful occupation by providing latest information. It saves time, money and efforts and reduces dependency on so many actors in the chain of extension. It can eliminate the time and distance barriers that get in the way of knowing the lasted information on any particular problem from any part of the world. One can reach any university, institution at national and international level, training and research institutions and other research stations and discuss his/her problems with experts in the field. The new technology offers new opportunities. It will add more interactivity. It will add speed. It will add two-way communication. It will widen the scope of extension; it will also improve quality. The continuing rapid development of telecommunication and computer based information technology is probably the biggest factor for change in extension, one which will facilitate and reinforce other changes. There are many possibilities for the potential applications of the technology in agricultural extension. It will bring new information services to rural areas which farmers as users will have much greater control than over current information channels. Even if every farmer does not have a computer terminal. These could become readily available at local information resource centres, with computers carrying experts systems to help farmers to make decisions. However, it will not make extension worker redundant. Rather, they will be able to concentrate on tasks and services where human interaction is essential in helping farmers individually and in small groups to diagnose problem, to interpret data, and to apply their meaning. The researchers at university now should involve the KVKs, extension functionaries, and even the farmers right from the beginning of the project. They can share their objectives, their methodology of research, methodology of analysis and the observations and intermediate results with the other stakeholders can give their feedback and their suggestions to the researchers at every stage of the experiment. In some cases, even the farmers can participate in adoptive research. The validation of research can definitely be done at an appropriate number of locations within the concerned agro-eco-zone, with the results of the same being shared among all stakeholders online, at various stages of research.

The packaging of research recommendations has to be done in more participative way with the help of ICT. The extension functionaries at district level could be taken into confidence before final packaging of the 'Practices' or 'Technologies' for each crop. The experiences and results of various trials could also be indicated in the proposed package of practices. The extension functionaries may them keep the concerned researchers informed on the

field electronically. This way the ICTs will help both the researchers and farming community talk to each other on regular basis.

Application of Cyber Extension

The concept of 'Village Information Shops' is being discussed, debated and experimented in India at various places. Experiments of Dr. M.S. Swaminathan Research Foundation, Chennai, 'Information-Villagers' of MANAGE in Ranga Reddy District (A.P.); Gyandoot.net initiative of District Dhar (M.P.); EID-Parry's Wireless in Local Loop based village kiosks in Cuddalore district (T.N.) and 'Warna Wired Villages' of National Informatics Centre (NIC) in Kolhapur-Sangli districts (M.S.) are some of the cases which provide good insight of farmers and farm-families' information needs and paying capacity. Preliminary results indicate that, 'Agricultural Extension' alone is not sufficient to sustain Information Shop at village or even at Block level.

The information supply domain has to be much larger and dynamic so as to offer value-adding information like market prices, local topical information like bus and railway timetables, weather forecasts etc. The experience of Gyandoot (Dhar) indicate that the 'Village Information Kiosk' can be self-sustainable enterprise (with a potential to provide job for two young rural people at each kiosk), if Ie-governance' services, provided are a little more exhaustive and improve their livelihoods. The 'Extension' information is very important component of the information needed at the village level. The quality and content have however, to change quite drastically to make the extension information farmer friendly.

The packaging of extension information for the 'Information Kiosk' has to be more visual, more complete (it must provide full knowledge and information about. the topic and various scenarios and options to the farmers) and should also indicate the source of information and further reference for cross checking and clarifications. This will bring in more direct communication between the farmers and researchers and will also improve the quality and language of research-extension packaging and feedback. The lessons from Pondicherry indicate that farmers seek the information on seeds and fertilizers and also on pests and diseases in groups and then they discuss the information at the 'Information Kiosks'. This implies that the information, dissemination in the connected villagers is likely to happen through the farmer's organizations, farmer internet groups and other informal groups.

Cyber Extension: The Process

The process of cyber extension needs to have a clear vision at national, state ad district levels more importantly at State Agricultural Universities and Research Institutes levels. Learning the lessons from the various experiments needs to focus on following aspects;

i. Develop state-of-a ICT infrastructure to connect key stakeholders.

ii. Creating ICT awareness in all the developmental department.

iii. Create information packaging mechanism at key participating agencies.

iv. Network with e-governance initiative of concerned state or district;
v. Create a model cell in each state to monitor the progress of cyber extension;
vi. Identify a national coordinating agency for cyber extension.

CYBER EXTENSION TOOLS

As we defined Cyber Extension as the 'Extension over Cyber Space,' all the tools of Internet used for browsing the Agricultural Information from the basket of Cyber Extension tools.

1. E-mail
2. Interactive Expert systems on crop pests and diseases.
3. Internet browsing for extension information.
4. Video conferencing
5. Call Centres; SATCOM Networks.
6. Discussion Groups and News Groups.

I. E-mail

E-mail is the most often used communication tools in new age. In. all sectors - education, business, services, e-mail has replaced letters, faxes and even telephone calls in the new generation working culture. In agriculture sector, the use of e-mail is limited by the non-availability of connectivity to the cutting-edge functionaries in the state Department of Agriculture. This limitation is being overcome very fast and most of the state governments have initiated projects to connect all their departments and also field level offices to provide on-line connectivity to the officers and staff. The mission mode projects under government of India's National e-Governance Plan also all the central government offices working under Ministry of Agriculture, are being given high-bandwidth connectivity. Once all this system is in place (which is likely to be within the 11thfive year plan itself), the e-mail should become the most powerful extension communication mechanism among the agricultural scientists, extension functionaries, agricultural processing and supply chain companies and the farmers. Even now some KVKs like Bahaleshwar (Ahmed-'nagar) and Baramati (Pune) are using e-mail mechanism highly effectively to send extension messages to innovative farmers.

2. Interactive Expert Systems on Crop Pests and Diseases

Expert systems are the programme written to solve problems or give advice in specific knowledge of a particular expert or a number of experts on crop-pests or disease is organized in a computer programme in such a way that a user (student, farmer or extension workers) can indicate the symptoms in text form, data form or digital image, the computer assists the user to diagnose the problem - the pest or disease and then depending on its extent and stage of problem suggests preventive as well as curative measures for the same. The additional information on pest life-cycle favourable conditions for their growth may also be indicated.

Expert systems can be used both in on-line and off-line mode. In on-line mode, the users can interact with the research organization expert systems to diagnose the field problems and can offer advice to farmers and fisherman. A number of ICAR institutions are working on development of crop specific expert systems to assist the field functionaries. The expert systems are thus very important tools for cyber extension.

3. Internet browsing for extension information

Browsing the World Wide Web (WWW)for the required information is the most often used 'Information Access' method on the Internet. The agricultural scientists, students, extension functionaries, traders and farmers, all can access required information in a very short time, if the same is available on the Internet. The information on crop science and package of practices is being hosted and uploaded by ICAR institutes and SAUs, and the information on government programmes, projects, and schemes is being hosted by concerned state government or central government departments or agencies. For example, all the relevant information on government of India centrally sponsored schemes on 'Support to the state extension programmes for extension' reforms,' "Mass media support to agriculture extension,' and 'Agri-clinics and Agribusiness Centres,' are available on MANAGE web site - www.manage.gov.in. The mega-portal of' dacnet.nic.in' provides information all divisions, schemes, of the Ministry of Agriculture, Govt. of India. Similarly information on major state government supported projects is available on their web-sites. This information is extremely helpful for the farmers, extension functionaries and the agricultural scientists and students.

The demand for 'prices information for the agricultural produce has been growing, as more and farmers are asking for the prices of their produce in near-by markets. A number of web-sites are providing the agricultural produce prices on on-line basis. The important websites giving the agricultural market price information are: www.agmarket.nic.in. www.agriwatch.com, www.market.ap.nic.in, www.emandi. mla.iitk.ac.in etc. Web browsing for finding the required information is growing at rural information kiosks as well.

In remote villages of Pondicherry, MSSRF has reported that a number of farmers visit the Village Information Kiosks to find see and read the Newspapers on-line.

List of Important Indian Agricultural websites

www.manage.gov.in	www.nbsslup.nic.in	www.nrcipm.org.in
www.cazri.res.in	www.ncap.res.in	www.nrcog.mah.nic.in
www.cifa.in	www.nrce.nic.in	www.nrcws.org
www.crri.nic.in	www.nrcgrapes.mah.nic.in	www.nrcsoya.com
www.cpcri.ernet.in	www.iari.res.in	www.nrc-map.org
www.nrcmashroom.org	www.nrcjowar.res.in	www.limahd.ernet.in
www.itcibd.com	www.agri.mah.nic.in	www.nird.ap.nic.in
www.emandi.mla.iitk.ac.in	www.nbfgr.res.in	www.esagu.in

www.dryland.ap.nic.in	www.iasri.res.in	www.nrccashew.org
www.nianp.nic.in	www.nbpgr.ernet.in	www.nrcaf.ernet.in
www.icar.org.in	www.iisr.nic.in	www.spcies.res.in
www.caie.nic.in	www.iihr.res.in	www.nbagr.ernet.in
www.cife.edu.in		

4. Video Conferencing

Microcomputers, cable TV, teleconferencing, teletext, and desktop publishing are all examples of advances in communication technology. Teleconferencing may be used for arranging meeting among geographically distant people to discuss some issue or to provide education. It may also be used for business and marketing. Teleconferencing is an important and modern method of extension education. The persons at different places could be connected by teleconferencing to share the issues and problems and arrive at the solution. There are different types of teleconferencing.

System types

Many teleconferencing systems with various shapes and diversified application are available in the market. However, it is important for a user to understand the basic types and various design factors that govern the applications of the system. There are three basic types, which are commonly available for the users.

Audio-conferencing: Verbal communication through a telephone with additional capacity for tele-writing to tele-copying.

Computer-conferencing: Computer-based meeting involving exchange of voice and pictures between two individuals or groups.

Video-conferencing: Exchange of video information and pictures between individuals or groups.

Video-conferencing has emerged as a form of teleconferencing and is perceived as a new, fast growing medium. It has potential of saving significantly both in terms of travel cost and time. Video conferencing is remote meeting between two or more individuals present at geographically dispersed locations. Video conferencing can be described as a method of conferencing between two or more locations where both sound and vision are conveyed electronically so as to enable simultaneous interactive communication. It can also open up new method of communication, e.g. linking many international sites simultaneously. Today, this is the new development tool in the hands of extension personnel. Video conferencing uses telecommunication of audio and video to bring people at different sites together for meeting. This can be as simple as a conversation between two people in private offices (point-to-point) or involve several sites (multi-point) with more than one person in large rooms at different sites. Besides the audio and visual transmission of people, videoconferencing can be used to share the documents, computer displayed information and white boards.

Video Conferencing Systems

In a networked environment, the videoconference can be a point-to-point or point-to-multipoint operation. In a two way configuration, different parties can hear and see each other, while in one-way videoconference the audio-visual information is transmitted from one location to a number of geographically scattered sites. Here the possibility of feedback is limited. The video-conference can also be either motion in nature, where the visual clarity of the participant's movements are conveyed, or non-motion / freeze frame conference where the individual and still pictures produced by a video camera are relayed and subsequently received one at a time in the receiving end. Among these systems, the two -way videoconference is more popular and widely used. This is helpful in training and distance education programmes involving audio-visual presentations where detailed charts, illustrations and complex diagrams can be transmitted along with narration. The recent advances in digital video compression permit the transmission of full motion video through standard telephone lines at lower cost. Moreover, the video-conferencing systems are also available in portable and desktop configurations such as picture phone, portable videophone and video PCs that occupy less space and can be used for personal video-conferencing.

If choice is made for having an Integrated Services Digital Network (ISDN) versus an Internet Protocol (IP) connection with the off-campus site, one has two issues to consider: quality and cost. In many cases, there will be additional charges (for the site one is connecting to) for ISDN. In general, there are no additional charges for IP (based on the current funding model for data connections on campus).

Although ISDN connection gives consistent quality, over the commodity Internet guaranteed bandwidth (i.e. quality) is not ensured. Therefore, a test videoconference is required well before the actual session to validate one's choice.

Why Video Conference?

Sometimes it is just not possible or practical to have a face-to-face interaction with two or more people due to constraints of time, resources and distance. In this situation, a telephone conversation or conference call may serve the purpose.

Video-conferencing adds other possible and viable alternatives when:

- ✓ A live conversation is needed.
- ✓ Visual information is an important component of the conversation.
- ✓ The parties of the conversation can't physically come to the same location, or
- ✓ The expense or time of travel is a consideration.

Client Devices of Video Conferencing

Pick the right client device, figure out Local Area Network (LAN) bandwidth requirements, nail down Wide Area Network (WAN) links, then start conferencing. Currently there are three distinct categories of clients defined primarily by usage:

Desktop: Desktop video-conferencing clients are assigned to a single user. The connectivity is over IP.

Small group: Small-group video-conferencing systems are relatively easy to configure and use. They run over ISDN or IP connections.

Large group: Provide the highest-quality video, but also come with the highest price tag. They also run over ISDN or IP.

Application of Video-conferencing in Transfer of Technology

Why Video Conference?

Video-conferencing is being used for various applications in agricultural extension. Some of them are described below:

Sometimes it is just not possible or practical to have a face-to-face interaction with two or more people due to constraints of time, resources and distance. In this situation, a telephone conversation or conference call may serve the

1. Imparting training

Regular and systematic training for extension personnel and farmers is the important component of extension system. However, inadequacy of qualified trainers and increasing cost of training may put a serious limitation on conducting training ultimately resulting in lag of transfer of technology.

II. Providing distance education

Recently the universities and educational institutions have started their distance education programmes. Instead of lectures at study centres, special lectures or practical are delivered through video-conferencing. Video-conferencing can be advantageous for the students in attending classes at distant locations. It provides quality learning to wider audience over distance via tele-lecture, tele-tutorial and tele-seminar. Moreover, it offers the institutions, learners and researchers access to global educational, cultural information and knowledge in a networked environment with limited resources.

III. Helps in agricultural communication

Collection of accurate and relevant information and its timely dissemination to the needy farmers to influence favourably the adoption behaviour of the farmers is the major function of the extension system. As a communication medium, this can help in following ways: (1) experts and extension workers reaching a large number of farmers with same or less effort, (2) quick dissemination of information, (3) information provided to the users in a manner more convenient to them.

Advantages of video-conferencing

Regardless of form and other factors, video-conferencing has many advantages.

1. It increases productivity: Video-conferencing, if used effectively, has a dramatic effect on the business or activities and the productivity. Today, video-conferencing systems transcend the simple 'talking heads' on a screen. The ability to easily share any type of information has added another

dimension to video communications, often previously not even possible in a local meeting. As a result, decisions are made faster, bringing products or services to market quicker, and enabling to stay ahead of the competitors.

2.Reduction of travel related costs

3.Reduction in time, money and labour involved in providing other communication materials and arranging extension programmes.

4. The procedures and the results of a practice could be shown.

5. Things like plants, fruits, diseases and pests could be shown in their natural form.

Limitations

1. High establishment cost and deficiency of technical and operational expertise to maintain the equipment.

2. Lack of participants' familiarity with the equipment, the medium itself and meeting skills.
3. The absence of quality of service provided virtually does not guarantee of a satisfying and successful experience.
4. Though the technology is improving, a successful video conference is dependent upon the connections and technologies at all of the participating sites, and the network infrastructure.

1. Kisan call centers and SATCOM Networks

Kisan Call Centers

The country has made great strides in the area of telecommunication resulting into a massive telecom infrastructure available in the country. Today over 5 lakh villages have telephone connections available. The country today has an impressive telecom network which could be put to effective use for delivering knowledge and information to the farming community. The agriculture extension systems, which is facing acute shortage of manpower, needs to make full use of the growing communication bandwidth to serve the farming community. Keeping in mind these resources, Department of Agriculture and Cooperation (DAC), Govt. of India has launched state-wise Kisan Call-Centre to address queries and questions raised by farmers. The concept of the Kisan Call Centres was a logical outcome of the commitment by the Government of India to leverage the ICT for overcoming the constraints of distance and time in providing new generation extension services to the farmers.

The call centers have proved to be an extremely effective mechanism for customer service support in a number of services and industries. Almost all Banks, Consumer Appliances, Manufacturing Companie~, Ap.tomobiles and Railways, etc, have made use of call centers to provide online, round the clock information services to their customers.

In India the Kisan Call Centres (KCC) were established on January 21, 2004, providing online agriculture advice and information to the farmers, across the whole country, presently using a toll free telephone number

'1800-180-1551'. A Kisan Call Centre consists of a complex telecommunication infrastructure, computer support and human resources organized to manage effectively and efficiently the queries raised by farmers instantly in local language. The farmers can make a call from anywhere in the state, the call lands at the concerned state call centre a:r;tdthe farmer gets the response in his or her own language from the agriculture graduates at the call centre or the experts at identified agriculture university or research centre in the state. Over 20 lakh calls were answered within first three years of KCC. (Chandre Gowda and Wasnik, 2009).

The scheme is implemented through a private service provider *(Ws.* Cartel Infotech Limited) identified through a consultant firm Telecommunications India Ltd. (TCIL). The professionally managed Call Centres provide the information based extension services in Agriculture, Horticulture, Animal Husbandry, Marketing and other related areas to the farmers.

The mission of KCCs is 'to harness the state of art knowledge in the field of agriculture and allied areas and deliver the same to farmers through state of art technologies available for the dissemination of such knowledge to solve everyday grassroots problems in farmer's own language and context.'

Operational Mechanism of KCC Scheme

These Call Centres operate in three levels *viz.,*

Level-l : Providing immediate reply to the query raised by the farmer

The calls are picked up at KCCs located in 25 locations across the country by agricultural graduates who after a short welcome message take down the basic information about the farmer and the details of the query. The caller's details, the query and the reply are fed simultaneously into the computer database maintained on a server, which is used to generate Management Information Syste~ (MIS) rep rts. This database is made available to the policy makers at the national and state level at regular interval. Current records speak that 98 per cent calls are answered at LevelL In case the Level-I expert is not able to answer the question, he forwards the call to the concerned Level-II experts through call conferencing mode.

Level-II: Transferring the unanswered question to specialist located in agriculture universities or other technical institutes for immediate answer

The Level-II experts are the Subject Matter Specialists (SMSs), located at the Resource Centres in State Agricultural Universities/ICAR Institutes/Department like Agriculture, Horticulture and Animal Husbandry etc.

The Level-II experts are available on all working days during working hours. If the calls are related to policy matters and / or could not be answered be either Level I or II, the questions are forwarded to Level III through e-mail and the answered are passed on to the fanners by post or through a return call.

Level-III: Questions unanswered at the second level also it is referred to this level where the experts will examine and detailed answer could be provided to the farmer, subsequently, through post, telephone or by visit of an agriculture functionary.

The Level-III experts are generally the Nodal Agencies, which are identified in consultation with State Department of Agriculture. The DAC has identified such 28 nodal agencies for the KCC in the different parts of the country who are also responsible for monitoring the activities of the call centres. A State Level Monitoring Committee (SLMC) is constituted in each state under the chairmanship of Agriculture Production Commissioner Principal Secretary (Agriculture)/Secretary (Agriculture). I The KCC services are available right from 6.00 AM to 10.00 PM (1ST), beyond these hours the calls are attended in the IVRS (Interactive Voice Response System) mode. Thus Kisan Call Centres are an important cyber extension tools to provide two-way communication mechanism between the agricultural scientist and the farmers. Some of the states (e.g. Andhra Pradesh) and a few State Agricultural Universities e.g. CCSHAU, Hissar, MAU, Parbhani are running their own call centres in addition to Kisan Call Centre.

Progress of KCCs since inception

All the states have been covered under the scheme. Till July 2008, 20.76 lakh live calls and 7.4 lakh IVRS calls were received in the KCCs. Uttar Pradesh has so far recorded maximum of 4.06 lack kisan calls followed by Rajasthan (2.69 lakh calls) and Gujarat (2.21 lakh calls). However, if the ratio of calls to number of holdings in a state is taken in to account, Punjab, with about 1093000 operational holdings (ICAR, 2006) stands first with about 150 calls per thousand operational holdings which means about 15% of farmers have used the KCC services, Gujarat and Rajasthan with about 58 and 50 calls respectively per thousand operational holdings occupy second and third places in the overall usage. KCCs answer farmer's calls in 22 languages/dialects covering the major languages spoken across the country. The knowledge database (Kisan Knowledge Management System -KKMS) providing the technical back-up the KCC agents is being developed in English, Hindi and subsequently in other regional languages to facilitate the answering of calls by the call centres agents.

Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India would develop the KKMS but its further updating would have to be taken up by State Agricultural Universities and State Departments.

Advantages

1. Problems can be solved quickly in emergent situation like epidemics of crop diseases and pest.
2. It does not involve any cost as toll-free number is provided.
3. Clarification and additional query is possible because of direct contact established.
4. Difficult problems are taken to scientists for solution.

Limitations

1. All limitations with audio method are inherent.
2. People find difficulty in establishing online connection.
3. Less experienced staff at first level sends queries to second level causing delay in response.

SATCOM Networks:

Satellite communication (SATCOM) provides another option for one-way or two-way communication on audio as well as video. Development Education and Communication Unit (DECU) of Indian Space Research Organisation (ISRO) has established a number of communication studios to provide one-way video and two-way audio facilities to support development communication. These SATCOM studios offer excellent services to agricultural scientists to communicate with farming community on video. One-way video and two-way audio sets are highly economic and have been set up at more than 3000 locations in the country, under various projects. This infrastructure is being used optimally some of the agricultural universities. The Anand Agricultural University, Gujarat runs a programme called Gujarat Satellite Krishi Goshtee (GAU-SAT-KRU), providing one-way video and two-way audio communication among the scientists of AAU and the farmers of the state. The scientists of the university come to the SATCOM studio of Gujarat at Gandhinagar, and the farmers interact with them from the Sardar Smriti Kendras (SSKs) having SATCOMfacilities at various districts. Thus, the SATCOM is one of the important tools of Cyber Extension to facilitate two-way interaction among the stakeholders.

Use of Cyber tools

Sr. No.	Cyber Media	Form of information	User	Examples
1	E-mail	Text Picture (Motion) Offline	Experts/Scientist Entrepreneurs Progressive farmers Extn. Workers	KVK, Babhale- shwar and Baramati
2	Internet Browsing	Text, Picture (Motion) Online/Offline	Progressive farmers Extn. Workers	Agril. Price Information from www.ag-mark et.nic.in
3	Interactive Expert System	Text Picture (Motion) Online/Offline	Expert/ Scientist Extn. Workers Agri-clinics	Crop Specific Expert Systems Developed by ICAR Institutes
4	Video - Conferencing	Audio-Video On line	Expert /Scientists Agri-clinics	Video Conferencing System for e-governance

5	SATCOM Network	Audio-Video Online	Expert/ Scientists Entrepreneurs Extn. personnel Farmers	Studies of DECU Of ISRO (3000) Gujrat Satellite Krishi Goshtee, Anand
6	Call Centre	Audio Online	General farmers	Kisan Call Centre (1800180) 1551

Agri-Clinics - A Advanced Information Sources

Agri-clinics is also included here under advanced information sources because one of the important aspect of agri-clinics is use of Internet for giving information support to farmers on current issues like market intelligence. The extension agency serves farming community by variety of services such as;

1. Information services
2. Advisory services
3. Training
4. Technology assessment and refinement
5. Crop demonstration

For providing information support and advice to farmers, consultancy clinics are needed. Consultancy clinics are the centres from which farmers can get agriculture technology and the services. Concept of consultancy clinic is gaining ground with increasing awareness among farmers about their problems in farm enterprise. Farmers want information, advice and services pertaining to their immediate problems. Agri-clinic is the best example of consultancy clinics.

Thousands of agriculture and allied graduates passed out from universities are going unemployed. On the other hand, there is acute shortage of trained manpower in agriculture extension. Agri-Clinics and Agri-Business Centres are managed by professionally qualified agriculture and allied graduates, located in rural areas providing value added extension services to the farmers. Thus, extension gaps can be reduced. The research studies show that even after directed efforts fo extension agency and SAUs, problem of lack of knowledge of improved agricultural technology still persists. The agri-clinics help in updating knowledge of farmers resulting in adopt of recent agricultural technologies. Agri-Clinics are those which provide expert services and advice to farmers on cropping practices, technology dissemination, crop protection from pests and diseases, market trends and prices of various crops in the markets and also clinical services for animal health etc., which would enhance productivity of crops or animals. Agri-Business Centres are those, which provide input supply, farm equipment on hire and other services. The Central sector scheme of Agri-Clinics and Agri-Business Centres was launched on 9th April 2002 to help the agriculture graduates in getting gainful self-employment. The scheme is

aimed to supplement the efforts of government extension system and public sector input supply agencies. Moreover, it would provide gainful employment to agricultural graduates in new emerging areas in agricultural sector. The scheme is being implemented through SFAC, MANAGE and NABARD.

Under the Scheme Agri-Entrepreneurs are given: (a) two months training for getting agri-clinics and agribusiness ventures on first come first serve basis in training institutions located in respective states; (b) margin money; (c) bank finance; and (d) a subsidy on project cost is also under consideration to make the scheme more attractive and improve its validity. The trained agriculture graduates could take up any of the 20 identified activities individually or in a group of maximum five trained graduates.

Different activities of Agri-Clinics and Agri-Business Centres are Agro-eco tourism, Animal feed unit, Tissue Culture Unit, Production and marketing of crop, vegetable, bio-control agents, pesticide, bio-fertilizer, Contract farming,

Crop protection centre, Cultivation of medicinal plants, Direct Retail market, Farm machinery unit, Fisheries development, Floriculture, Organic manure production, Horticulture clinic, Landscape and nursery, Organic production/Food chain, Post harvest management, Seed processing, Soil testing laboratory, Vermi composting, Veterinary clinics, Rural godowns, Agriculture journalism, Agriculture insurance, Sericulture, Mushroom cultivation, Value addition, Apiary etc. (Chandra Shekara, 2007)

Agri-Clinics and Agri-Business Centres supplement the efforts of public extension, provide specialized extension services and also generate self employment opportunities to unemployed agriculture graduates.

Community Development Programme

The community development programme was started in India just after independence (1952). It was a multi project programme with the aim of an overall development of rural people. This programme consisted of agriculture, animal husbandry, irrigation, cooperation, public health, education, social education, communication, village industries etc. In fact all these aspects of life relate to the 80 per cent of India's farming population. There are officials for each activity at district level to plan, execute and evaluate the programme up to the village level. Community development is an exclusive term. It is frequently used to encompass any and every effort towards the advance of community interests. A variety of interpretations are therefore easily

available. Community development is a compound term. It is useful, therefore, to consider its components.

The Community:

A community is a group of people, who live in a geographical area and have interests in each other for the purpose of making a living. It is a farm of social organization existing between the family and state. A community, while in it consisting of several parts, is also a part of a larger social system. It is a dynamic social unit which is subject to change of internal or external origin. Some of the important characteristics of the community are

1. Communities are close-knit
2. Their customs are interrelated
3. These communities are complexes of sub-group relationship and
4. There is a discernible leadership within the community.

Development:

The term development connotes growth or maturation. It implies gradual and sequential phases of change. By understanding the above terms, we can say that community development programmes means a programme for gradual change in a group of people living in a geographical area and have interest in each other for the purpose of making a living.

Concepts of Community Development:

1. Community development is a movement designed to promote better living for the whole community with the active participation and on the initiative of the community.
2. Community development is a balanced programme for stimulating the local potential for growth in every direction. Its promise is of reciprocal advance in both wealth and wealth and welfare, not on the basis of outside charity but by building on the latent vitality of the beneficiaries themselves with the minimum of outside aid.
3. Community development is technically aided and locally organized self help.

4. The term community development has come into international usage to denote the process by which the efforts of the people themselves are united with those the governmental authorities to improve the economic social and cultural conditions of the communities, to integrate these communities into the life of the nation and enable them to contribute fully to national progress.

5. Community development is the term used to describe the technique which many governments have adopted to reach their village people and to make more effective use of local initiative and energy for increased production and better living standards.

6. Community development is a process of social action in which the people of a community organize themselves for planning and action, define their needs and problems.

Community development has now set the pattern for the development of the rural people and the rural areas. The objectives of development and the new approach it makes to the solution of the problem of rural reconstruction, the comprehensive nature of the programme that it is promoting. The approach to the programme is twofold, educational and organizational. The rural people are to be educated in the art of better living, for bringing about a change in their attitude, for breaking away from primitive methods of production, unhygienic says of living based on tradition and for the adopting of progressive ways based on science and technology.

Size of Unit:

For each community project, as at present planned, there will be approximately 300 villages with a total area of about 450 to 500 square miles, a cultivated area of about, 1,50,000 acres and a population about 2,00,000. The project area is conceived as being divided into 3 development blocks, each consisting 50,000 to 70,000. The development block, is, in turn, divided into groups of 5 villages each, each group being the field of operation for a village level worker.

Location of Units:

The initial programme has been started with approximately 55 projects of rural development located in select areas in the several states of India, A certain degree of flexibility is allowed in the actual allotment of projects. Thus, while many are complete projects of about 300 villages each,

some are also independent development bocks of about 100 villages each, depending upon the needs and conditions of the particular areas chosen for development

Feature Community Development Programme

The community development programme having a principle feature which gives the ideas about programme.

1. It has undertaken a countrywide programme of rural development. The limited pilot approach with which the programme started was abandoned soon after in preference to a countrywide programme. Therefore, a limited pilot approach in the matter of educating the rural people becomes inadequate.

2. An extension service well manned and trained is being placed right in the village and at the block level to assist and guide the rural people.

3. A big scheme for orientation and training of personnel has been undertaken to provide trained workers of or the community development programme.

4. The promotion of local leadership through education and training on a scale commensurate with the programme of community development is now urgently called for.

5. The promotion of youth programmes as an integral part of the community development programme is being taken up and will have much contribution to make to the education of rural youth.

Main Lines of Activity in Community Development Programme

The main lines of activity which will be undertaken in a community project can be briefly divided into the following:

a) Agriculture and Related Matters:

The programme includes reclamation of available virgin and wasteland; provision of commercial fertilizers and improved seeds; the promotion of fruit and vegetable cultivation, of improved agriculture technique and land utilization; supply of technical information, improved agricultural implements, improved marketing and credit facilities; provision of sol surveys and prevention of soil erosion, encouragement of the use of natural and compost manures and improvement of livestock, the principal emphasis here being on the establishment of key villagers for breeding pedigree stock

and the provision of veterinary aid, as well as artificial insemination centers. For attaining this objective, agricultural extension service will be provided at the rate of one agricultural extension worker for every 5 villages.

b) Irrigation:

The programme visualizes provision of water for agriculture through minor irrigation works, e.g. tanks, canals, surface wells, tube wells etc. the intention being that at least half of the agricultural land, if possible, be served with irrigation facilities.

c) Communication:

The road system on the country side is to be so developed as to link every village within the project area up to a maximum distance of half a mile form the village, the latter distance being connected by feeder roads through voluntary labour of the villagers themselves, only the main roads being provided for and maintained by the state or other public agencies.

d) Education:

It has been realized that the full development of a community cannot be achieved without a strong educational base, alike for men and women. The community projects have been planned to provide for social education, expansion to basic type, provision of educational facilities for working children and promotion of youth welfare.

Vocational and technical training will be emphasized in all the stages or the educational programme. Training facilities will be provided for imparting improved techniques to existing artisans and technicians, both in urban and rural areas. Training centers which already exist in any area, will be strengthened and developed, and new ones established to meet the requirements of the project area.

e) Health:

The Health Organization of the project area will consist of 3 primary health unit equipped with a hospital and a mobile dispensary at the headquarters of the project area and serving the area as a whole. It would aim at the improvement of environmental hygiene, including provision and protection of water supply; proper disposal of human and animal wastes; control of epidemic diseases such as Malaria, Cholera, small-box, Tuberculosis etc. provision of medical aid along with appropriate preventive measure, and education of the population in hygienic living and in improved nutrition.

f) Supplementary Employment:

The unemployed and the under-employed persons in the village community will be provided with gainful employment to such extent as in possibly by the development of cottage and small-scale industries, construction of brick-kilns and saw mills and encouragement of employment through participation in the tertiary sector of the economy.

g) Housing:

Apart from the provision of housing for community projects personnel, steps will be taken, wherever possible, to provide demonstration and training in improved techniques and designs for rural housing. In congested villages, action in the direction of development of new sites, opening of village parks and playgrounds and assistance in the supply of building materials, may also be necessary.

h) Training:

The training of village level workers, project supervisors and other personnel for the community development programme will be carried out in 30 training centres which have been set up with the assistance of the Ford Foundation of America. Each training centre will have facilities for about 70 trainees. Each centre will have double training staff so that the trainees can be divided into two groups. One group will be getting practical and supervisory work experience, while the other group will be utilizing the centers' facilities for lectures, demonstrations and discussions. The training period will be limited to six months. Other than this, step will be taken for the training of the agriculturists, punches and village leaders.

i) Social Welfare:

There will be provision for audio-visual aid for instruction and recreation, for organizations of community entertainment sports activities and melas

Organizational Set-up for Community Development Extension Service

The organizational 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.

1. The direct-line staff such as State Development Commissioner, B.D.O and Village Level Worker.

2. The auxillary or specialist staff, such as different heads of technical departments at the state and district levels and extension officers at the block level.

3. 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 Centers 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 Developments Commissioner is the top-level executive responsible for directing, coordinating 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 de3velopment 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-ordinationg 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 districts 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 form 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 Rah 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 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.

Philosophy of Community Development Programme

The philosophies on which the community development programme should be based are as follows:

1) Work based on "felt needs"

The programme should help the community to solve some of the problems which it feels are existent.

2) Work based on assumption that people want to be free from poverty and pain: It is assumed that the members of the community want a standard of living that allows them to be free from pain caused by lack of sufficient social side it is assumed that the people have four basis wishes a) security b) recognition c) response, d) new experience.

3) It is assumed that people wish to have freedom in controlling their own lines and deciding the forms of economic, religious, education and political institutions, under which they will live.

4) People's values given due consideration. It is presumed that co-operation, group decision-making, self initiative, social responsibility, leadership, trustworthiness and ability to work are included in the programme.

5) Self-Help- The people actually plan and work on the solution of their problems themselves. If the problems of the community are entirely ameliorated through the efforts of some outside agency, then the development of such things as group decision-making, self-initiative, self-

reliance, leadership etc. Will not be forthcoming and it cannot be said that the community is developing.

6) People are the greatest resource-It is by getting the participation of the people in improvement activities that they become developed.

7) The programme involves a change in attitude, habits, ways of thinking relationship among people in the level of knowledge and intellectual advancement of people, changes in their skills, i.e. practices of agriculture health etc.

Stages of Community Development

There are three stages that community development processes go through:

Stage One: Relationship Building:

Building relationships of trust and developing friendships are crucial to successful community development. Getting to know the people in your own group and the groups with which you are working is the first stage in the process of creating a sustainable working relationship. Take time to get to know the people in your Friendship group.

Stage Two: Process Development:

Once good relationships have been developed, groups can begin to plan activities. This will involve sharing ideas, dreams, aspirations and visions, and learning about the community in which you are working. What are their strengths? What are their needs? What are their aspirations?

Stage Three: The Consolidation of Structures and Mechanisms:

At this stage commissions, committees and task forces or interest groups are formed to plan and implement the activities and programs that have been collectively decided upon. These structures are also responsible for keeping the information flowing between the groups and out into the wider community, and often carry out the monitoring and evaluation processes that keep the programs and activities vibrant and sustainable.

Objectives of Community Development Programme

The community development programme has for its objectives economic development, social change and democratic growth. These three objectives are to be promoted jointly and in such a manner that they support one another. In India, the objective behind the community development programme is to develop the resources of the people and to assist each

village in planning and carrying out the integrated agricultural production. Like this, **the major objectives of this project** are:

1. To change the outlook of all village people.
2. To improve existing village crafts and industries and organizing new ones, providing minimum essential health services and improving health practices.
3. Providing required educational facilities for children and adults as well as recreational facilities.
4. Improving housing and family living conditions of villagers.
5. To develop a responsive village leadership, village organization and institutions.
6. To develop village people so that they become self reliant and responsible citizens.
7. To help people that they can increase their income and quality of life.
8. Organizing or arranging trainings for voluntary local leaders like members of panchayats, village and block advisory committees etc. and professional community development workers like village level workers, extension officers, block development officers.

Difference between Community Development Programme and Extension Education

Community development programme and extension education both are for welfare of the rural peoples. These programmes are having more similarities than dissimilarities between these two concepts. The difference between extension and community development, as revealed by the various statements of objectives, processes, forms and principles.

Extension Education:

Objectives:

1. Emphasis on the individual.
2. Education aimed at individual development to obtain economic and social improvement.
3. Has as its main theme the individual's needs.
4. Emphasizes decision-making for change by individuals and families.

Form:

1. Extension is an educational arm of Government, usually through educational institutions or other Government departments.

2. Emphasizes an organization that either carries out educational services directly or transmits knowledge from other resources to people.
3. Usually represents a transfer of responsibility form administering Government organization to another "Educational Group."
4. Permits cooperation between departments and agencies.
5. Essentially a "Branch" of the Department of Agriculture.ot directly involved in promotion of local units of the Government.

Community Development:

Objectives:

1. Emphasis on cooperation.
2. Education aimed at groups of individuals to work collectively to obtain economic and social improvement.
3. Has as its main theme the community's needs.
4. Emphasizes decision – making by groups and representation of groups.

Form:

1. Community development is usually a direct Government approach to straight line organization.
2. Emphasizes the coordination of services by a working team made up of representatives of different services.
3. Usually a tight control held by a Government administering agency to cut across participating Governmental departments:
4. To recognize and include the various departments that must provide service.
5. To eliminate departmental reluctance to participate.
6. Forces departments and agencies to participate.
7. Essentially a branch of Government serving several departments of the Government.
8. Tied into promotion of local units of the Government.

Limitations:

1. Most of the people are still illiterate and it is a difficult task to train about million people living in villages. For such a population the extension methods like demonstration, individual approaches,

exhibitions, group meeting and training classes require thousands of extension workers.

2. Lack of communication channels, lack of roads, lack of vehicles are the major limitation of community development programmes.
3. Limitations of funds and staff for training farmers. In some backward state, where the villages are small and far away form each other, the extension worker have to act as technical advisor as well as act as a he has to do some administrative and clerical job also, and this reduces their working day and also efficiency.
4. A traditional society, with old ways and practices does not want to take risk unless it sees the result. Because change creates insecurity and uncertainty so there was resistance in the early years.
5. In an illiterate, traditional society the real leadership could not come forward. People with vested interests tried to get advantage by fooling the real client system, and the extension agency.
6. Preaching to rural people and educating them in new practices requires very careful handling and needs highly skilled workers who have knowledge of "how change take place" and the skill to induce them. It is very difficult to produce a large number of such workers.
7. In the beginning, such limitations may not have been realized and objectives were very vaguely formulated. Thus, when goals are not fulfilled, to the extent they were formulated, there is public criticism which leads to further weakening the support to community development.
8. The change-over form an attitude of heavy dependence of the Government to one of self-dependence takes place very slowly, and since there is lack of properly trained personnel and weaknesses in the supply line in the initial stage there is disappointment among the people.
9. National Extension Service
10. Rural development activities under Government sponsorship was started with the introduction of community development programme on 2nd October 1952. Within a few months of the launching of these pilot projects, it was prominently experience 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 o0f 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. Bothe 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 Nation Extension Service described as follows:
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 to170 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.

Democratic Decentralization (Panchayat Raj)

The world "democracy" is derived from the greet roots – 'cracy' meaning 'rule of' and 'demos' meaning 'the people. It is governance of the people , by the people , for the people The emphasis is on the 'people 'as distinct from 'offer' .Rule by majority is , no doubt , an important feature of this system of governance ;but the more important ingredient is rule by consultation ...consultation between the people's representatives on one hand , and consultation with hey officers on the other. It is, in essence, a pooling of the intelligence and the experience of all concerned administration. As corollary it also implies and even enjoins on them an implicit acceptance of the decisions taken by the body of members, and a resolve to implement them.

'Decentralization' means devolution of central authority among local units close to the areas served .Where authority devolves by this process on people's institutions, it is democratic decentralization. The team headed by Balwantrai Mehta (1956) recommended 'democratic decentralization'. According to this committee to delegate the powers, responsibility and resources for planning and execution of the development programme to people's institutions. As per the recommendations of the committee it was aimed to secure the maximum participation of the rural people in their own development programmes. The committee was of the opinion that one of the major reasons for the failure of the community development programme which is implemented after India's independence was the apathy and the non-participation of the people in the developmental programme. The study team recommended a basic pattern of democratic decentralization with the Gram panchayat (Village Council) at the village level, the Panchayat Samiti at the block level and the Zilla Parishad (district council) at the district level. The Gram panchayat is at the bottom of the Panchayat Raj

System and the Zilla Parishad is at the apex. The Panchayat Samit constitutes the middle tier of this three-tier new set up of rural administration.

The study team's recommendations as approved by the National Development Council were communicated by the Center to the State for implementation. In the middle of 1958 the State of Madras had started as an experimental measure a pilot block of democratic decentralization in her own way as early as 1957. The experiences of this block were there Andhra State started in July 1958, twenty pilot blocks more or less on the same lines as recommended by the study team, one in every district of Andhra. Inspired by these experiences the State of Rajastan become the pioneer to bring the whole of Rajastan under democratic decentralization on October 2, 1959 On Nov, 1, 1959, Andhra Pradesh state introduced this scheme of democratic decentralization. In the entire state, then it was adopted by Mysore, Tamil Nadu, Orissa, Assam, Punjab, Uttar Pradesh and other states. Now all the state of India has introduced the system with minor variations so as to make it suitable to their own conditions and requirements.

Panchayat Raj: There is something anomalous and contradictory in the term "Democratic Decentralization". It was also not easily understood by our people in India. At the instance of the Prime Minister it was seceded to give this process of the three-tier administration a strictly Indian name "Panchayat Raj' evolved as the natural expression that fitted admirable to the situation. Panchayat Raj means a system of Government horizontally it is a network of village panchayat. Vertically, it is an organic growth of the Panchayat rising up to the national level. Panchayat Raj was accepted as the new concept because it meant administration by mutual consultation, Consent and consensus. A three tier system of democratic decentralization recommended the system operates at the district, block and village level, as follows

District level	-	Zilla Parishad
Block level	-	Panchayat Samiti
Village level	-	Village panchayat (Gram Panchayat)

Gram Panchayat

It is basic, first formal democratic institution at the village level. The chairperson of this unit is called as Sarpanch. It is primary unit of local self-government. Gram panchayat is a cabinet of the village elders, directly elected by the adult citizens of the village. There are 8 to 10 ward punches, two or three co-opted members, who constitute the body of Gram Panchayat; they are consists of 8 to 10 villages. There are three functional sub committees which meet four times every month to decide agricultural production programme, cottage industry programme, finance and budget and social amenities in Gram panchayat area.
The members of the Gram Panchayats have tenure of five years and are directly elected from wards while the Sarpanch is elected by the members. There is provision for reservation of seats for women and for scheduled casts and scheduled tribes. There is Gram Sabha for each panchayat and the Sarpanch is required to conduct Gram Sabha meetings at least once in six months. Also Sarpanch is required to conduct meeting of the members of the Panchayat once in a month.

Functions of Gram Panchayat: There are number of functions perform by Gram Panchayats. These functions are divided into two categories, namely, the obligatory functions and the options functions.

Following are the Obligatory or the Compulsory Functions:

1. Construction, repairs, maintenance, alteration and extension of village roads, provisions of lights on the roads and other places of public resort and removal of encroachments and obstructions on the roads and other public places.
2. Construction, maintenance and cleaning of drainage system and provision of sanitation in the village by the removal of filth and clearance of marshy areas.
3. Supply of drinking water to the villages.
4. Adoption of preventive measures against epidemics and other dangerous diseases, prevention of obnoxious and dangerous trade, registration of births and deaths and the preparation of the necessary records for the purpose.
5. Maintenance of common pasture and other public institutions.

6. Preparation of census records of men and animals, maintenance of relevant records and submission of periodic records and returns.
7. Management of Panchayat properties as assets.
8. Spread of primary education and its management.
9. Social conservation.
10. Control of Markets, ferries, fairs, Ghats and other public places.
11. Adoption and encouragement of improved methods of cultivation.
12. It has to perform such other functions which are given to the Gram panchayat on a compulsory basis.

Optional Functions:

In addition to the compulsory functions, each Gram Panchayat is also required to perform certain optional functions for the development of the rural people. These functions are given below:

1. Planning and maintenance of trees.
2. Development and maintenance of village forests.
3. Development of the livestock.
4. Construction, management and control of slaughter houses.
5. Reclamation of cultivable wastes and follows land.
6. Organization and management of multi-purpose co-operative societies.
7. Famine relief measures.
8. Establishment and maintenance of village libraries.
9. Marketing of agricultural produce
10. Organization of the Fire services and protection of life and property in case of fire.
11. Maternity and child welfare and establishment of centers of the purpose.
12. Establishment and management of village Adarsh and clubs.
13. Establishment and maintenance of works for providing employment in time of scarcity and establishment and granaries.
14. Organization, management and promotion of cottage industries.
15. Organization and maintenance of industrial and agricultural exhibitions.
16. Construction and maintenance of Dharmasalas and Rest houses.
17. Provision of adult education, establishment of primary schools with the prior approval of the panchayat samiti.

18. Prevention of gambling and implementation of prohibition.
19. To keep the records about the unemployed persons.
20. Panchayat Samiti
21. This is the next tier of administration at the Block level.

Powers and Functions of Panchayat Samiti:

1. The President and members of the Panchayat Samiti have to endeavour to instill among the people within their jurisdiction a spirit of self-help and initiative and harness their enthusiasm for raising the standard of living.

2. They have to enlist the whole-hearted support of the people for the implementation of the Development Programmes, not only of those which relate to the community for which Government assistance is forthcoming but much more so of those which relate to individuals and which as mainly based on self-help.

3. They have to exercise all the powers conferred on and perform all the functions entrusted to the Panchayat Samiti by the Government.

4. In particular all the activities of Community Development Programme are taken over by Panchayat Samiti. The activities concerning the rural welfare and development in the field of agriculture, Animal Husbandry, Health and Sanitation, Elementary Education, cottage industries, social welfare etc. which were being carried on by the normal Development Departments are now entrusted to the Panchayat Samiti. These schemes have been transferred with all the institutions, staff and funds to the Panchayat Samiti.

5. The powers and functions of the District Boards, with institutions, staff and assets and liabilities have been transferred to the Panchayat Samiti with effect from 1, Dec, 1959. The Presidents and members will have to see to the proper implementation of tall the programmes and working of the institutions entrusted to them.

6. The Panchayat Samiti can borrow funds for carrying out the purposes of the Act subject to the conditions laid down in the Andhra Pradesh panchayat Samiti and Zilla Parishad Loans Rules 1959.

7. The powers of the various authorities to accord administrative and financial sanction in respect of the works and schemes of Panchayat Samiti are embodied in the rules issued by Government.

8. Government of Andhra Pradesh have given funds to the Panchayat Samiti provided under the head "Loans for irrigation and rural housing" in the Community Development Programme. These funds will be recovered from the Panchayat Samiti in installments. The Panchayat Samiti will have to sanction and disburse loans to individuals and will have to recover them from the loanees.

9. The loan funds available with some of normal development departments such as Agriculture. Animal Husbandary, and Industries etc. are also made over to Panchayat Samiti to be similarly spent and recovered.

10. The funds available under the Village Housing Project are also entrusted to Panchayat Samiti. All these loans will have to be recovered from the loanees by the Panchayat Samiti Themselves.

Zilla Parishad and its Function

This is the third tier of Panchayat Raj operating at the district level. It consists of:

1. All Presidents of Panchayat Samiti in the district.

2. 2. The district collector.
3. M.L.A.s of the District
4. M.L.Cs.with right to vote but not to hold office.
5. M.P.s of the District
6. Tow women representatives.
7. One representative of Scheduled Casts.
8. One representative of scheduled Tribes.
9. Tow persons interested in rural development.
10. The members of the Parishad elect a chairman and a vice-chairman.

The District heads of development departments take part in the proceedings of the parishad and its standing committees. There will be a secretary appointed by the Government, who attends all meetings of the Parishad and its standing committees. Official members are not entitled to vote.

Every Zilla Parishad has normally seven standing committees. As follow:

Standing Committee I - Planning and Production

II - Co-operation and Industries

III	-	Education
IV	-	Women Welfare
V	-	Social Welfare
VI	-	Communications
VII	-	Taxation and Finance

Powers and Functions of the Zilla Parishad:

1. Zilla Parishad should function as advisory body over the Panchayat Samiti with powers to a) approve their budgets b) co-ordinate their plans and c) distribute funds given by the Government among the blocks.
2. It has to prepare plans for all items of developmental activities in the district including Municipal areas.
3. It has to secure execution of plans etc. which are common to two or more blocks.
4. Secondary education is the responsibility of Zilla Parishad.
5. The parishad should perform such of the powers and functions of the District Board as are transferred to it by the Government.
6. It should also perform the functions of Panchayat Samiti in respect of non-samiti blocks.
7. It should advise the Government in all matters relating to rural development in the district.
8. It should discuss and review at it's ordinary meetings the progress made or the results achieved under-various items. Similarly the District Officer of every Development Department furnishes to the Parishad a brief note on the achievements in the schemes of his department. Such notes will be periodically reviewed by the Parishad.

Organization Set Up:

Extension/Agriculture Development Programme launched by ICAR/ Gov. of India

1. Intensive Agricultural District Programme (IADP)
2. Intensive Agricultural Area Programme (IAAP)
3. High Yielding Varieties Programme (HYVP) (1964-65)
4. Institution Village Linkage Programme (IVLP) (1995-96)
5. Operational Research Project (ORP)
6. National Agriculture Technology Project (NATP)
7. National Agricultural innovation Project (NAIP)
8. Rashtriya Krishi Vikas Yojna (RKVY)

1. Intensive Agricultural District Programme (IADP)

It was felt that the increase in agriculture production under the community development programme was for less than necessary to feed the rapidly increasing population of this country. To tackle this urgent problem the government in collaboration with Ford Foundation launched the intensive agricultural district programme (1960-61) which is popularly known as the package programme. The significant feature of this programme is that the cooperative institutions have become the agency for distribution of credit and supply of agricultural inputs which were essential for implementing the programme. The district selected throughout the country under this programme are pali, thanjavur, West-Godavari, Shahabad, Raipur, Aligarh, Ludhiana, Aleppey, palght, Mandga, Surat, Sambalpur, Bardwan, Bhandeva and Cochar.

Objectives:

1. To increase the income of the cultivator and his family.
2. To increase the economic resources and potential of the village.
3. To create employment facilities.
4. To demonstrate the most effective ways of expansion of the national food production technology by co-operative efforts between officials and not-officials, villagers and individual cultivators.

The following points were kept as the minimum criteria for selection of the district for IADP:

a) Districts have adequate supply of water.

b) Should have minimum natural hazards.

c) They have well developed village industry.

d) They have maximum potential to increase agricultural and animal production.

2. Intensive Agriculture Area Programme (IAAP)

Even with the short coming of IADP, the spectacular results in improved crop yield obtained in IADP, prompted the Government to think of extending the benefits of improved technology in agriculture in large areas over the country at less cost and with reduced staff strength. This resulted in launching of the INTENSIVE AGRICULTURAL AREA PROGRAMMES (IAAP) in 1964. This was similar to but a less intensive extension programme in comparison to that of the IADP. 114 districts were selected in the year 1964 and later extended to 150 districts.

Achievements

- Achieved increased production by exploiting the land resources.
- Package approach were covered in 1410 communities blocks spread over 114 districts in India. In Karnataka 57 C.D. Blocks spread over 14 districts were covered.
- Increased production by 20-25 per cent of the cultivated area was achieved.
- Effective coordination between officials and nonofficial was achieved.
- Multiplication of improved seeds and its distribution to all cultivated areas was possible.

Difference between IADP and IAAP

Sr. no.	IADP	IAAP
1.	The main objective of the IADP was to implement the improved farm practices in the selected potential areas to increase the production	The objective of the IAAP was to extend the concept of IADP to other potential areas to cover at least 20-25% of the cultivated area in the country.
2.	This programme was recomm-ended by a team of Food Ford foundation experts	This programme was recommended by the third Five Year Plan mid?term appraisal committee.
3.	The main criteria for selection of the districts was based on areas having assured irrigation facilities minimum natural hazards and well developed co-operatives	The main criteria for selection of districts was based on areas having predominant crops and well developed infrastructure facilities
4.	Twenty eight districts including Mandya and Raichur were covered under this programme	One hundred and fifty districts including fourteen districts of Karnataka were covered under these programmes.

	○ Number of personnel working in each community block were ○ VLW's -10 ○ AEO - 1 ○ SM's - 2 (SM's were responsible for the whole district)	○ Number of personnel working in each community block were ○ VLW's -10 ○ AEO - 1 ○ SM's - 2 (similar to IADP)

3. High Yielding Varieties Programme (H.Y.V.P.) (1964-65)

It was introduced in 1964-65 with a new dimension of agricultural production created in the community development project. HYV of Wheat, Paddy and introduced in selected 100 districts but later on it spread in other area also. The objective of this programme is to adopt HYV for maximum production.

For optimizing the yields of the available high yielding varieties of rice, it has been found necessary to advance their sowing time. Efforts were directed to educate the farmers to raise rice nurseries in advance of the main kharif season. A special programme for timely supply of seedlings, by raising community nurseries at tube-well points and on government farms, was undertaken in three command areas in Bihar. This programme has given encouraging results and is being extended to Assam, Uttar Pradesh, Madhya Pradesh, Bihar, Orissa and West Bengal during 1975 kharif.

4. Institution Village Linkage Programme (I V L P) (1995-96)

It is an innovative programme initiated by the Indian council of Agricultural Research (ICRA) on a pilot basis form 1995-96 which was later brought under World Bank funded National Agricultural Technology project (NATP) since 1999. It is different from the earlier first line extension efforts of ICAR, in sense that it lays emphasis on the research aspect through the participation of farmers to be carried out by the multidisciplinary team of scientists, Moreover, IVLP is a production system oriented project with agro-ecosystem analysis of the adopted villages as the basis of identify problems, priorities them and final out technological intervention point which are further developed into action plants to overcome the problems through assessment and refinement of technologies.

Objectives:

The specific objectives of Technology Assessment and Refinement programme are as under:

1. To introduce technological interventions with emphasis on stability and sustainability along with productivity of small farm production system.
2. To introduce and integrate the appropriate technologies to sustain technological interventions and their integration to maintain productivity and profitability taking environmental issues into consideration in a comparatively well defined farm production systems.
3. To introduce and integrate the appropriate technologies to increase the agricultural productivity with marketable surplus in commercial on and off farm production system.
4. To facilitate adoption of appropriate post-harvest technologies for conservation and on-farm value addition of agricultural products, by products and wastes for greater economic dividend and national priorities.
5. To facilitate adoption of appropriate technologies for removal of drudgery increased efficiency and higher income of farm women.
6. To monitor socio-economic impact of the technology intervention for different farm production system.
7. To identify extrapolation domains for new technology modules based on environmental characterization at mesa and mega level.

5. Operational Research Project (ORP)

The ORP was launched in 1975 by the ICAR. The basic aim of ORP was to demonstrate the technologies to the farmers and the extension workers on a watershed basis to evoke community action and participation.

The main objectives of ORPs were:

1. To test, adopt and demonstrate the new agricultural technologies in farmer's field in a cluster of three to four villages or in a watershed area.
2. To calculate profitability of the new technology meant for increasing production and economic returns substantially,
3. To identify socio-economic constraints affecting transfer of new technologies
4. To assess the credit worthiness of the new agricultural practices.

The overall aim of the project was the socio-economic development of farmers with an integrated approach comprising of modern technologies of

crops, horticulture, animal production, homestead, vocations and improving health hygiene and nutrition etc. by utilizing local available resources.

5. National Agriculture Technology Project (N A T P)

This project was launched by the ICAR on June 30, 1998, with the support of the World Bank to strengthen and complement the existing resources and to argument the output National Agricultural Research System (NARS).

Objectives:

The major objective of this component is

1) To accelerate the flow of technology form research, and extension to farmer.

2) Improve the dissemination of location specific and sustainability enhancing technologies.

3) Decentralize technical and decision making authority to the district level.

4) Create a more effective and financially sustainable public extension system.

5) Step up the privatization of certain technology transfer activities.

6. 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 project will run up to June 2012. 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 India 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. Strengthens 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. Funds research on production-to-consumption systems.
3. Funds research on sustainable rural livelihood security.
4. Supports 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.

7. Rashtriya Krishi Vikas Yojna (RKVY)

Rural Development Programs launched by Govt. of India

1. Swarnajayanti Gram SwarojgarYojana (SGSY)
2. Indira AwasYojana (IAY)
3. Mahatma Gandhi National Rural Employment Guarantee Act
4. Prime Ministers' RozgarYojana (PMRY)
5. District Rural Development Agency (DRDA)
6. Integrated Watershed Development Programme (IWDP)
7. Providing Urban Amenities in Rural Area (PURA)
8. Rashtriya MahilaKosh – (National Credit Fund for Women)
9. MahilaArthikVikasMahamandal (MAVIM)

1. Swarnajayanti Gram Swarojgar Yojana (S G S Y)

This programme was launched in April, 1999. This is holistic programme covering all aspects of self employment such as organization of the poor into self help groups, training, credit, technology, infrastructure and marketing.

Objective:

The objective of SGSY is to provide sustainable income to the rural poor. The programme aims at establishing a large number of micro-enterprises in the rural areas, based upon the potential of the rural poor. It is envisaged that every family assisted under SGSY will be brought above the poverty-line with in a period of three years.

Scope:

This programme covers families below poverty line in rural areas of the country. Within this target group, special safeguards have been provided by reserving 50% of benefits for SCs/STs, 40% for women and 3% for physically handicapped persons. Subject to the availability of the funds, it is proposed to cover 30% of the rural poor in each block in next 5 years.

Funding: SGSY is a Centrally Sponsored Scheme and funding is shared by the Central and State Governments in the ratio of 75:25 respectively.

Strategy: SGSY is a Credit-cum-Subsidy programme. It covers all aspects of self-employment, such as organization of the poor into self-help groups, training, credit technology, infrastructure and marketing. Efforts would be made to involve women members in each self-help group. SGSY lays emphasis on activity clusters. Four-five activities will be identified for each block with the approval of panchayat Samities. The Gram sabha will authenticate the list of families below the poverty line identified in BPL census. Identification of individual families suitable for each key activity will be made through a participatory process. Closer attention will be paid on skill development of beneficiaries, known as swarozgaris, and their technology and marketing needs.

How to Seek Assistance: For assistance under the programme, District Rural Development Agencies and Block Development Officers may be contacted. The objective of Swarnajayanti Grama Swarojagar Yojana(S.G.S.Y.) is to provide sustainable income to the rural poor. The programme aims at establishing a large number of Micro-enterprises in the rural areas building upon the potential of the rural poor. It is envisaged

that every family assisted under SGSY will be brought above the poverty line in a period of three years. This scheme is launched on 1 st April, 1999, the programme replaces the earliar self Employment and allied programmes IRDP, TRYSEM, DWCRA, SITRA, GKY and MWS, which are no longer in operation. The programme covers families under below poverty line in rural areas of the country within this target group, special sage guard have been provided by reserving 50% of benefits of SC/STs, 40% for women and 3% for physically handicapped persons subject to availability of funds. It is proposed to cover 30% of the rural poor in each block in the next five year. S.G.S.Y. is a credit cum subsidy programme. It covers all aspects of aspects of self employment such as organization of the poor into self-help groups training, credit technology, infrastructure and marketing. SGSY is a centrally sponsored scheme and funding shared by the Central and State Government in the ratio of 75:25.

2.Indira Awaas Yojana

Housing is universally recognized as one of the basic human rights. It is the responsibility of the Government to ensure that every citizen has a safe, secure and healthy place to live and work and lead a life of dignity. In other words, by ensuring the right to adequate housing in rural areas, the need to enhance quality of life and opportunity of growth is addressed. A large number of rural households especially those belonging to the vulnerable sections, are unable to access good housing and civic amenities due to low income. Besides absolute shortage, congestion and obsolescence, damage due to vagaries of nature such as flood cyclone, earthquake as well as incidence of violence, has added to the problem of housing shortage.

Fulfilling the need for rural housing and tackling housing shortage particularly for the poorest is an important task to be undertaken as part of the poverty alleviation efforts of the Government. The Indira Awaas Yojana (IAY) is a flagship scheme of the Ministry of Rural Development to provide houses to below the poverty line (BPL) families in the rural areas. Under IAY, since inception, 320.55 lakh houses have been constructed, incurring an expenditure of Rs. 1,05, 518.85 crores.

HISTORICAL BACKGROUND

The Indira Awaas Yojana (IAY) was launched during 1985-86 as a sub-scheme of RLEGP. IAY, thereafter, continued as a sub-scheme of Jawahar Rozgar Yojana (JRY) since its launch in April, 1989. Six per cent of the total JRY funds were allocated for implementation of IAY. In the initial years the housing scheme addressed the needs of SC and ST families and

families of bonded labourers in BPL category. From the year 1993-94, the scope of IAY was extended to cover non-SC/ ST families in the rural areas. IAY was de-linked from JRY and made an independent scheme with effect from 1st January 1996. It is now a flagship programme of the Ministry of Rural Development as part of the larger strategy of rural poverty eradication, to provide dignity of an address to the poor households and to enable them to access benefits of other rural development schemes.

3. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

Evolving the design of the wage employment programmes to more effectively fight poverty, the Central Government formulated the National Rural Employment Guarantee Act (MGNREGA) in 2005. With its legal framework and rights-based approach, MGNREGA provides employment to those who demand it and is a paradigm shift from earlier programmes. Notified on September 7, 2005, MGNREGA aims at enhancing livelihood security by providing at least one hundred days of guaranteed wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work. The Act covered 200 districts in its first phase, implemented on February 2, 2006, and was extended to 130 additional districts in 2007- 2008. All the remaining rural areas have been notified with effect from April 1, 2008.

Salient features of the Act

1. **Right based Framework:** For adult members of a rural household willing to do unskilled manual work.
2. **Time bound Guarantee:** 15 days for provision of employment, else unemployment allowance Up to 100 days in a financial year per household, depending on the actual demand.
3. **Labour Intensive Works:** 60:40 wage and material ratio for permissible works; no contractors/machinery.
4. **Decentralized Planning**
   a. Gram Sabhas to recommend works
   b. At least 50% of works by Gram Panchayats for execution
   c. Principal role of PRIs in planning, monitoring and implementation
5. **Work site facilities:** Crèche, drinking water, first aid and shade provided at worksites
6. **Women empowerment:** At least one-third of beneficiaries should be women
7. **Transparency & Accountability:** Proactive disclosure through Social Audits, Grievance Redressed Mechanism,
8. **Implementation**

Under Sec 3, States are responsible for providing work in accordance with the Scheme. Under Sec 4, every state government is required to make a scheme for providing not less than 100 days of guaranteed employment in a financial year, to those who demand work

8. Funding

Central Government -100% of wages for unskilled manual work, 75% of material cost of the schemes including payment of wages to skilled and semi skilled workers.

State Government- 25% of material including payment of wages to skilled and semi skilled workers cost. 100% of unemployment allowance by state government

Ministry has taken the following initiatives:

Timely measurement of works
Timely wage Payment
Irrigation facility
Land development facilities
Horticulture, Plantation

4. Prime Minister's Employment Yojana (P M EY)

Prime Minister Employment Yojana for providing self-Employment to Educated Unemployed Youth was announced by the Prime Minister on 15th August, 1993 to provide self-employed opportunities to one million educated unemployed youth in country. The Scheme has been formally launched on 2nd October, 1993.

Objectives:

The PMEY has been designed to provide employment to more than a million person by setting up of 7 lakhs micro enterprises by the educated unemployed youth. It relates to the setting up of the self-employment ventures through industry, service and business routes. The scheme also seeks to associate reputed non-governmental organizations in implementation PMEY scheme especially in the selection, training of entrepreneurs and preparation of project profiles.

Educated constitute nearly 40% of the unemployed. Incidence of unemployment among the educated lab our force is 11.8% against 3.8% for educated and uneducated taken together. Further, the incidence is much higher viz. 26.7% among women than 9.8% among educated men. Women constitute 27% of the educated unemployed level of education. Projection made using alternative techniques put the estimate of educated unemployed at 6-7 million in 1992. This is out of an estimated educated labour force of

52 million. Of the mew employment opportunities that are being generated in the economy in recent years, about 45 per cent are estimate to be going to the educated. But, though relatively high, the employment growth of the educated still falls short of the growth of labour force by about 7 lakhs in a year. The trend of a higher growth of their employment is likely to continue with the introduction of modern technologies There may, in fact be a shift towards employment of the educated in the activities which hitherto were the preserve of the uneducated. Hence, the problem of the educated needs a special focus within the overall strategy for tackling unemployment. Prime Minister's Employment Yojana (PMEY) seeks to address itself to this problem.

5. **District Rural Development Agency (DRDA)**

DRDAs have been introduced with effect from 1st April 1999. Accordingly, the administrative costs are met by providing separate budget provisions. This scheme which is funded on a 75:25 basis between Centre and States, aims at strengthening and professional sing the DRDAs. The funding ratio in respect of NE States has been revised to 90:10 with effect from the financial year 2008-2009.

ROLE AND FUNCTIONS OF THE DISTRICT RURAL DEVELOPMENT AGENCY (DRDA)

1. DRDAs is a supporting and a facilitating organization and needs to play a very effective role as a catalyst in development process.

2. The District Rural Development Agency is visualized as a specialized and a professional agency capable of managing the anti-poverty programmes of the Ministry of Rural Development on the one hand and to effectively relate these to the overall effort of poverty eradication in the District.

3. DRDAs must themselves be more professional and should be able to interact effectively with various other agencies.

4. The DRDAs are expected to coordinate effectively with the Panchayati Raj Institutions. Under no circumstances will they perform the functions of PRIs.

5. The DRDAs will maintain their separate identity but will function under the chairmanship of the Chairman of the Zilla Parishad.

6. The DRDAs are expected to oversee the implementation of different anti-poverty programmes of the Ministry of Rural Development in the district.

7. The DRDAs shall keep the Zilla Parishad, the State and the Central Government duly informed of the progress of the implementation of the programmes through periodic reports in the prescribed formats.

8. It shall be the duty of the DRDAs to oversee and ensure that the benefits specifically earmarked for certain target groups (SC/ST, women and disabled) reach them.

9. The DRDAs shall take necessary step to improve the awareness regarding rural development and poverty alleviation particularly among the rural poor.

10. The DRDAs will strive to promote transparency in the implementation of different antipoverty programmes.

11. DRDAs shall ensure financial discipline in respect of the funds received by them, whether from Central or State Governments.

12. Thus the role of the DRDA is in terms of planning for effective implementation of antipoverty programmes; coordinating with other agencies-Governmental, non-Governmental, technical and financial for successful programme implementation.

13. In addition the DRDAs shall coordinate and oversee the conduct of the BPL Census and such other surveys that are required from time to time.

14. The DRDAs shall also carry out / aid in carrying out action research/or evaluation studies that are initiated by the Central/State Governments.

15. The DRDAs should deal only with the anti-poverty programmes of the Ministry of Rural Development.

6. Watershed Development Programme (W D P)

Watershed development refers to the conservation regeneration and the judicious use of all the resources – natural (like land, Water plants, animals) and human – within the watershed area. Watershed Management tries to bring about the best possible balance in the environment between natural resources on the one side and man and animals on the other. Since in is the man who is primarily responsible for degradation of environment, regeneration and conservation can only be possible by promoting awakening and participation among the people who inhabit the watersheds.

Man and his environment are interdependent. The changes in the environment directly affect the lives of the people depending on it. A degraded environment means degraded quality of life of the people. Environmental degradation can be tackled effectively through the holistic development of the watershed. A watershed provides a natural geo-hydrological unit for planning any developmental initiative.

Geographical Details of India:

AREA	(m.ha)
Total Geographical Area	329 mha.
Records available	304 mha.
Area fit for vegetation	264 mha.
Are under Crops	142 mha.
Area under forest	67 mha.
Degraded Area in villages	35 mha.
Degraded Area with farmers	20 mha.

The New Guideline for Watershed Development:

1. The IWDP scheme is being implemented on the basis of new Guidelines for Watershed Development from 1.4.1995. The new common guidelines envisage the bottling up approach whereby the Users' Group themselves decide their work programme.

2. The strength of the Guidelines lies in the decentralization of decision making process by involving local Panchayati Raj Institutions, NGOs, Government Departments and the watershed community at the grass root level It is an effort on the part of the Govt. to remove the stumbling blocks that have delayed the process of development. In fact, the initiatives taken by the DOWD aim at establishing a system under which village people can actually involve themselves in planning, implementation and monitoring of watershed development programmes. In preparation of the Watershed Development Plan, Users and Self Help Groups and other people directly depending on the watershed are actually involved.

3. Another strength of these guidelines lies on the flexible approach followed in the method of release of funds, the area to be covered in each watershed as well as choice of components.

4. The new guidelines attempt to make the projects sustainable by establishing Watershed Development Fund and involving people in deciding equity issues and usufruct sharing mechanism.

Institutional Arrangements:

To make the programme successful, proper Institutional arrangement has been provided in the Guidelines from state level to village level. These institutions help in making the programme broad based, sustainable and equitable. These institutions are given below:

State Watershed Programme and Review Committee:

ZILA PARISHADAS/DRAS

WATERSHED DEVELOPMENT ADVISORY COMMITTEES

PROJECT IMPLEMENTATION AGENCIES (PIA)

WATERSHED DEVELOPMENT TEAM (WDT)

WATERSHED COMMITTEE (WC)

USER GROUPS

SELF HELP GROUPS

7. Provision of Urban Amenities in Rural Areas (PURA)

Providing Urban Amenities to Rural Areas (PURA) is a framework which was envisioned by the then President of India, Dr. APJ Abdul Kalam in order to provide livelihood opportunities and urban amenities to the rural population in order to improve their quality of life and bridge the urban-rural divide. The PURA framework has been devised as an empowerment-based model to achieve sustainability by providing the villages with the necessary Physical, Electronic, Knowledge and Economic Connectivity (Kalam and Singh 2011). These entail the setup of proper infrastructure such as roads, railways lines, educational and medical institutions, and communication networks such as wireless networks and broadband connectivity in order to provide the villages with improved access, technical knowledge for improving productivity of village farm and non-farm activities, and creating opportunities for economic growth and development through setup of factories, industries and other institutions. The PURA framework as proposed by Kalam et. al. (Kalam and Singh 2011) is inspired from the several regional community development projects for the social and economic development of villagers that have been setup in India during the early post-Independence period by several social reform workers. Two of the PURAs and its activities are presented below (Kalam 11 November 2005, Batra, Singh et al. 2011, Kalam and Singh 2011, Dwivedi and Jha 2012, Awasthy and Agarwal 2013): 1. Warana PURA - The Warana initiative began during the 1950s out of the necessity to support the small and marginal

sugar cane farmers from fluctuating prices and insufficient demand. Under the leadership of Tatyasaheb Kore, the sugar cooperative movement began when he founded the Warana Sugar Cooperative and set up a factory. (Kalam and Singh 2011) The funds for this factory was raised on an equity basis from the farmers of the region along with investments from other sources. The farmers of the region are stakeholders in the cooperative factory and now it has around 20,000 famers, across 69 villages as its cooperative members. The factory has gone on to diversify its activities with forward and backward integration of the production chain by: 1. Extending subsidies to farmers on pesticides, herbicides, micronutrients etc.; 2. Three-tier nursery programme to provide quality seeds to the farmers; 3. Introduction of a seedling scheme run and managed by women; 4. Agricultural research centre which provides soil testing and informs the farmers about agricultural techniques for optimal production; 5. Several irrigation schemes; 6. Export of sugarcane after processing through various products such as packaged flavored sugar cane juice etc. After the cooperative movement it has been noticed that the production and efficiency of cultivation of sugarcane has been significantly higher in Warana than in other parts of the country. Also the sugar factory has been giving high returns to its investors. The cooperative movement has also made an attempt to create a sustainable model for the villages by creating income opportunities in other core competencies such as dairy and poultry farming. Warana has established a dairy brand with several collection centers in different villages which collect milk from thousands of producers and process it. Warana cooperative supermarket is an entrepreneurial attempt to provide the consumers with better access to consumer goods which is run and managed by women. The Warana Bazaars have rural stores in several villages with 16,000 villagers as members who receive discounts on products. In order to remove illiteracy, educational institutions have been set up which includes schools and colleges of engineering, medical, arts and sciences etc. Efforts have also been taken to provide health care facilities to the villagers by setting up hospitals such as the Mahatma Gandhi Hospital. The Warana Cooperative Bank has 18,000 members and extends credit facilities to its members in order to promote entrepreneurship activities with the goal of creating income opportunities for the landless and marginal farmers. Through such novel fundamental initiatives, Warana has achieved significant socio-economic development for its society. 2. Chitrakoot PURA - Chitrakoot is a district in central India which lies in the state of Uttar Pradesh and on the border to Madhya Pradesh. The Chitrakoot PURA was borne out of a social movement in the late 1960s for the welfare of the majority farming population in the Chitrakoot district by Nanaji Deshmukh. Deshmukh was a social activist from the state of Maharashtra who was inspired by Lokmanya Tilak and the nationalist ideology. He set up the Deendayal Research Institute in Chitrakoot in 1968 with the goal of promoting research in social science and establishing rural development and

training centers for research and promotion of new technologies in sustainable agriculture, water conservation, alternative industrialization, self-employment generation etc. The primary focus of the Deendayal Research Institute is to provide innovative methods for the economic development of the farmers. Almost all of the projects undertaken by DRI are with the goal of bridging the social and economic disparity. One such method is to provide practical, hands-on training to the farmers and also operate demonstration farms which provide live demos of optimal intensive cultivation patterns on farms of sizes similar to the common land holding size of farmers of the area (2 1/2 and 1 1/2 acres). This optimal cultivation pattern, through crop diversification, is based on calculated nutritional requirements of an average household to meet internal demands of the farmer's family along with incorporation of commercial crops for increasing the incomes. It also specifies the area allotment for cultivation, the layout and planning of the field, crop calendar, selection of crop varieties and crop production technologies. DRI also strives to overcome problems of illiteracy, unemployment, healthcare, internal village disputes, and aims to create a self-reliant village. Most of their efforts centre on empowering people to create income generating opportunities for themselves. Vertically Integrated Self Help Groups have been formed so that employment opportunities can be created at all levels of the production chain. One such example is the formation of seed clubs and seed villages to address the inability of small and marginal farmers to procure quality seeds. In order to resolve this problem, seeds are produced by farmers under the guidance and supervision of DRI and are also guaranteed returns on their produce at a pre-specified rate. Several activities such as Bal Jagat and Udyameeta Videyapeeth have been initiated for the social development of the population which include vocational training centers for the youth to find sources of employment. It also trains the villagers in the core competencies and in the utilisation of the local resources of the region. Udyameeta Videyapeeth also extends zero interest micro-finance loans to the youth following a strict methodology which ensures repayment. This is ensured with the help of Samaj Shilpi Dampati. Gramodaya Darshan is an initiative to promote innovations in which all innovations and interventions for self-reliance are exhibited. Along with this several educational institutions have been setup in order to create a literate community. These include several primary, middle and high schools aimed at removing illiteracy and an educational research centre for providing new and innovative learning aids for schools and adult literacy. The most innovative initiative introduced in Chitrakoot is the Samaj Shilpi Dampati, a couple which is intended to perform the role of local leaders in the village and whom the villagers can look up to for guidance in social matters and can also help promote education among children, health, women's awareness, family planning etc. This is an interesting method to tackle the problem of social awareness in rural areas and also may help in ensuring conflict resolution. DRI and Chitrakoot have,

through such initiatives, attempted to create a sustainable and self-reliant model for villages to successfully operate.

Thus, PURA helps to overcome the challenges of sustainable development of rural areas of the country by:

- Wealth generation for a large number of people
- Diversification in the use of resources
- Entrepreneurship and self-reliance opportunities
- Development of technical knowledge and skill through access to education and healthcare
- Vertical and horizontal integration of economic activities to create a self-reliant economic model for a group of villages

Project features

- **Background:** IFAD assisted Tejaswini Maharashtra Rural Women Empowerment Program is eight years duration program implemented from July 2007 by MAVIM. The project target is Below-Poverty Line (BPL) households, (including PRA BPL), schedule castes, schedule tribes, women headed households, Devdasis. Program focuses on organizing women for empowerment and sustainable livelihoods.

The overall goal of the Project is "Poor women make use of choices, space, and opportunities in economic, social and political spheres for their improved well being"

- Target Group: Program has focused targeting policy. MAVIM adopted participatory method to reach out most vulnerable group of society. Out of covered Rs.9.17 lakh HH is 87 % of women belongs to disadvantaged groups such as SC, ST, NT, Minority, and OBC. The Program has adopted a flexible approach to work with existing SHGs, & form new groups where potential exist (dormant SHGs were reorganized and strengthened).

- Project Area: The project is being implemented in the 33 rural districts and selected villages of the state of Maharashtra.

- Project Rationale: The program is designed to support the commitment of the State Govt. to the social and economic empowerment of women through

improvement in income, and in material conditions, participation in decision making processes, and control over their lives and livelihoods.

During the year 2014-15, MAVIM has focused to develop next level institutions to take up further level community development agenda as follows;

1. To demonstrate the model of self-sustained people's institutions in the terms of institutional and financial sustainability with effective people's governance.

2. To demonstrate the inter linkage between micro finance and livelihood activities, to shift the trend from IGA activities to enterprise development.

3. To enable CMRCs to establish themselves as last mile delivery centre in the process of convergence.

4. To provide support to CMRCs to establish effective management system within the CMRC for delivery of convergence program.

5. To translate changing attitude & confidence into control over assets.

The project specific objectives are:

(i) Creation of strong and sustainable SHGs and SHGs apex organizations.

(ii) Provide access to micro finance services

(iii) New and improved livelihood opportunities

(iv) Access to functional education, labour saving infrastructure & participation in local governance.

8. Rashtriya Mahila Kosh

The National Credit Fund for Women known as Rashtriya Mahila Kosh (RMK) was set up in 1993, as a national-level organization under the Ministry of Women and Child Development, Government of India to meet the credit needs of poor and asset less women in the informal sector. RMK was started with an initial corpus of Rs.31.00 crore bolstered up to Rs.41.00 crore with an additional allocation of Rs.10.00 crore in 2006-07 which has grown over to Rs.88.00 crore due to prudent investment, credit and recovery management.

Objectives

1. RMK extends micro-finance services through a client friendly and hassle-free loaning mechanism for livelihood activities, housing, micro-enterprises, family needs, etc to bring about the socio-economic upliftment of poor women.
2. RMK has also taken a number of promotional measures to popularize the concept of women empowerment through micro financing, thrift and credit, formation and stabilization of SHGs and also enterprise development for poor women.
3. Credit is disbursed to the women SHGs both rural and urban through intermediate organizations like NGOs, Co-operative societies, Government autonomous organizations, not-for-profit Section 25 Companies, State Women Development Corporations, registered bodies and federations of women etc. There is no collateral.

9. MAHILA ARTHIK VIKAS MAHAMANDAL (MAVIM)

Tejaswini Maharashtra Rural Women Empowerment Programme is implemented in the 33 rural districts of Maharashtra covering over 12,000 villages supporting over 65,000 SHGs. The target group for Tejaswini is poor rural women especially from the Scheduled Castes and Scheduled Tribes, woman headed households, widows, deserted women, divorcees, landless laborers, and AIDs affected women. Tejaswini Programme focuses on the following thrust areas:

- Grass Roots Institution building
- Micro Finance Services
- Livelihood & Micro Enterprise development
- Women Empowerment

The project began from July 2007 onwards, and the duration of the programme is up to the year 2015. Tejaswini programme envisages creation of strong sustainable SHGs, by promoting and developing of Village Level Committees (VLC) and establishment of Community Managed Resource Centers (CMRCs). The CMRCs' are for social and economic development for promoting, thrift, savings, and credit and insurance services in addition to strengthening their livelihoods. At village level SHGs form Village Level Committees as a forum for convergence of services for achieving social and economic empowerment, while the CMRCs would eventually become the federations of SHGs in a given cluster of villages to provide a range of services to member groups and build linkages with various development organizations. Programme proposes a clear exit strategy where in these

institutions promoted are owned and controlled by groups, continues to sustain beyond the project where the groups would contribute service costs to meet their costs.

The overall goal of the Programme is to enable poor women to make use of choices, spaces and opportunities in the economic, social and political spheres for their improved well-being.

The goal is sought to be achieved by:

(a) Creating strong and sustainable SHGs and SHGs' apex organizations;

(b) Providing (them) access to micro-finance services;

(c) Creating new and improved livelihood opportunities; and

(d) Providing access to functional education, labor-saving infrastructure, and participation in local governance.

During the Current year implementation focuses on the following areas:-

- Strengthening the grass root institutions
- Making the CMRCs (Block level federations of SHGs) functional.
- Skill enhancement amongst women
- More credit flow for the eligible SHGs
- Strategic convergence with line departments
- Gender integration across all the work components

Tejaswini programme has conducted the Annual Outcome Survey for the period of 2010/11 in the month of February 2011.

New Trends In Extension –Privatization

Extension has been, and still is, under attack from a wide spectrum of politicians and economists over its cost and financing. As a result, Extension Systems have had to make changes, by restating the system's mission, developing a new vision for the future, and formulating plans for the necessary transition to achieve the desired change.

At least three scenarios have been suggested by government and farm organizations with regard to privatization of extension:

1. Public financing by the taxpayer only for the kinds of services of direct concern to the general public.

2. Direct charging for some individual services that produce direct return in the form of improved income, with the possibility of differential rates for specific situations or target groups.

3. Mixed funding shared between public and private professional association contributions for services, with delayed return or collective services, such as applied research, training of farmers and agents, and improvement in Extension methods and tools.

Extension service has been traditionally organized and delivered by the public sector all over the world, which led to a situation wherein, whenever one refers to extension, it denoted public extension service. Similarly, whenever private sector is referred to, there is a tendency to consider only the corporate sector in the category. However, private extension has a broader canvas including all relevant private groups than the narrow canvas of corporate sector.

Privatization of extension services does not aim at substituting private sector for public extension service. In fact, privatization has adopted a variety of forms involving different stakeholders. The paper portrays the major stakeholders, viz, private corporate firms, credit institutions, farmer's association's non-governmental organizations and media organizations and analyses their participant configurations.

The success of an extension service depends on the effectiveness of planning at four levels policy, programmes, projects and strategy. Policy and programmes must be decided by the public extension system, while projects and strategy can be formulated by the private extension organizations. When the private extension organizations get involved in providing extension support to farmers, it is likely there will be competition among the various extension providers, which will result in more efficient and demand-driven service. Both technical and allocative efficiency which are basically economic in nature are well take care of by the private extension agencies, resulting in cost minimization, profit maximization and optimal use of resources, which are warranted in a competitive environment.

Public extension service often views sustainability of programmes only in terms of continuity. Sustainability is different form continuity, which has both ecological and equity dimensions. The private extension agencies, especially NGOs and media organizations provide valuable service in

ensuring sustainability of programmes in terms of the above two dimensions.

The private extension system in India offers the following services for farmers – terms of sharing, augmenting and supplementing the public extension efforts besides offering unique and innovative initiatives, which the public extension service can also emulate. Some of the Services are:

1. Cost sharing by farmers' groups
2. Cost recovery on selected services offered to farmers
3. Contracting services to small groups
4. Paid extension services for affordable farmers
5. Value addition by agro-processing firms
6. Consultancy services (both technical and managerial)
7. Privatized service centers for farmers
8. Self Help Groups of farmers
9. Information support through media organizations

Private extension system can offer a variety of services for farmers in a competitive environment which the public sector may not be able to. Hence, it is suggested that public sector extension may limit its activities only to regulatory and enabling functions, and should mainly focus on educational activities, which are unattractive to private sector delivery.

Women Development Programme

1. Development of Women and Children in Rural Areas (D W C R A)
2. Integrated Child Development Scheme (ICDS)
3. Mahila Samridhi Yojana (M S Y)
4. Mahila Arthik vikas Mahamankal (M A V I M)

1. Development of Women and Children in Rural Areas (D W C R A)

The Development of Women and children in rural areas (DWCRA) programme was launched as a sub-component of IRDP and a centrally sponsored scheme of the Department of Rural Development with UNICEF cooperation to strengthen the women's component of poverty alleviation programmes. It is directed at raising the income levels of women of poor households so as to enable their organized participation in social development towards economic self reliance. The DWCRA's primary thrust is on the formation of groups of 15 to 20 women form poor household at the village level for delivery of services like credit and skill training, cash and

infrastructural support for self employment. Through the strategy of group formation, the programme aims to improve women's access to basic services of health, education, child care, nutrition and sanitation. It is merged with S.G.S.Y. SWARNAJAYANTI GRAMA SWAROJAGAR YOJANA since 01.04.1999.

1. The special scheme of Development of Women and Children in Rural Areas (DWCRA) aims at strengthening the gender component of IRDP.
2. It was started in the year 1982-83, on a pilot basis, in 50 districts and has now been extended to all the districts of the country.
3. DWCRA is directed at improving the living conditions of women and, thereby, of children through the provision of opportunities for self-employment and access to basic social service.

Strategy:

1. The main strategy adopted under this programme is to facilitate access for poor women to employment, skill up gradation, training, credit and other support services so that the DWCRA women as a group can take up income generating activities for supplementing their incomes.
2. It seeks to encourage collective action in the form of group activities that are known to work better and are more sustainable than the individual effort. It encourages the habit of thrift and credit among poor rural women to make them self-reliant.
3. The programme also envisages that this target group would be the focus for convergence of other services like family welfare, health care nutrition, education, childcare, safe drinking water, sanitation and shelter to improve the welfare and quality of life of the family and the community.

2. Integrated Child Development Scheme (ICDS)

Launched on 2nd October 1975 in 33 Community Development Blocks, ICDS today represents one of the world's largest programmes for early childhood development. ICDS is the foremost symbol of India's commitment to her children. India's response to the challenge of providing pre-school education on one hand and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality, ion the other.

It is an inter sectoral programme which seeks to directly reach out to children, below six years, especially from vulnerable and remote areas and

give them a head-start by providing an integrated programme of early childhood education, health and nutrition. No programme on Early Childhood Care and Education can succeed unless mothers are also brought within it ambit as it is in the lap of the mother that human beings learn the first lessons in life.

Objectives:

1. Lay the foundation for proper psychological department of the child
2. Improve nutritional and health status of children 0-6 years
3. Reduce incidence of mortality, malnutrition and school drop-outs
4. Enhance the capability of the mother and family to look after the health, nutritional and development needs of the child
5. Achieve effective coordination of policy and implementation among various departments to promote child development.

Services:

The Scheme provides an integrated approach for converging basic services through community-based workers and helpers. The services are provided at a centre called the 'Anganwadi'. The Anganwadi, literally a courtyard play centre, is a childcare, located within the village itself. A package of following six services is provided under the ICDS Scheme:

- Supplementary nutrition
- Non-formal pre-school education
- Immunization
- Health Check-up
- Referral services
- Nutrition and Health Education

The three services namely immunization, health check-up and referral are delivered through public health infrastructure viz. Health Sub Centers, Primary an Community health Centers under the Ministry of Health and Family Welfare.

3. Reorganized Extension System (T & V System)

This system was introduced in 1974 with the World Bank assistance. It was presumed that transfer of technology trough the 'contact farmers' shall benefit all farmers. This system was introduced in Rajastan Canal area in Rajasthan and Chambal Command area in Madhya

Pradesh. The system has since been extended to 13 states and 4 more are in pipe-line. This system will be further extended in the remaining states of the country by 1985. In two and a half decades, T & V became the dominant method of restructuring the extension services in over sixty countries in Asia, Africa and Latin America. The system tries to achieve changes in production technologies used by the majority of farmers through assistance form well trained extension agents who have close links with agricultural research and supported by supply, service and marketing facilities.

Objectives:

The working objectives of the system as follows:

1. Coordinating research, training and extension activities effectively.
2. To make research more effective by catering to the local needs and situation.
3. To evolve an intensive training program on a systematic basic for extension workers and farmers and to ensure effective supervision and technical support.

T & V was regarded as an improved management system of agricultural extension and had the following key features-

1. **Professionalism:** Each extension agent is fully and continuously trained to handle one's particular responsibilities

2. **Single Line of Command:** The extension service must be under a single line of technical and administrative command within the Ministry/ Department of agriculture.

3. **Concentration of Effort:** All extension staff works only on agricultural extension. They are not responsible for any other activity not directly related to extension. In training session, attention is concentrated on important major points.

4. **Time-bound Work:** Messages and skills are taught to farmers in a regular and timely fashion. The village Extension worker (VEW) must visit the farmers regularly on a fixed day, usually once each fortnight. All other extension staff must make timely and regular visit to the field.

Recommendations for a specific area and for particular farming conditions for each two – fortnight periods are discussed and learned by Subject Matter Specialists (SMSs) at regular monthly workshops, the recommendations are

then presented to VEWs and Agricultural Extension Officers (AEOs) at the next two fortnightly training sessions.

5. **Field and Farmer Orientation**: The contact with the farmers must be on a regular's basis, on a schedule known to farmers, and with a large number of farmers representing all major farming and socio-economic types.

6. **Regular and Continuous Training:** Regular and continuous training of extension staff is require both the teach, and discuss with them, and the prepare specific production recommendations required by farmer for the coming fortnights and the upgrade and update their professional skills

7. **Linkages with Research**: Problems faced by farmers that cannot be resolved by extension agents are passed on to researchers of either an immediate solution of investigation. Seasonal and monthly workshops, joint field visit, training of extension are some of the means by which linkages with research and maintained.

Merits and Limitations of Reorganized Extension System (T & V System)

Merits:

1. Increasing the cultivated area under High Yielding Varieties Programme.
2. Dissemination of new knowledge of farming for increasing the cropping intensity.
3. Increasing employment of family labour.
4. Raising marginal value of productivity of all inputs.
5. Accelerating the extent of adoption of recommended practices

According to Ray et.al (1979), there was more impact of this system on the small holdings as compared to large ones. Thus T & V system has a considerable positive impact on the farming economy.

Limitations:

Croot (1997) analyzed certain limitations of T & V system.

1. The T & V model has served to raise the productivity of crops such as rice & wheat from about 1.5 to 4.5 tons per hectare. It has worked especially in areas with relatively uniform, high potential agro-ecosystems with a cond ucive institutional support such as effective input supply, a good market and an attractive urban demand. Nevertheless, the conditions for small holder agriculture in rainfed areas are often not so conducive for agricultural development. Small holder's agriculture is featured by complex,

high risk, variable and diverse agro-ecosystems, not only at the farm level but also at the watershed or landscape levels. Moreover, T & V approach is not the most effective for dealing with natural resources management issues.

2. Researchers develop now technology which extension then delivers to farmers. Farmers are expected to adopt these technologies to improve their farming practices. Researchers are extension, to close the innovation development cycle. However, practice teaches us that in hierarchically organized government institutions this hardly occurs. Moreover, experiences show that innovations are for example, which pass form one individual to another or accumulate on the shelf.

3. Research does not appear to be a constant source of new technologies as assumed in the T & V model. Most new ideas do not originate form research, but form practice itself. Farmers themselves are active information seekers, keen experimenters for promoting collective change. The development of innovations appears to be a much more complex process than the "technology transfer" model leads us to believe.

4. The concept of contact farmers does not work very well. In some countries, a modified T & V type has changed his concept into the use of contact groups which has also not worked well.

5. Experiences shows that the ideas of the same message as being appropriate for each farmer located in the same recommendation domain does not make sense. Even in on village, the conditions and opportunities for farming may vary so much with regard to types of soil, labour availability, income or land size, that it can be more relevant to increase the problem solving capacity of farmers than to provide one message supposed applicable to all farmers.

6. Last but not least limitation was that after the World Bank loan for the T & V system expired; many governments were not able or willing to continue to finance this system.

Single Window System of Extension in Maharashtra

Agriculture, Horticulture and Soil conservation and Watershed Development Department were re-organized and a single agency responsible for agricultural development at village level-'Single Window System' was

implemented on 1st July, 1998, the birth anniversary of Late. Vasantrao Nike (Legendary figure in green revolution).

In the earlier system only 64% staff was available at grass root level and 36% at apex level. Now, due to single window system, 81% staff will be made available at grass root level and 19% at apex level.

Salient Features of Single Window System:

1. Formation of separate offices at Circle and Taluka level.
2. Integrated planning of agriculture, soil conservation and watershed management and watershed management and horticulture departments by single extension worker.
3. Maximum staff available at village level for transfer / dissemination of Agricultural technology.
4. Increased participation of Agricultural Universities in dissemination and training in agricultural technology.
5. To enhance commercial, business minded farming, separate counter / office at district level.
6. More stress on technology transfer for horticulture department.
7. Additional area and officers / workers for fruit / horticulture nurseries.
8. Soil testing laboratories in all districts.
9. Project investigation department in all division for implementing future plans / projects.
10. Establishment of precaution team at State level for quality control.
11. Computerization facility upto sub-divisional level in the first phase.
12. Right / authority of input quality control upto taluka level.
13. To solve the problems of officer / worker staff regarding services, immediately staff welfare department constituted.
14. All the above aspects in reorganization achieved through earlier existing / sanctioned designation only.
15. Realistic, long term agricultural development plan for all districts.

Broad Based Extension (BBE)

Economic growth is an essential component of development; it is not the only as development is not a purely economic phenomenon. The common man in India, as also in other developing countries, expects a higher standard of living for himself, his family, his community and his nation. The village peoples also expect such standard of living. For that

purpose farmers are not concerned with crop production alone. They undertake a number of land based activities. Therefore, the focus of agricultural extension needs to be shifted form commodity production or crop production oriented to farmers' income oriented. That means, for development of farmer it is necessary to develop their economic status by improving other production with crop production. To improve their production capacity they have to improve resources, technical knowledge and skills. On this basis this broad based extension concept was emerge out.

The process of broadening scope of agricultural extension on bringing a number of farm activities in addition to the crop production under the umbrella of agricultural extension is known as broad based agricultural extension. For improving the overall development of farmer's regular flow technology through unified extension services together with specialized support to grass root level farmer is necessary Research system Extension System Meet the requirement

Farmer

Develop and Strengthen

Integrated Agricultural Complex

Comprising

1. Field crops.
2. Horticulture.

3. Forestry.
4. Agro-forestry.
5. Animal production including poultry, bee
6. keeping, sericulture and aquaculture.
7. Soil and water management.
8. Mushroom production.
9. Hi-tech agriculture.
10. Marketing.

CAPACITY BUILDING OF EXTENSION PERSONNEL AND FARMERS.

Capacity Building can be defined as "activities which strengthen the knowledge, abilities, skills and behaviour of individuals and improve institutional structures and processes such that the organization can efficiently meet its mission and goals in a sustainable way.

Training is one of the components of capacity building.

I. Meaning of training:

Training means to educate a person so as to be fitted, qualified, and proficient in doing some job. For an extension worker, training includes education which aims at bringing a desirable change in the behaviour of the trainee / learner.

This change requires a change in his knowledge, skills, attitudes, values, beliefs and understandings so that he fits in his job and become qualified and proficient in communicating the desirable knowledge to his client system i.e., the farmers.

II. Definition of training

Training is a process of acquisition of new skills, attitudes and knowledge in the context of preparing for entry into a vocation or improving ones productivity in an organization or enterprise.

Training is defined as the development of knowledge and skills required for employee in particular occupation. It is filling up the gap between competence of employee and what the organization requires.

Competence of the employee Organizational Requirement GAP

EDUCATION VERSUS TRAINING:

Sr. No.	EDUCATION	TRAINING

1.	Education is concerned with increase in general knowledge and understanding of total environment	Concerns with increase in knowledge and skills in doing a specific job
2.	It concerns with opening out the world to the student so that he chooses his interests, mode of living and career	Preparing the individual to perform specific job assigned to him
3.	It is general preparation and a person receives education before entering in to employment	Specific preparation received just before employment or during employment for performing tasks assigned by organization
4.	Main purpose is enrichment of personal self. Here **learner** is benefited. It is a process of intellectual development	Purpose of training is to impart special skills to the trainees. Here the **organization** is benefited
5.	Methods of evaluation are formal	Methods of evaluation are informal
6.	Education is preparation for life not for earning a livelihood	Training is always understood to have a vocational purpose
7.	It refers to a more general process of intellectual development	It refers to the process of developing knowledge, skills and attitudes in the person to be applied to the performance of individual's specific work situation
8.	It is a long term process	It is a short term process

Training is the process of acquiring specific skills to perform a job better. Usually an organization facilitates the employees" learning through training so that their modified behavior contributes to the attainment of organizational goals.

Types of training given to extension personnel – This is of broadly two types

1. Pre-service Training: It is a process through which the individuals are made ready to enter a certain kind professional job, as in agriculture, medicine or engineering. It is a professional training prior to any appointment, oriented to make an individual prepared to enter into a new profession.

Swanson (1984) defines it as a programme of training activities that prepares an individual for a career in extension, and usually leads to some type of diploma, certificate, degree, or other qualification in one or more of the following agriculture, fisheries, forestry, animal and/or veterinary science or home science.

The state departments of Agriculture now prefer University graduates for entry into their extension services and similarly the Veterinary

department prefers to take only Veterinary graduates released from the Universities.

2. In-Service Training: It is meant for in service candidates who are on the job. In-service training is a process of staff development for the purpose of improving the performance of an incumbent holding a position with assigned job responsibilities. It promotes the professional growth of individuals.

In-service training is a problem centered, learner oriented and time-bound series of activities, which provide the opportunity to develop a sense of purpose. Broaden perception of the participants and increase their capacity to gain knowledge and mastery of techniques.

According to Arnon (1987), even for the University graduate, learning cannot cease on completion of formal studies. He said that the in-service training is given with the following objectives:

1. To keep up with research by regular meetings between researchers and extension workers, joint colloquia etc.
2. To impart basic knowledge not only in the fields directly related to agriculture, but also in sociology, economics, psychology etc.
3. To improve extension methods, by constant evaluation of methods, the joint study of research findings and extension methods, exchange of experiences.

In-Service training is of different types, some of them are as follows:

i. Orientation Training

This training is given usually to newly appointed extension personnel. It provides an introduction to public employment and provides answers to questions which a newly recruited person is likely to ask. This term is also used for training in-service extension personnel in a new responsibility like a new operational programme so that personnel are appropriately oriented towards meeting the requirements of new situation.

ii. Induction / portal / vestibule Training

Induction training is given to new extension personnel immediately after they have been employed and before they are assigned to work in particular area usually as an Assistant Agriculture Officer or Agriculture Officer, or Extension Officer.

iii. Maintenance or refresher training:

This training is originally started for trainers of the training institutes and Universities for refreshing their knowledge and skills for imparting them to trainees. The term indicates any new training for updating professional competence of extension personnel notably in the subject matter area of specialization. This training is usually imparted in the later career of extension personnel.

This training is having considerable importance to extension personnel as it relates to updating to technical knowledge and competence of extension personnel. This deals with new information and new methods and review of older materials. This type of training is given to the employees to keep them at their peak performance level and also prevent them from getting into a rut.

iv. Retraining:

It refers to the efforts designed to prepare an individual for a new assignment or a broadened aspect of the old specialty.

v. Career or development training / Training for professional qualification:

This type of training is designed to upgrade the knowledge, skills and ability of employees to help them assume greater responsibility in higher positions. This training may lead to the acquisition of higher degree (undergraduate or postgraduate) or diploma by the employees, to motivate them to move up higher levels of administrative hierarchy (promotions).

The Directorate of Extension is operating such a scheme on an yearly basis under which, in addition to salary and allowances which personnel get from their own employing organizations, it pays fixed monthly stipends to extension personnel to cover their cost of boarding, lodging and tuition fees. Only meritorious extension personnel and that too below the age of 45 years are eligible for such courses.

TRAINING TO FARMERS:

There is a regular farmer training programme in all agricultural universities. There are training centers for young farmers. In some states, they also arrange short courses for the farmers. The training includes crop raising, animal feeding and management, plant protection. For such training the following points should be considered.

1. Time of holding the training: It should be at the convenience of the farmers i.e., when they are comparatively free from such of the agricultural operations. This will differ according to the seasons and climate. In case A.P., March to May for Kharif crop and August to September for rabi crop is ideal time for conducting training courses in Agriculture.

2. Duration of course: For farmers who are engaged in farming, a one week course is sufficient for special topics such as use of irrigation facilities and water management, operation of implements and plant protection etc, it may be of two or three days duration.

3. Venue of course: Besides physical facilities, the appropriate environment under which the course is to be conducted i.e, where the farmers car see the actual crop, method demonstrations, operations with some machines and implements or some treatments such as fertilizer application, venue has to be given due considerations.

4. Production cum demonstration camps and discussion groups of the farmers: These should be arranged in the villages because the farmers cannot afford to remain away from their farms and homes. These should be organized before each main crop. The duration should be 1-2 days only, and the trainees or participants should be from the same village or groups of nearby villages, sothat the farmers can walk back to their home the same evening. This will provide technical knowledge to the farmer's right in their villages, and the topics can be related to their local problems.

Lecture No. 16: Farmers Training Centre (FTC) – Objectives and trainings organised; Krishi Vigyan Kendra (KVK) – mandate; District agricultural Advisory and Transfer of Technology Centre – (DAATTC) – objectives.

FARMERS TRAINING CENTRE(FTC)

Farmers Training Centres are the training centres of Department of Agriculture working in all the districts of Andhra Pradesh concentrating on capacity building of the farmers. FTCs have been established to improve the efficiency of farmers who have crucial role to play in accelerating by providing necessary knowledge and skills. Training programmes cover practicing farmers, farm women and young farmers. In A.P. Farmers training programme was started in 1968. First FTC was established in **1969** at **Gopannapalem** in West Godavari district.

The main objective is to popularize latest technology among the cultivators by organizing short term training courses at village level, specially to small and marginal farmers, farm women and convenors of Charchamandals (Discussion Group).

OBJECTIVES:

1. To conduct training programmes for farmers for speedy diffusion of knowledge regarding modern agricultural techniques.

2. To develop efficient farm leadership
3. To inculcate among farmers the habit of seeking timely guidance from agricultural extension personnel and other experts.

STAFFING PATTERN:

FTC is provided with District Training Officer (DTO in the cadre of Deputy Director of Agriculture), Radio Contact Officer, two training officers (one for male and other for female), and two demonstrators.

Each District is having one FTC. FTC is provided with one demonstration cum exhibition van. Training programmes were organized by PERIPATETIC (mobile) team in villages on HYVs with the use of A.V. aids. Functional literacy programme was integrated with the discussion groups. FTC staff participates in arranging exhibitions on the occasions of Kisan Melas, Jatharas.

The major functions of FTC include Training, publications and arranging exhibitions.

Types of Trainings conducted by FTC:

The FTC conducts two types of trainings. They are 1) Non-Institutional and 2) Institutional.

The details are given below:.

I. NON-INSTITUTIONAL TRAININGS:

(1) **Production cum Demonstration training Camps**: The training camps are organized in each village extension worker circle to give training on H.Y.V's to farmers before the crop season with the objective to give a brief but complete demonstration of various techniques of growing the particular crop. Ttraining is carried out by experienced field staff.

(2) **Farmers Discussion groups**: Discussion groups consist of farmers and farmwomen. The discussion group serves as a forum for exchange of views and field problems faced by them.

il. Institutional Training:

i. **Short Term Courses for Farmers**: These courses are developed to acquaint farmers with modern scientific technique of farming. These courses are conducted at the mandal headquarter or in the villages. Stipend is also paid to meet the incidental charges to each farmer for attending the training programmes. These are usually for 1 or 2 days only.

2. **Short Term Courses for farmwomen**: Training content includes the storage of agricultural produce, HYV grains, and methods of cooking, nutritional principles. Stipend is also paid.

3. National Demonstrations: National demonstrations are conducted in each district with emphasis on multiple cropping including HYVs of improved food crops in their region. The objective is to provide an opportunity to the farmer in the neighbourhood to see for themselves the methods and results of new agricultural practices recommended. The Subject Matter Specialist looks after the proper conduct of these demonstrations.

4. Study /Conducted Tours: To make the farmers training more effective through visual education and exchange of experiences, the conducted tours are organized. The place of visit may be research stations, agricultural university, experimental farms, private farms of progressive farmers.

5. Training courses for Conveners of Charcha Mandals:

a. Specialized training for 3 days
b. Correspondence courses or radio broadcasts on agriculture technology
c. Annual prizes for best run charcha mandals

FTC also conducts training programme for Water Users Associations (WUAs)

FTC was actively involved in conducting Agricultural Market Committee Level training programmes to farmers

Publications: : FTC regularly publishes "Vyavasaaya Samachara Lekha" every month. Leaflets, folders are also published on topical interest.

KRISHI VIGYAN KENDRA (KVK) (AGRICULTURAL SCIENCE CENTRE)

The first KVK was established in 1974 at Pondicherry under Tamil Nadu Agricultural University. The **Krishi Vigyan Kendra** (KVK), according to Prasad, Choudhary and Nayar (1987), is designed to impart need-based and skill-oriented vocational training to the practicing farmers, in-service field level extension workers, and to those who wish to go in for self-employment. **The first KVK was established in 1974 at Pondicherry** under Tamil Nadu Agricultural University. The priority for establishing KVKs is given to hilly areas, drought prone areas, forest areas, coastal areas, flood prone areas, forest areas, coastal areas, flood prone areas, and areas dominated with tribal farmers, weaker sections, small farmers and landless labourers. The objective is to gradually cover the entire country with one KVK in each district, priority being given to the backward areas.

The basic concepts of a KVK are-

1) The center will impart learning through work-experience and, hence, will be concerned with technical literacy, the acquisition of which does not necessarily require as a precondition the ability to read and write.

2) The center will impart training only to those extension agents who are already employed or to practicing farmers and fishermen. In other words, these centers will cater to the needs of those who are already employed, or those who wish to be self-employed.

3) There will be no uniform syllabus for a KVK. The syllabus and programme of each center will be tailored according to the felt needs, natural resources and the potentials for agricultural growth in that particular area

The three fundamental principles of KVK are _ Agricultural production as the prime goal _ Work-experience as the main method of imparting training and _ Priority to weaker sections of the society.

The main idea is to influence the productivity to achieve social justice for the most needy and deserving weaker sections of the society like the tribal farmers, small and marginal farmers, agricultural labourers, drought and flood affected farmers, and so on.

Need-based training courses are designed for different types of clientele. Courses are based on the information received through family and village survey. No certificate or diploma is awarded irrespective of the duration of the courses. After the training, follow-up extension programmes are organized for converting the acquired skills of the trainees into practice. While designing the courses, the concept of farming system is taken into account to make the enterprises commercially viable.

MANDATE:

The mandate of a KVK is unique for it and is determined on the basis of the most important needs of the clientele, their resources and constraints, and nature of the ecosystem. The success of a KVK is judged by the extent to which it fulfills obligations specified in the mandate.

1. On-farm testing on farmers fields of proven technologies in agriculture and allied fields.
2. Organising Vocational Trainings in agriculture and allied areas
3. Conducting frontline demonstrations on major cereal, oilseeds, pulses and other important crops

4. Organinsing inservice training programmes to field / local extension functionaries in emerging advances in agriculture and allied areas.

The KVKs are fully funded by the Indian Council of Agricultural Research (ICAR). Initially, one KVK for each district was thought of and now two KVKs are also established in certain districts being the largesr ones. Though KVKS are sponsored by ICAR they are working under different administrative controls viz., SAUs, NGOs and ICAR. In Andhra Pradesh at present there are 16 KVKs (Adilabad, Rudrur, Malyal, Wyra, Kampasagar, Palem, Kadapa, Anantapur, Kalyanadurg, Yemmiganur, Nellore, Darsi, Garikapadu, Undi, Amadalavalasa, Rastakuntabai) are working under the control of ANGRAU. Three KVKs are under the control of AP Horticultural University and some are to come under the control of SV Veterinary University. Kalvacharla of East Godavari district and Hayatnagar of Ranga Reddy district are with ICAR. NGO KVKs include Yagantipalli, Kothapet, Zaheerabad, Gaddipalli, Jammikunta, Kavuru, Elamanchili and another one at near Tirupati..

DISTRICT AGRICULTURAL ADVISORY AND TRANSFER OF TECHNOLOGY CENTERS (DAATTCS) / ERUVAKA KENDRAS) – ANGRAU ESTABLISHED EXTENSION CENTRES

Believing in the concept that every research scientist should also be an extension worker in serving farmers, the University works in active association and close co-operation with farmers through frequent farmer-scientist interactions joint and diagnostic field visits enabled University scientists to earn good will confidence and credibility of farmers. In order to reinforce and strengthen this mode of approach to solve many problems and complicated issues of farmers with ease, the University reorganized its extension activities by establishing the "District Agricultural Advisory and Transfer of Technology Centers" at all the 22 district head quarters in the state, barring Hyderabad urban district during 1998. Presently each DAATT Centre has 3 scientists having specialized in crop production, Crop protection, transfer of technology and Veterinary. It is ultimately proposed to station eight scientists and each center.

Objectives:

1. To assess and refine the technologies generated by the research scientists and their suitability to different farming situations.
2. To assess the potentials of the district by developing database in order to exploit district resources and develop action plans in cooperation with line departments.
3. To conduct field diagnostic visit, identify the field problems and provide scientific solutions.
4. To organize Kisan Melas in coordination with line departments.
5. To extend scientific expertise to the line departments in the conduct of training programmes to officials, farmers and input agencies.
6. To establish linkages with research institutes and other district units.
7. To assist and implement the RAWE programme, internship programme and RHWE programme for Agriculture, Veterinary and Home Science students, respectively.
8. To maintain an useful Information Center.
9. To supply need based scientific/popular information to the line departments on enterprises for their printing/multiplication and distribution to the farmers.
10. To coordinate with All India Radio, Television and Print Media for transmission of needed agricultural information in the district.
11. To implement any other extension programme that may be taken by the University, from time to time, in coordination with the line departments.

DAATT Centre is an independent unit with senior member as Coordinator. The center is under the overall technical and administrative control of Associate Director of Research of the zone concerned who is in turn responsible to Director of Extension on extension activities of each district center in his jurisdiction.
The District Agricultural Advisory and Transfer of Technology Centre (DAATTC) works mainly on **Farmer-Extension-Research** interaction model
The DAATTC though independent works in coordination and cooperation with the line
departments to avoid any duplication of functions.
Areas of functioning of the center are decided by the District Coordination Committee which decides joint seasonal action plans of the center well in advance of the *kharif* and *rabi* seasons
Location: The centres are located at Agricultural Market Centres in all the district head quarters barring Hyderabad. Recently the DAATTC, Guntur, Kadapa, Nellore, Srikakulam, Vizianagaram are relocated to the Research Station premises maintaining independent entity.
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DIFFUSION AND ADOPTION OF INNOVATION

DIFFUSION

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system.

It is a process by which innovations are spread to the members of social system. In this process new ideas are spread from its source of invention or creation to its ultimate users or adopters. Diffusion is a special type of communication. It is concern with new ideas or messages, whereas communication includes all type of message or ideas.

INNOVATION

Innovation is an idea, practice, or object perceived as new by an individual.

If the idea seems new to the individual, it is an innovation. Newness of an innovation may be expressed in terms of knowledge, persuasion or a decision to adopt. The technologies, practices developed through research are innovations.

ADOPTION

Adoption is a decision to make full use of an innovation as the best course of action available.

Adoption is the use of new idea continuously on a full scale.

Adoption is essentially a decision making process. Decision making is a process which may be divided into a sequence of stages with a distinct type of activity occurring during each stage. Similarly, the way in which individual adopts an innovation is viewed by most researchers as a process, a series of related events in a time sequence.

Attributes of innovation

Attributes are qualities, characteristics or traits possessed by an object. An innovation has some qualities or characteristics. It is not the

intrinsic quality, but the quality or character of the innovation as people see to them, is important for extension. The perceived attributes of innovations which are basic to extension are as follows.

1. Relative advantage: is the degree to which an innovation is perceived as being better than the idea it **supersedes.** The relative advantage may have a number of dimensions. For example, if a new technology or practice gives more yield or income' or saves time, labour and cost; or has less risk than the existing one; it has more relative advantage. Multiple use of an innovation may be a form of relative advantage. For example, an equipment or material which may be used for a number of activities has more advantage than an equipment or material which can be used for a single purpose. The advantage of location for specific enterprises in specific areas may provide some relative advantage. The innovations which have more relative advantage are likely to be adopted quickly.

2. Compatibility: is the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters. Compatibility has at least two dimensions – situational compatibility and cultural compatibility. When a new crop variety suits the agroclimatic condition of the farmer, it indicates situational compatibility. When a breed of livestock advocated to the farmer is in agreement with their beliefs and values, it is cultural compatibility.

The name given to an innovation may affect its compatibility. Compatibility of an innovation is essential for its adoption.

3. Complexity: is the degree to which an innovation is perceived as relatively difficult to understand and use. An innovation should, as far as possible, be less complex for the farmers to understand and use. However, complexity of an innovation may not deter its adoption, provided it has more relative advantage. For example, many of the high yielding technologies like HYV crops, crossbred cattle, composite fish culture etc., are quite complex. Still, their diffusion have been quite high, which may be due to their high relative advantage in terms of more yield and income and shorter gestation period.

Complex technologies often require complementary adoption. For example, adoption of high yielding technologies require adoption of balanced nutrition practices, appropriate protection technology and better management methods, to get the best results. Complex technologies, because of their complicated and intricate nature, require consistent training and communication support for the clientele, for their adoption and continued use.

4. Trialability: is the degree to which an innovation may be experimented with on a **limited basis.**

Adoption of new seeds and fertilizers are more, compared to new farm machinery, simply because seeds and fertilizers may be purchased in small units and tried, whereas, purchase of farm machinery, requires large investment and cannot be tried in parts. The mini-kit demonstrations have

helped in spreading the cultivation of high yielding variety crops as this method involves small scale trial by the farmers. Earlier adopters appear to be more concerned about the trialability of an innovation than later adopters.

5. Observability: is the degree to which the results of an innovation are visible to others. The visible impact of an innovation facilitates its diffusion in the social system. For example, application of balanced fertilizer in crop plants has almost always been recommended to the farmers. In practice, farmers generally use more of nitrogenous fertilizers. It is because, the effect of nitrogenous fertilizer is very obvious in the eyes of the farmers – the plants "jump" the leaves turn green, whereas, the effects of phosphatic and potassic fertilizers are not so evident.

Understanding the beneficial effects of balanced fertilization by the farmers, which is more profitable in the long run, requires high level comprehension, which n ay be brought about by intensive training and communication.

Disease control has two aspects-preventive and curative. Preventive innovations in disease control are generally less costly than the curative innovations, but the results of preventive innovations are not so obvious, compared to those of the curative innovations. That is why technologies like treatment of seeds; preventive vaccinations etc. have been less adopted. Treatment of seed potato has, however, very high rate of diffusion, because preventing disease in this high investment crop brings higher return, i.e., has high relative advantage.

Predictability has also been perceived as an attribute of innovations (Napier, 1991).

6. **Predictability** refers to the degree of certainty of receiving expected benefits from the adoption of an innovation. Subsistence farmers are often very cautious while making adoption decisions, because crop failure or substantial reduction in outpu due to failure of agricultural innovations to achieve expected production goals, can result in loss of meager landholdings and starvation of the family. Under such conditions farmers are reluctant to adopt any technology or technique which introduces a higher level of uncertainty into the operation of the farm enterprise.

It may be generalized hat the attributes - relative advantage, compatibility, trialability, obser ability and predictability of an innovation, as perceived by the members of a social system are positively related to its rate of adoption. The complexity of an innovation, as perceived by the members of a social system, is negatively related to its rate of adoption.

INNOVATION-DECISION PROCESS

The Innovation - Decision process is the process through an individual (or other decision making unit) passes (1) from first knowledge of an innovation, (2) to forming an attitude toward the innovation, (3) to a decision

to adopt or reject, (4) to implementation of the new idea, and (5) to confirmation of this decision.

This process consists of series of actions and choices over time through which an individual or an organization evaluates a new idea and decides whether or not to incorporate the new idea into the ongoing practice. The innovation-decision is a special type of decision-making; it has certain characteristics not found in other kinds of decision-making situations. In the case of the adoption of an innovation, an individual must choose a new alternative over those previously in existence.

Stages in Innovation-Decision process

1. Knowledge Stage

Innovation-decision process begins with knowledge stage, which commences when the farmer is exposed to the innovation's existence and gains some understanding of how it functions.

The innovation-decision process is essentially an information-seeking and information –processing activity in which the individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation. The individual wishes to understand the innovation, and give meaning to it. A need can motivate an individual to seek information about an innovation and the knowledge of an innovation may develop the need.

2. Persuasion Stage

At the persuasion stage in the innovation-decision process, the individual forms a favourable or unfavourable attitude towards the innovation.

Whereas the mental activity at the knowledge stage was mainly cognitive (or knowing), the main type of thinking at the persuasion stage is affecting (or feeling). Until the individual knows about a new idea, of course, he cannot begin to form an attitude toward it.

At the persuasion stage the individual becomes more psychologically involved with the innovation. Now he actively seeks information about the idea. His personality as well as the norms of his social system may affect where he seeks information, what messages he receives, and how he interprets the information he received. Thus, selective perception is important in determining the receiver's communication behaviour at the attitude formation stage. For it is at the persuasion stage that a general perception of the innovation is developed. Such perceived attributes of an innovation as its relative advantage, compatibility, and complexity are especially important at this stage.

In developing a favourable or unfavourable attitude toward the innovation, the individual may mentally apply the new idea to his present or anticipated future situation before deciding whether or not to try it. This might be thought of as a vicarious trial.

3. Decision Stage

At the decision stage in innovation-decision process, the individual engages in activities which lead to a choice to adopt or reject the innovation.

The individual puts the innovation to a small scale trial in own situation. Considering the relative advantage, risk involved and many factors like availability of market, need for the family etc. the individual takes a decision to adopt or reject the innovation.

Adoption is a decision to make full use of innovation as the best course of action available.

Rejection is a decision not to adopt an innovation.

Innovations, which can be divided for trial use, are generally adopted more rapidly. Most farmers who try an innovation then move to an adoption decision, if the innovation has a certain degree of relative advantage.

4. Implementation Stage

Implementation occurs when an individual (or other decision making unit) puts an innovation into use.

Until the implementation stage, the innovation-decision process has been a strictly mental exercise. But implementation involves overt behaviour change, as the new idea is actually put into practice.

At this stage the individual is generally concerned with where to get the innovation, how to use it and what operational problems will be faced and how these could be solved. Implementation may involve changes in management of the enterprise and/or modification in the innovation, to suit more closely to the specific needs of the particular person who adopts it.

5. Confirmation Stage

At the confirmation stage the individual (or some decision making unit) seeks reinforcement of the innovation-decision already made or reverse a previous decision to adopt or reject the innovation if exposed to conflicting message about the innovation.

Most of the researchers indicated that a decision to adopt or reject is not the terminal stage in the innovation-decision process. Human mind is in a dynamic state and an individual constantly evaluates the situation. If the individual perceives that the innovation is consistently giving satisfactory or unsatisfactory results the person may continue to adopt or reject the innovation as the case may be. At the confirmation function the individual seeks reinforcement for the innovation-decision he has made, but he may reverse his previous decision if exposed to conflicting message about the innovation. The confirmation stage continues after the decision to adopt or reject for an indefinite period in time. Throughout the confirmation function the individual seeks to avoid a state of internal disequilibrium or dissonance or to reduce it if it occurs.

Farmer seeks to accomplish it by changing his knowledge, attitude or actions.

Rejection is decision not to adopt an innovation. This may be of two types, active rejection and passive rejection. When a farmer rejects after adopting the innovation including even its trial is called Active Rejection and simply non- adoption is called Passive Rejection.

ADOPTER CATEGORIES

There are different categories of farmers. According to Rogers (1971), the farmers based on their innovativeness can be classified as

1. Innovators (Venturesome)
2. Early adopters (Respectable)
3. Early majority (Deliberate)
4. Late majority (Skeptical)
5. Laggards (Traditional)

All individuals in a social system do not adopt an innovation at the same time. Rather, they adopt in an ordered time sequence, and they may be classified into adopter categories on the basis of when they first begin using a new idea. In technology transfer programme, it is of great practical utility for the extension workers to identify the individuals who are likely to adopt innovations early and who may lag behind. The adoption of an innovation over time follows a normal, bell-shaped curve when plotted over time on frequency basis.

Characteristics of adopter categories

The detailed information on the characteristics of adopter categories is presented below

1. Innovators: (Venturesome)

1. Have larger farms.
2. High net worth and risk capital.
3. Willing to take risks.
4. Usually not past middle age
5. Generally well educated
6. Have respect and prestige in progressive communities but not in conservative type of communities.
7. Mentally alert and actively seeking new ideas.
8. They have many formal and informal contacts outside the immediate locality.
9. They often by-pass the local extension worker in getting information from the originating sources, and may learn about new things even before he does. They sometimes manage to get samples of seeds or chemicals even before they are released for public use.
10. They subscribe to many farm magazines and specialised publications.
11. Other farmers may watch the innovators and know what they are doing but the innovators are not generally named by other farmers as "neighbours and friends" to whom they go for information.

2. Early Adopter: (Respectable)

1. Younger than those who have a slower adoption rate, but not necessarily younger than the innovators
2. They are quickest to use tried ideas in their own situations.
3. Have large farms.
4. Higher education than those who adopt more slowly.
5. High income.
6. They participate more in the social activities of the community.

7. They also participate more in government programmes.
8. This group usually furnishes a disproportionate amount of the formal leadership (elected positions) in the community.
9. They read papers and farm journals and receive more bulletins than people who adopt later.
10. They may be regarded as community adoption leaders.

3. Early Majority: (Deliberate)

1. Slightly above average in age, education and farming experience.
2. They take a few more farm journals and bulletins than the average.
3. They have medium high social and economic status.
4. Less active in formal groups than early adopters, but more active than those adopting later.
5. In many cases, they are not formal leaders in the association
6. They also attend extension meetings and farm demonstrations.
7. They are most likely to be informal resources than early adopters and innovators, and so cannot afford to make hasty or poor decisions.
8. They associate mainly with people of their own community.
9. They value highly the opinions their neighbours and friends hold about them; for this is their main source of status and prestige.
10. They are mostly mentioned as "neighbours and friends"
11. Limited resources

4. Late Majority: (Skeptical)

1. Adopt new ideas just after the average members.
2. Those in this group have less education and are older than the early majority.
3. They participate less in formal groups.
4. They take fewer leadership roles than the earlier adopters.
5. They take and read fewer papers, magazines and bulletins, than the early majority.
7. They do not participate in as many activities outside the community as do people that adopt earlier.

5. Laggards: (Traditional)

1. Least education.
2. Oldest.
3. Participate least in formal organisations, cooperatives and government programmes.
4. They hardly read farm magazines and bulletins.
5. Most localite.
6. Do not have opinion leadership.
7. Resource-poor people.
8. Little land holding.
9. Live in disadvantaged area and having least urban influence.

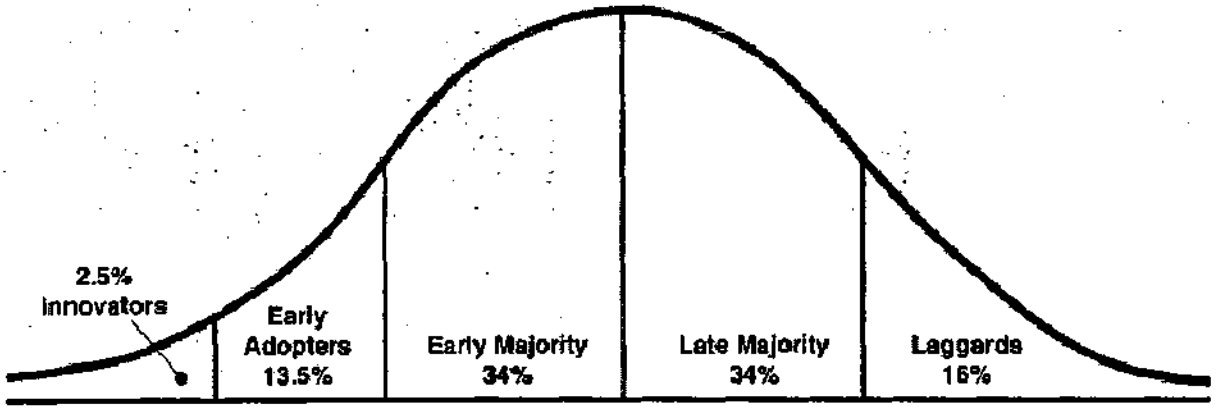

Fig. Adopter categories on the basis of Innovativeness

EXTENSION TEACHING METHODS

MEANING AND DEFINATION

A method is a way of doing something, an orderly arrangement of a set of procedures. Thus it involves a sequence of progressive steps in an orderly and logical regularity in order to accomplish some task or purpose.

An extension teaching method may, then, be defined as a sequence of progressive steps, undertaken to create situations that are conducive to effective learning.

According to Leagans (1961), extension teaching methods are the devices used to create situations in which communication can take place between an instructor and that learner.

As Ensminger (1957) said, before an extension worker can become efficient in the use of methods, he must know what methods are available, when to use a given method, and become effective in using each.

However, normally no extension worker has ability to use all methods with equal skill. Further, there is no one method that is best for all situations alike and hence calls for different method (s). It is also obvious that no one method can reach all the audience. Behavioural changes required on the part of the learners may also require several exposures with the same, different or a combination of methods. Research bears ample evidence to suggest that a combination of methods or media-mix is required for effective technology transfer.

FUNCTIONS

The following are the functions of extension teaching methods :

(1) To provide communication so that the learner may see, hear and do the things to be learnt.

(2) To provide stimulation that causes the desired mental and or physical action on the part of the learner.

(3) To take the learner through one or more steps of teaching-learning process, viz. attention, interest, desire, conviction, action and satisfaction

CLASSIFICATION

Wilson and Gallup (1955) classified extension teaching methods according to their use and form. Bains (1987) attempted to classify them according to their use, form, stages of learning process, stages of adoption process, categories of adopters, initial cost involved, cost per unit of results obtained, skill required in using them, time consumed in using them and according to behavioural changes intended. However, most of these

classifications are only of academic interest. The most widely used as well as useful classification of extension teaching methods is according to use.

Classification of extension teaching methods according to use

Individual Contact	Group Contact	Mass Contact
Farm and home visits	Result demonstration	Farm publications
Farmer's call	Method demonstration	Mass meeting
Personal letter	Group meeting	Campaign
Telephone call	Small group training	Exhibition
Adaptive trial	Field day	Newspaper
	Study tour	Radio
		Television
		Posters

Another classification of extension teaching methods which is very common in extension publications is according to their form

- **Classification of extension teaching methods according to form**

Written	Spoken	Visual	Spoken and Visual
Bulletins	Meetings	Result demonstrations	Method demonstration
Leaflets	Farm and home visit	Exhibits	Result demonstrations
Personal letters	Office calls	Posters	Television
Circular letters	Radio and recordings	Charts	Movies
Farm journals	Telephone calls	Slides	Puppets
		Film strips	Campaigns
		Flash cards	
		Flannel graphs	
		Bulletin boards	

INDIVIDUAL CONTACT METHOD

Extension methods under this category provide opportunities for face-to-face or person-to-person contact between the rural people & the extension workers. These methods are very effective in teaching new skills & creating goodwill between farmers & the extension workers.

The advantages of the individual method are :

a. It helps the extension agent in building rapport.

b. It facilitates gaining first hand knowledge of farm and home.

c. It helps in selecting administrators and local leaders.

d. It helps in changing an attitude of the people.

e. It helps in teaching complex practices, and

f. It facilitates transfer of technology effectively.

The limitations of the individual method are:

a. This method is time consuming and relatively expensive.

b. It has low coverage of audience, and

c. Extension agent may develop favoritism or bias towards some persons.

FARM AND HOME VISIT

Farm and home visit 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 advice and assist in solving specific problems and teach skills.
4. To sustain interest.

Technique

Planning and preparation

- Decide on the audience and the objective- whom to meet and what for?
- Get adequate information about topic. Contact research if needed.
- Collect relevant publications and materials to be handed over.
- Make a schedule of visits to save time and energy.
- If possible, send advance information.

Implementation

- Visit on scheduled date and time or according to convenience of the farmer and the person is likely to listen.
- Create interest of the farmer and allow the individual to talk first.
- Present the message or point of view and explain up to the satisfaction of the farmer.
- Answer to questions raised and clarify doubts. Hand over publications.
- Try to get some assurance for action.

Follow-up

- Keep appropriate record of visit.
- Send committed information or material.
- Make subsequent visits as and when necessary.

Advantages

- Provides extension worker with first hand knowledge
- Builds confidence
- It helps to identify local leaders
- Develops good public relations

• Useful in contacting those who do not participate in extension activities and who are not reached by mass media

Limitations

- Only limited number of contacts may be made

- Time consuming and costly method
- Attention may be concentrated on a few big and progressive farmers; neglecting the large number of small, marginal, tribal farmers, landless labour and backward people; which may prejudice them.

RESULT DEMONSTRATION

Result demonstration 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 group of people in their neighbourhood. This is a very effective method for the transfer of technology in a community.

Demonstration may stimulate farmers to try out innovations themselves, or may even replace a test of the innovation by the farmers. They can show the causes of problems and their possible solutions without complicated technical details. A great advantage of demonstration is seeing how an innovation works in practice.

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 results.
3. To build up confidence of the farmers and extension agents.
4. To develop innovation leadership.

Technique

Planning and preparation

- Analyse farmers' situation and select relevant profitable practices, in consultation with research worker and farmers.
- Select a few responsible and cooperating farmers having adequate resources and facilities and having acceptance in the local community for conducting the demonstration. This, however, does not mean that big farmers are to be selected.
- Select representative locations for conducting the demonstrations where it will be easily visible to a large number of people in the community.
- Prepare a calendar of operations.

Implementation

- Explain the objectives and steps to the demonstrating farmers.
- Organize materials and equipments necessary for conducting the demonstrations.
- Give adequate publicity about the demonstrations.
- Start the demonstration on the scheduled date and time, in front of those who may be present. Explain the objectives to those who are present.
- Arrange method demonstration where a new skill is involved.
- Put up suitable signboard for each demonstration in prominent places. The signboard should be colourful and visible from a distance. Local language should invariably be used on the signboard.
- Ensure that all critical operations are done in time and try to supervise them personally.
- Conduct field day around successful demonstrations.
- Take photograph. Help the demonstrating farmers to maintain records.
- Motivate as many farmers as possible to remain present at the time of final assessment of the result.
- Let the demonstrating farmers explain to the visitors as far as possible.

- Analyze and interpret the result, and compare them with the farmers' existing practice.
- Emphasize applicability of the new practice in the farmers' own situations.

Follow-up

- Use the result of demonstrations in future extension work and also pass on to the mass media for further dissemination.
- Utilise demonstrating farmers in farmers' meetings and training programmes.
- Prepare visual aids, particularly photographs, coloured slides, charts etc. on the demonstrations for future extension programmes.
- Avoid conducting subsequent demonstrations with the same farmers.

Advantages

- Create confidence among extension worker and farmers about new recommendations
- Useful in introducing new practice
- Contribute in locating local leaders
- Provide teaching material

Limitations

- Need more time, energy and funds for extension work.
- Unsuccessful demonstrations may cause some setback to extension work.

FIELD TRIALS

Field trials are the trials to fit the general recommendations derived from applied research to different farm situations in an area. These trials are to find out, how far the recommendations fit into different farming systems in the area. Field trials are the final testing ground for the recommendations from the angle or its relevance to a specific area. This may be regarded as an on-farm participatory technology development process in which farmer's choice and farmer's 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.
3. To build up confidence of the extension agents, research workers and farmers.
4. To act as a precaution against insignificant, faulty recommendations.

Technique

Planning and preparation

- Select new and promising practices suitable for the area in consultation with research workers and farmers.
- Select a small number of innovative farmers for conducting the trials.

Implementation

- Explain the objective to the farmers. Make it clear that it is a simple trial in a small portion of the plot and does not involve great risk.
- Supply the critical inputs in time and supervise all important steps personally.
- Assist the farmers to maintain accurate records.

Follow-up

- Get the reactions of the farmers.

- Discuss the results with research worker and farmers and explore the suitability or otherwise of the practice for the area.
- If required, repeat the trial for one or two years more.
- On the basis of the performance, take a decision to recommend the practice for general or not.

Limitations

- Being scattered, the trials may suffer from lack of adequate supervision of the extension agent.
- Satisfactory results depend on the clarity of objective and careful selection of the practice and the farmers.

GROUP CONTACT METHOD

Under this category, the rural people or farmers are contacted in a group which usually consists of 20 to 25 persons. These groups are usually formed around a common interest. These methods also involve a face-to-face contact with the people & provide an opportunity for the exchange of ideas, for discussions on problems & technical recommendations & finally for deciding the future course of action.

The advantages of the group methods are:

a. It enables, extension agent to have face to face contact with a number of people at a time.

b. It can reach a select part of the target group.

c. It facilitates sharing of knowledge and experience and thereby strengthen learning of the group members.

d. It satisfies the basic urge of people for social contacts.

e. It motivates people to accept a change due to group influence.

f. It is less expensive than individual method due to more coverage.

The limitations of the group methods are :

a. Wide diversity in the interest of the group members may create a difficult learning situation.

b. Holding the meeting may be regarded as an objective in itself and

c. Vested interests, caste groups and village fractions may hinder free interaction and decision making by the group members.

GROUP DISCUSSION:

It is a form of discussion or dialogue between two or more people to exchange information of a common topic with an aim to understand and / or solve the problem. Group discussion is a very significant method for extension work. It assumes that the members involved in discussion are equal in status and every participant has some experience or information to contribute. It is specially suited to work with adults who prefer sharing of information than being instructed. The members are free to question to each other.

Objectives

1. To exchange of experience and information.
2. To gain better understanding of a problem.
3. To find solution to a problem felt by the group.

4. To training people in leadership skills.

5. To plan a programme of action.

Technique

Planning

- Make arrangements for physical facilities viz. sitting place, furniture, public address system, drinking water etc.
- Inform everyone about time and place.
- Circulates materials needed for discussion.
- Arrange for someone to present the issue for discussion alongwith requisite background.
- Keep minimum visual aids like chart or chalk board for presenting important points.
- As farmer do not easily open up before expert, it is necessary to plan use of technique to help every member to share his point and feel a sense of belonging to the group.

Conducting

- Make group comfortable by exchanging greetings and general conversation.
- Seat the group in circle so that each one can see others.
- Motivate silent ones to come up.
- Discourage those who try to monopolise discussions.
- Clarify doubts or vague statements.
- Summarise group's views from time to time.
- Recognise and interpret different point of views present in the group.
- Analyse facts provided by the members.
- Encourage critical thinking among members by challenging the assumption and seeking evidences.
- Motivate members to take leading role one by one.

Role of Chairman

- Introduce members
- Announce the topic and purpose of discussion
- Listen to the contributions made by each member carefully.
- Build conductive climate to motivate members to speak freely.
- Keep discussion on moving track.
- Promote evaluation of all generalizations.
- Protect view points of minority.
- Get balanced participation.
- Promote group cohesion.
- Give summary.

Role of Members

- Members should talk one at a time and contribute only one point at a time.
- They should listen attentively and say on the subject.
- Members may ask critical questions whenever essential.
- They should try to promote group harmony.

Role of Experts

- In situations when the group does not have requisite technical information, expert may be called in.
- He should not suggest his own solution rather help the group understand the problem in their location and visualize possible solutions.

Advantages

- It is democratic method giving equal opportunity to each participant
- It create high degree of interest
- It helps people gain skills to work in teams
- It develops group morale
- It enhance knowledge and critical thinking

Limitations

- Villages may have factions and hence it may difficult to group discussion
- It is difficult to conduct discussion on new topic
- Requires understanding of group dynamics and skill of the extension agent
- A slow process and may not be suitable in crises and emergency situations

METHOD DEMONSTRATION

A Method Demonstration is given before a group of people to show how to carry out an entirely new practice or an 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. It involves seeing, hearing, participating and practicing in a group which shall stimulate interest and action. Method demonstration is sometimes used as complementary to result demonstration.

Objectives

1. To teach skill and stimulate to action.
2. To get rid of inefficient or ineffective movements.
3. To improve upon result by doing a job in a better way.
4. To build up learners' confidence and satisfaction on the practice.

Technique

Planning and preparation

- Decide on the topic, target audience and venue of demonstration.
- Select a topic which is important and needed by the group for immediate use.
- Contact subject matter specialists and ensure their participation.
- Collect relevant information, materials and equipment.
- Identify the steps in conducting the demonstration. Practice the demonstration, to be sure about its correct presentation.
- Decide on the date and time in consultation with the local leaders and give timely intimation to all concerned.
- Complete all arrangements for the demonstration.
- Display diagrams, charts, graphs etc. at the demonstration site.

Implementation

- Start the demonstration on the scheduled date and time.
- Show each operation step-by-step, explaining clearly why and how it is being done.
- Ensure that all the participants have seen the demonstration and have understood it.
- Repeat difficult steps, if required.
- Invite and participants one by one in small batches to practice the skill. Clarify doubts and answer to their questions.
- When everybody has practiced the skill and has expressed confidence, emphasize on the key points again.
- Hand over the relevant publications.

Follow-up

- Keep a record of the participants and maintain contact with them.
- Assist the participants in getting the required materials and equipment.

Advantages

- Suited to teach skill
- Seeing, hearing, doing and discussion stimulate interest and action
- Costly 'trial and error' procedure is eliminated
- Builds confidence
- Introduces changes at low cost
- Provides publicity

Limitations

- Suitable mainly for practices involving skills
- Needs good deal of preparation, equipment and skill of the extension agent

FIELD TRIPS:

It is a method in which a group of interested farmers accompanied and guided by an extension worker, goes on tour to see and gain first hand knowledge of improved practices in their natural settings (whether on research farms, demonstration farms, institutions or farmer's fields).

Objectives

1. To stimulate the interest, conviction and action in respect of a specific practice.

2. It helps to recognise problems, develop interests and promote adoption.

3. It demonstrates feasibility of related practices to the learners in an informal way.

Technique

Planning

- Planning of field trip starts with decision about choice of a particular place of visit. In order to involve people in the educational activity, a committee can be formed consisting of members from participants and officials sponsoring the trip.
- Decide exactly what the trip is supposed to achieve so that details can be planned.
- Decide the places (sites) and practices to be visited.
- Plan for people to explain relevant details and values. Information to concerned people and their readiness can be ensured through advance planning.
- Work out time schedule, routes of visit and people to be introduced.
- Arrange for transport and necessary permission from authorities to make the trip.
- It is better to send extension staff to the site in advance to make local arrangements for visits, stay and board (if needed).
- Participants should be given precise instruction about where and when to meet. Assign responsibilities to participants.

Implementation

- Emphasize on the purpose of the trip so that it is not taken as a leisure-pleasure activity.
- Provide information on the sites and topics of visit.
- Ask participants to assemble in a manner that everyone can hear, see and discuss conveniently without any obstruction.
- Help them to make notes of important information.
- Allow time for questions and answers.
- Adhere to schedule all the time.

- Take preventive action to avoid untoward incidents.
- Keep record of attendance and activities. Get photographs for writing news or features.

Follow-up

- Thank the committee, hosts and other concerned people for cooperation.
- Organise follow-up meetings to generate idea for action.
- Write for newspapers or farm magazines to give publicity to the trip.

Advantages

- Participants gain first hand knowledge of improved practices, and are stimulated to action
- Eminently suited to the 'show me' type of people
- Percentage of 'takes' to exposures is high
- Widens the vision of farmers
- Caters to group psychology and leadership
- Have incidental value of entertainment and sight seeing

Limitations

- It is costly
- Difficult to fix a season and time suitable for all
- Bottlenecks of transport and accommodation at halting places
- Possibility of subordinating educational aspects to the sight seeing aspects
- Risk of accidents

GROUP DISCUSSUION TECHNIQIUS:

1. LECTURE:

The lecture method is most suited to the literate population. But it can be adapted to all types of audience. It is used to present authoritative information to a large audience in the shortest time. A wide range of subjects can be covered using the lecture method. The speaker makes a presentation on the topic allotted to him for a definite period of time. Its weakness is that people are not likely to master as much of the information as the speaker is likely to assume; because for the most part it is a one way communication. Members of audience listen in terms of their interest and remember in terms of their motivation and memory. It is the cheap method and the results are easy to check.

2. SYMPOSIUM

This is a short series of lectures; usually by 2 to 5 speakers. Each one speaks for a definite amount of time, and presents different phases or subdivisions of a general topic. The topic should be large enough or general enough to permit two or more subdivisions that are sufficiently significant to justify separate discussion by speakers. The subject may or may not be controversial. It is important that the speakers are of approximately equal ability, to avoid one speaker dominating the meeting or giving the audience a distorted view of the subject. The symposium is used primarily for information gathering, at the professional level. The advantage of symposium over a lecture is that two or more experts present different facts of the topic.

3. PANEL

It is an informal conversation put on for the benefit of the audience, by a small group of speakers, usually from 2 to 8 in numbers. They are selected on the basis of the information and experiences they have. Members are seated so that they can see one another and face the audience. The panel is generally rehearsed before it is presented to

the public. The leader introduces the members of the panel to the audience and announces the topic. He has the responsibility to see that the conversation keeps going, by asking questions or making brief comments, and encouraging the less talkative members. The special advantage of panel is that a spontaneous conversation about some subject may have more interest for the audience than a lecture.

4. DEBATE

On a controversial subject two teams of usually 2 to 3 persons present their point of view. Each speaker has time allotted for speech to make his main speech and defense after the main speeches have been completed. In this case, there is two way communication between the debaters, but one way communication for the audience. The range of subjects for the debate is limited to controversial topics. The big advantage in a debate is that more than one side of a question is presented. There is however, one danger. If it is a decision debate there is the temptation for the debate to become highly antagonistic. In such a case, the motive to win the debate by means may lead to distortion of information, ignoring the primary need to inform the audience. This objection to the debate is overcome by holding non- decision debates or by having a forum after the debate.

5. FORUM

It is a discussion period that may follow any one of the above methods of presentation. It consists of a question period in which members of the audience may ask questions or make brief statements. The forum provides an opportunity for the audience to clear up ambiguous points and to raise questions for additional information. It is also gives individuals an opportunity to state briefly their understanding of a point and see whether they have interpreted correctly the material presented. It is primarily a means of understanding information.

6. BUZZ GROUP

Also known as Phillips 66 format or hurdle system. With large group when there is limited time for discussion, the audience may be divided into smaller unites for a short period. Groups of 6 to 8 persons get together after receiving instructions to discuss about a specific issue assigned. The secretary of each small group will report the findings or questions to the entire audience when they are reassembled. This technique can be successfully used for defining or clarifying the problem. It can help in developing a list of possible goals, standards, and activities for the consideration of the total group. It also helps in refining ideas and developing solutions to the problems.

7. WORKSHOP

Workshop is a special type of working conference of a week or more duration. In workshop emphasis is given on lecture, individual conference and working in group. Under the guidance of the consultants work sessions the individual participant can work on a special problem either individually or as a member of group. This method is used for professional improvement and in- service training. The main item of the workshop are lectures by staff members, group meeting with selected groups, individual consultation and study, informal discussion on problems, arranging inspirational or special events and providing library and other resources for the study.

8. BRAIN STORMING

It is a creativity of generating ideas to solve a problem. It is the unstructured generation of idea by a group of people. The group is selected for their creativity and knowledge to seek solutions to particular problem or simply find better ways of meeting project objectives. Suggestions are encouraged and follow during a creativity session and everything is acceptable. From this, many ideas, some entirely new are brought forward for analysis and ranking. Brainstorming is less structured than problem solving meetings. It seeks to generate entirely new ideas. People get involved and make positive

contributions. It is good for team building and working together. It requires good facilitator to conduct the brain storming session.

9. SEMINAR

It is one of the most important forms of group discussion. The discussion leader introduces the topic to be discussed. Members of the audience discuss the subject to which ready answer are not available. A seminar may have two or more plenary sessions. This method has the advantage of pooling together the opinions of a large number of persons.

10. CONFERENCE

Pooling of experiences and opinion among a group of people who have special qualifications in an area. The conference method mainly consists of small and large group discussion, steering committee and open plenary session. The conference help in clarifying various issues involved in a particular area as different points of view are expressed by experts in the conference.

MASS CONTACT 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 contact method are :

a. It is suitable for creating general awareness among the people.

b. It helps in transferring knowledge on farming and changing opinions.

c. Large number of people are communicated within a short span of time.

d. Facilitates quick communication in times of emergency.

e. Less extensive due to more coverage.

Few limitations in mass contact methods are

a. It is less intensive method.

b. Little scope for personal contact with the audience.

c. Generalized recommendations hinder application by individuals.

d. Little control over the responses of the audience and

e. Difficulty in getting feedback information and evaluation of results.

CAMPAIGN

A Campaign is an intense educational activity for motivating and mobilizing a community to action, to solve a problem or satisfy a need urgently felt by it.

The duration of campaign may be for a single day on a theme like 'water for life' for a few weeks as in 'rat control' or 'family planning' for few months as in 'Vanmohotsava' (tree planting) and for few years as in 'Grow More Food' campaign. A campaign may be held by involving small number of people in a few villages, or by involving entire community or the entire nation over the whole country. Campaign around a theme may be organized only once, or may be repeated year after year, till the goal is satisfactorily reached.

Objectives

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

2. To induce emotional participation of the community at the local level and create a favourable psychological climate for adoption of new practices.

Technique

Planning and preparation

- Identify with the local leaders an important problem or needs of the community.
- List out specialists, local leaders and other persons who could be involved in solving it.
- Decide with the local leaders about the time of holding the campaign and its duration.
- Arrange necessary inputs, services and transport.
- Prepare a written programme of the campaign.
- Give wide publicity and put up posters at strategic points throughout the area. Use mass media to warm up the community. Make use of personal appeal.

Implementation

- Carry out the campaign as per programme.
- Hold group meeting with the people and discuss about the origin and nature of the problem. Suggest practical and effective solution.
- Arrange method demonstration and training programme for the participants.
- Maintain supply of critical inputs and services.
- Keep close watch on the campaign and take corrective steps, if necessary.
- Arrange mass media coverage.
- Conclude the campaign in time.

Follow-up

- Contact participants and find out their reactions.
- Assess the extent of adoption of the practice.
- Publicize successful campaigns.
- Analyze deficiencies and failures.
- Give due recognition to the local leaders.

Advantages

- Specially suited to stimulate mass scale adoption of an improved practice in the shortest time possible.
- Facilitates exploitation of group psychology for introducing new practices.
- Successful campaign create conductive atmosphere for popularizing other methods.
- Builds up community confidence.

Limitations

- Applicable only for topics of community interest.
- Success depends on cooperation of the community and their leaders.
- Requires adequate preparation, concerted efforts and propaganda techniques, and uninterrupted supply of critical inputs.
- Less suitable for practices involving complicated techniques.

EXHIBITION

An exhibition is a systematic display of models, specimens, charts, photographs, posters, pictures, 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, district, state, national and international levels. Exhibitions are used for wide range of topics, such as planning a model village, demonstrating improved practices, different feeding methods, showing high -producing animals, new technologies and the best product of village industries.

Objective

1. To provide visual literacy.

2. To acquaint people with better standards.

3. To create interest in a wide range of people.

4. To motivate people to adopt better practices.

Technique

Planning and preparation

- Form a steering committee with specialist, local leaders and administrators.
- Decide on the theme and organizations to be involved.
- Prepare a budget estimate and procure funds.
- Decide on the venue, time and duration.
- Prepare a written programme and communicate to all concerned in time.
- Get the site ready within the scheduled date.
- Reserve a stall for display of exhibits to be brought by the farmers.
- Arrange a pandal for holding meeting, training and entertainment programme.
- Display posters at important places and publicize about the exhibition through mass media.
- Decorate the stalls simply and tastefully. Make adequate arrangement for lighting.
- Display the exhibits at eye-level.
- If possible, arrange action and live exhibits.
- Train up interpreters and allot specific duties.

Implementation

- Organize formal opening of the exhibition by a local leader or a prominent persons.
- Arrange smooth flow of visitors.
- Let the interpreters briefly explain the exhibits to the visitors so that the intended message is clearly communicated.
- Organize a panel of experts to be present nearby, so that the visitors who would like to know more or discuss some problems could get the desired information.
- Conduct meetings, training programmes etc. as per schedule during the day time and use the stage for entertainment during nights.
- Judge the stalls on the basis of their quality of display, ability to draw visitors and effectiveness in communicating message.
- Keep the exhibits and the premises clean. Replace exhibits as and when necessary.
- Conclude the exhibition as per the schedule.

Follow-up

- Meet some visitors personally and maintain a visitor's book for feedback information.
- Talk to local leaders and assess success of the exhibition.
- Ensure availability of critical inputs and facilities emphasized during the exhibition
- Look for changes in practice in the community in the future.

Advantages

- Eminently suited to teach illiterates
- Promotes public relations and goodwill towards extension
- It can be fit into festive occasions and serve recreational purposes
- Can be used to stimulate competitive spirit
- Can create market for certain products.

Limitations

- Requires lots of fund and preparation
- Can not be held frequently

FARMERS RALLY

It is a purposeful activity undertaken at an appropriate time for creating awareness and interest among the community in a concerted manner on a particular problem. For arranging the farmers rally following points should be considered.

Objectives

1. To create awareness about a problem and offer a solution.
2. To provide accurate information through experts to the participants.
3. To motivate people for the adoption of improved practices.
4. To provide opportunity for interaction among people in social gathering.

Technique

Planning and preparation

- Decide on the topic, venue and target audience.
- Select a limited number of experts.
- Decide with the local leader on the date and time and communicate the same to all the concerned well in advance.
- Prepare a agenda of the programme.
- Give wide publicity and put up posters at important points throughout the area.
- Use mass media to warm up the community.

Implementation

- Start the rally on the scheduled time and cut down the formalities to a minimum.
- Allow the experts to deliver the talk and after that keep the question answer session for clarification of doubts of the participants.
- Make the use of audio-visual aids.
- Arrange the mass media coverage.
- Conclude the rally in time.

Follow-up

- Contact the participants and find out their reactions.
- Assess the extent of adoption of the practice.
- Publicize the rally.
- Give due recognition to the local leaders.

Advantages

- It appeals to the practical type of individuals
- It create interest among the participants
- It motivate the people to adopt improved practice

Limitations

- It is costly
- Requires good deal of preparation and propaganda techniques

- Applicable for topics of community interest
- Can not be held frequently

RADIO

When you want to reach people who can not read or write, or people who live in remote villages, and when you want to reach people speedily, you make use of radio. It is a 'personal' medium, received in private by the listener in the company of his family members or by himself. In some cases, of course, there is group listening.

Use the radio to inform, alert, suggest, direct, interest, stimulate and motivate people. It is effective when you supplement it with other media or methods. But the radio has some 'cannot' too, which you have to understand well. The radio cannot teach, it cannot go into details, it cannot specify.

Writing for radio :

Writing for the radio is different from writing it for the newspaper. The reader of the newspaper has your words before him and he can read them at his pace. He can go back and read it all over again if he misses any point or fails to understand you fully. Not so with the radio. There is no chance for him to go back and start from the beginning.

General principles for writing a script

- It is writing in spoken form.
- Simplicity is essential
- It must start strongly, perhaps provocatively and end strongly with a concluding statement
- Repetition of key ideas is essential
- Avoid overuse of statistics (Spell out figures in the script)
- Careful planning is essential
- Use research based information
- Maintain continuity of narration in writing

Before writing the script

- Determine the purpose of your writing
- The type of learners to whom you are presenting
- Decide upon the mode of presentation
- Select a topic which is of interest to large number of listeners and which can be covered in few minutes. A talk should never go beyond ten minutes.
- Since you have a limited time, select only one phase of the subject.

Writing the script

- Write out the central fact or point as a complete and definite statement before composing your talk.
- Select two or three supporting points which will strengthen the main statement.
- State your idea plainly at the beginning.
- Enlarge on the main idea - provide the supporting ideas.
- Avoid referring to the listener in the third person. Use 'you' and 'we'.
- Whenever you want to make an important statement, alert the reader in advance.
- Make your facts and statements convincing. Give logical reasons for making them.
- Give examples. Quote authorities. Give instances.
- Point out the results of experiments/ demonstration.
- Give local places, names of local people, local examples.
- Spell out large figures in the script. Write two lakhs, rather than 2,00,000.
- Avoid giving specific numbers. Round them up. Nobody will remember "24,858 hectares" but about "25,000 hectares" is easy enough to remember.

- Providing all the information on a subject is not the job of the radio. Make the listener seek further information about it either by contacting the specialist or asking for a leaflet.
- After you have written the script, check it.
- See whether you have presented the subject correctly, clearly and briefly.
- See that all the words are short, simple and easy to pronounce or listen to.
- See whether the sequence is logical.
- Read the script aloud. See if you sound as you should, as if you are talking to someone.
- Then write the script on a soft, non-crackling paper.
- Provide a broad margin. Use plenty of space between lines. Indent your paragraph properly.
- Do not carry a part of a sentence on to the next page. Otherwise listeners will hear a pause somewhere in the middle of the sentence.
- Correct your script carefully for mistakes and mark the places where you want to give a pause, like this : / .
- When you want to emphasise a word, underline it.
- Mark your pages and put them in proper order.

Delivering the talk

- Rehearse the talk aloud
- The rate of delivery should be , on an average, 140 words a minute and it should be kept uniform
- Use tone, accentuation, modulation, silence, volume and pitch in your voice
- Just talk to the people and don't read.
- Observe mike manners
- Start and finish in time

Advantages

- It can stimulate and motivate.
- Relatively cheap.
- It can quickly transmit messages in most remote areas.
- It can persuade, it can create or change attitudes.
- It strongly appeals to the ear.
- The radio voice appears to the listener as authentic and real.
- It is good medium for illiterate people.

Limitations

- People must listen when you are talking.
- If they miss some of your words, they cannot ask you to repeat them.
- Over the radio, you cannot make use of your smile or frown. You cannot gesticulate or use visuals. All you have to rely on your words and your voice.
- Difficult to check on results.

TELEVISION

The following method of developing a television programme is not the only way, but it offers briefly a logical step by step production. As you become more familiar with television and develop more confidence in your presentation, you may discard some of the steps. Prepare your TV programme the way that is easiest for you and yet gives you an effective television programme.

Script

It is a blue print from which a television programme is made.
In fact, it is precise description of visuals, scene by scene, along with commentary. It should also include instructions for the production team on time segments, camera movements, shots etc. The final process of preparing a programme with shot-by-shot descriptions along with sound, music and camera instructions etc. is known as writing or shooting script.

Before writing the script

- Decide who are the audience
- What are the specific objectives of the programme
- Select a need based subject matter from rural audience point of view.
- Choose a phase of that subject matter. This may be called topic.
- Determine the main point to be made in the programme. List all the items that you will make to support this point.
- Get a picture of the overall programme in your mind before you proceed further.
- Divide the programme into important steps and list these steps in logical order.
- Consult resource material or a resource person if you need more information or if you need to check the information for accuracy.
- Select a format or a method of presenting the television programme. This may be a demonstration, an illustrated report, a dramatic presentation, an interview, a forum or a variety of format, using several of these methods combined.
- Determine the need for other participants and contact possible participants (farmers, homemakers, boys and girls, specialists and other persons).
- Determine the audio-visual aids, equipment, materials and properties that best show the points to be made. Make a list of all of the visuals.

Writing the shooting script

- Make an outline of the programme. Divide a sheet of paper into two columns. In the left column write the things you want to show. In the right column put the things you want to say or talk about. Label the left column "video" and the right column "audio".
- Divide the programme in as many small shots as possible.
- Describe the visuals shot by shot.
- Provide the information about shot number, indoor or outdoor shooting, site of shooting, time of shooting, duration of shot etc.
- Maintain the continuity from one shot to the next shot. It is often necessary to use a special device to get from one segment of the programme to another. This is called a transition. It may be done visually, orally or both. Don't jump from one idea to another without a transition. Transitions must be indicated in the script if used.
- Describe the area of object to be seen by the camera as

Long shot (LS)
Medium long shot (MLS)
Medium shot (MS)
Medium close up (MCU)
Close up (CU)
Tight close up (TCU)

- If the camera angle is other than the normal eye level view, it should be described as upward angle or downward angle.
- Describe shot wise action and objects.
- Sate the camera movements called for within the shot

Panning - horizontal movement

Tilting - vertical movement

□ At the extreme left of the page indicate the amount of time in minutes and seconds you think it will take to do each important step of the programme.

□ Correct the outline script in view of the programme producer's suggestions. Provide a copy of the script to programme producer, the participants and others as needed.

While recording the programme

□ Concentrate on the subject, not on the way you are or are not looking at the camera, moving your hands, and the like. Attempt to get an informal approach and to treat your audience as one individual, not as a group of thousands. Present the programme as it was outlined and as the programme producer expects it. Trust the programme producer and the technical crew to produce as good a show as they possibly can.

□ If something unexpected happens or you make a mistake or drop something, don't let it bother you. Recognise the mistake and continue your programme as planned.

□ Facial expressions are very important. A smile on the face makes a lot of difference. Gestures should be used effectively in the communication process.

□ Unnecessary movements should be avoided. Check the habits of playing with a paperweight, pen, chalk or scratching your head or cleaning your eyes or nose. Avoid those movements also, which will express your nervousness.

□ Face the camera while talking to the viewers. Look into the lens of the camera for having eye to eye contact with the viewers. However, this does not mean that one should continuously stare at the camera. Acknowledge the presence of the other participants of the programme by looking at them from time to time.

□ Neat physical appearance is very important. Dark grey apparel and colourful designed shirts have been found well suited. Oily hair or face reflect light and appear to be shiny. Avoid use of excess hair oil and wash your face.

□ Visual aids, samples, models, working models, specimens etc. makes your programme interesting. Visual aids should be precise, to the point and drawn and coloured with sharp colours. Graphic material, charts, slides, film-strips etc. should also be used to make the programme more intelligible.

□ Pronunciation should be very clear and be audible. Proper speed should be maintained while speaking. Proper word should be selected to communicate the message. Avoid fad words and slang. Metaphors, phrases, jargon and flown language should not be used. □ Don't have apologetic opening tone. Let your voice show emotions. Do not sound weary and depressed. Let your voice have vitality, vigour, energy and enthusiasm. **COMMUNITY RADIO STATION (CRS)** Looking to the popularity of radio as medium of communication and effectiveness in development, All India Radio (AIR) ventured into a new phase of broadcasting by experimenting with the concept of community radio station. A local radio station serves a small area (a district or so) with similar agro-climatic and cultural situations. The programmes are supposed to reflect local culture and aspirations. They are supposed to support on-going developmental programmes. Field -based programmes using local talent, give voice to people's views. Local culture finds more air time. Community service programmes should provide opportunity to broadcast matters of information. Radio thus becomes voice of the people and catalyst in development. Unlike regular radio, extension workers can find air time. **FACTORS AFFECTING SELECTION AND USE** The following are some of the factors that may influence the selection and use of extension teaching methods. 1. *The behavioural changes expected in people i.e. change in knowledge, skills or attitude* : We all know that most mass media methods are good for effecting changes in attitude and knowledge of the people, while most individual and group methods are useful for bringing about changes in knowledge and skills.

2. *Nature of subject matter being taught* - particular aspect of the technology and whether understanding depends on seeing or not.
3. *Nature of audience* - their age, education, interest, experience, knowledge, intelligence etc.
4. *Number of persons to be covered*: Individual and group contact methods are slow and cannot cover a large population in a relative short period. Hence if the population to be covered is large and time available is relatively short, mass contact methods may be more effective.
5. *Availability of mass media to the clientele*: If farmers own radio, TV and subscribe to farm journals, newspapers and buy extension publications, they can be effectively reached through such media. However, if the availability of any or all sources of information is limited in any area, it will be difficult to communicate with them, unless the information sources available to them are utilized.
6. *Skill on the part of extension worker for the use of different extension methods*: All extension workers are not equally efficient in the use of all the extension teaching methods. Hence they will tend to use relatively more of those methods with which they are familiar. 7. *Cost involved*: Some methods are relatively more costly to use than others. Hence the initial investment required and the availability of related equipment and facilities may encourage or discourage the use of some methods. *8. Basic facilities needed*: Some methods need electricity, dark room, projection screen, projectors and so forth. Hence such methods can only be used if such facilities are available at a place and time when needed. **COMBINATION (MEDIA MIX) OF TEACHING METHODS** Studies show that people are influenced by extension education to make changes in their behaviour in proportion to the number of teaching methods used. If widespread response is desired, people must be exposed to teaching in several ways. The following statistic will further support the arrangement for a combination of extension methods- People remember-20 per cent of what they HEAR 30 per cent of what they SEE 50 per cent of what they SEE and HEAR 80 per cent of what they SAY 90 per cent of what they SAY and DO Therefore, if widespread response is desired, people must be exposed to teaching effort in several different ways. It is also proved that combined use of several different methods is of the utmost importance in extension teaching. As the number of methods of exposure to extension information increases from 1 to 9, the number of farm families changing behaviour increases from 35 to 98%. The adoption rate and percentage of practices was high when more than five methods were used as compared to single and two to five methods. **ADVANCED INFORMATION SOURCES INTERNET:** Internet is a worldwide network of computer networks. It is an open inter connection of networks that enables connected computers to communicate with each other. These networks are scattered over the globe, yet are inter connected making it possible to communicate with each other in a few seconds. Internet is not owned by any individual organization or the country; it is a free for all open service facility. It is governed by INTERNIC (Internet Network Information Centre). The farmers and extension functionaries are browsing the Internet to find the recommended "package of practices", best prices and markets for their produce and also meteorological data to take advance actions. The farmers' are searching for the potential markets and customers for their produce not only in India but also overseas. Internet is thus emerging as one of the most important tools to search for Agricultural Information. At the same time almost all the Agricultural Research and training institutions have started to host and enrich their web-sites with farmer-friendly information. For example, the website of Department of Agriculture, Maharashtra www.agri.mah.nic.in is extremely farmer-friendly and provides information on issue related to Government support to agriculture with complete information on Development schemes, Department Plans, meteorological

forecast and advisory to the farmers. The information is available in English and Marathi languages. On the research side, almost all the ICAR Institutions have hosted their web-sites and are in process of putting their farmer-centric information on the sites. The demand for "prices" information for the agricultural produce has been growing, as more and farmers are asking for the prices of their produce in near-by markets. A number of web-sites are providing the Agricultural produce prices on on-line basis. The important websites giving the gricultural market price information are: www.agmarnet.nic.in , www.agriwatch.com , market.ap.nic.in, emandi.mla.iitk.ac.in etc. Web-browsing for finding the required information is growing at rural information kiosks as well. In remote villages of Pondicherry, MSSRF has reported that a number of farmers visit the Village Information Kiosks to find see and read the Newspapers on-line. **CYBERCAFE** It is related to the electronic communication system where the computer network can be used to obtain and send information. It is a medium through which desired information is exchanged by computer network. An cybercafe is a place where one can use a computer with Internet access, most for a fee, usually per hour or minute; sometimes one can have unmetered access with a pass for a day or month, etc. **TELE CONFERENCE** With the advancement of electronic and tele communication voice message system, voice answering system etc. can be used with your telephone system. Under this method tele conference can be held. A voice message can be recorded and sent to more than one person at a time. Under this system persons at different places can join together by telephone at a particular time. They can hear and talk with each other during this period. **VIDEO-CONFERENCE** It is an emerging service on the internet. It allows the group of users located around the globe to talk and interact with each other, as if they are sitting and discussing in a single room. The parties interacting can see each other talking on their computer screens and can hear each other's voice through a special audio device fixed in their computers. **KISAN CALL CENTERS** The department of Agriculture and cooperation, Ministry of Agriculture and Govt. of India has launched Kisan Call Centres (KCC) in January 21, 2004, providing online agriculture advice and information to the farmers, across the whole country, using a toll free telephone number 1800-180-1551. The farmers can make a call from anywhere in the state, the call lands at the concerned state call centre and the farmer gets the response in his/ her own language from the agriculture graduates at the call centre or the experts at identified agriculture university or research centre in the state. Kisan Call Centres are an important extension tools to provide two-way communication mechanism between the agricultural scientist and the farmers. Kisan Call Centres uses the extensive telecom infrastructure in the country to deliver extension services to farming community. **CONSULTANCY CLINICS** The agricultural university and other private organizations (like Agro service centres) have started consultancy clinics for solving the problems of the farmers. In these clinics the problems of the farmers are brought to the scientists. These problems are analysed and solutions are recommended.

Lecture No. 14: Innovation –Decision Process – meaning – and stages (knowledge, persuasion, decision, implementation and confirmation); concepts – dissonance and rejection – active rejection and passive rejection – discontinuance – replacement discontinuance and disenchantment discontinuance, over adoption, rate of adoption and innovativeness – adopter

categories and their characteristics INNOVATION DECISION PROCESS

Rogers & Shoemaker have used the term Innovation – Decision Process in preference to Adoption process.

Definition: According to Rogers (1983, 1995) the innovation – decision process is the process through which an individual passes from first knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation and use of the new idea, and to confirmation of this decision.

This process consists of a series of actions and choices over time through which an individual or an organization evaluates a new idea and decides whether or not to incorporate the new idea into the ongoing system. This behaviour consists essentially of dealing with the uncertainty that is inherently involved in deciding about a new alternative to those previously in existence. The perceived newness of an innovation, and the uncertainty associated with this newness, is a distinctive aspect of innovation-decision making, compared to other types of decision making. Innovation – decision is a process that occurs over time and is conceptualized to have five stages.

1. Knowledge
2. Persuasion
3. Decision
4. Implementation
5. Confirmation

1. Knowledge stage: It occurs when an individual or other decision making unit is exposed to an innovation's existence and gains some understanding of how it functions. Knowledge function is mainly cognitive or knowing. Knowledge seeking is initiated by an individual and is greatly influenced by one's predispositions. Exposure is selective and generally, individuals tend to expose themselves to those ideas which are consistent with one's existing attitudes and beliefs, and avoid those which are in conflict with them. A need can motivate an individual to seek information about an innovation and the knowledge of a innovation may develop the need.

Questions such as 'what is the innovation?' 'How does it work?' and 'Why does it work?'

are the main concerns of an individual about an innovation. The first of these three types of knowledge, awareness-knowledge, is information that an innovation exists. Awareness-knowledge then motivates an individual to seek 'how-to-knowledge and 'principles' knowledge. This type of information-seeking is concentrated at the knowledge stage, but it may also occur at the persuasion and decision stages.

How-to knowledge consists of information necessary to use an innovation properly. The adopter must understand what quantity of an innovation to secure, how to use it correctly, and so on. In the case of innovations that are relatively more complex, the amount of how-to knowledge needed for proper adoption is much greater than in the case of less complex ideas. And when an adequate level of how-to knowledge is not obtained prior to the trial and adoption of an innovation, rejection and discontinuance are likely to result.

Principles-knowledge consists of information dealing with the functioning principles underlying how the innovation works. Examples of principles-knowledge are: The notion of germ theory, which underlies the functioning of vaccinations and the biology of plant growth, which underlies fertilizer innovations. It is usually possible to adopt an innovation without

principleknowledge, but the danger of misusing the new idea is greater, and discontinuance may result. The competence of individuals to decide whether or not to adopt an innovation is facilitated by principles know-how. If a problem occurs in an individual's use of an innovation, principles knowledge may be essential in solving it.

Types of knowledge Questions answered

1. "Awareness – knowledge What is innovation
2. "How to – knowledge How does innovation work
3. "Principles – knowledge Principles underlying how the innovation work (FUNCTIONING PRINCIPLES)

2. Persuasion stage: Persuasion occurs when an individual or some other decision making unit forms a favorable or unfavorable attitude towards the innovation. Persuasion function is mainly affective or related to feeling. At this stage, the individual becomes more psychologically involved with the innovation and actively seeks information about it. The individual perceives the attributes of innovation, which is conditioned by one's personality and social system norms, and develops a general idea about the innovation.

In developing a favourable attitude towards the innovation, an individual may mentally apply the new idea to the present or anticipated future situation before deciding whether or not to try it. There may be two levels of attitudes, a specific attitude towards the innovation, and a general attitude towards change. A previous positive experience helps the process and a previous negative experience i.e. a failure develops resistance to future new ideas.

3. Decision stage: Decision occurs when an individual engages in activities that lead to a choice to adopt or reject the innovation. The individual puts the innovation to a small-scale trial in own situation. Considering its relative advantage, risk involved and many other related factors like availability of market, need for the family etc., the individual decides whether to adopt or reject the innovation.

For some individuals and for some innovations, the trial of a new idea by a peer like themselves can substitute at least in part., for their own trial of an innovation. This 'trial by others' provides a kind of vicarious (realized through other's experience) trial for an individual. Extension agents often seek to speed up the innovation-process fpr individuals by organizing demonstrations and field days of a new idea in a social system. These are quite effective in influencing adoption by individuals.

4. Implementation stage.

Implementation occurs when an individual or other decision making unit puts an innovation into use. At this stage the individual is generally concerned with where to get the innovation, how to use it and what operational problems will be faced and how these could be solved. Implementation may involve changes in management of the enterprise and/or modification in the innovation, to suit more closely to the specific needs of the particular person who adopts it.

Re-invention often occurs at the implementation stage. **Re-invention is defined as the degree to which an innovation is changed or modified by a user in the process of its adoption and implementation.** Re-invention often is beneficial to thc adopters of an innovation. Flexibility in the process of adopting an innovation may reduce mistakes and encourage customization of the innovation to fit it more appropriately to local situations or changing conditions. As a result of reinvention, an innovation

may be more appropriate in matching an adopter's preexisting problems and more responsive to new problems that arise during the innovation-decision process.

Recognition of the existence of Re-invention brings into focus a different view of adoption behaviour – instead of simply accepting or rejecting an innovation as a fixed idea, potential adopters on many occasions are active participants in the adoption and diffusion process, to give their own unique meaning to the innovation as it is applied in their local context. Adoption of an innovation is thus a process of social construction.

5. Confirmation stage: Confirmation occurs when an individual seeks reinforcement of an innovation decision already been made, or reverses a previous decision to adopt or reject the innovation if exposed to conflicting messages about the innovation. The decision to adopt or reject an innovation is not a terminal act. Human mind is in a dynamic state and an individual constantly evaluates situation. If the individual perceives that the innovation is giving satisfactory results he will continue otherwise may reject it. Reversal of the decision after adoption or rejection of an innovation may, take place at a later state.

At the confirmation stage, extension agents have the additional responsibility of providing supporting messages to individuals who have previously adopted. Extension agents often assume that once adoption is secured, it will continue. But there is no assurance against discontinuance, because negative messages about an innovation circulate via interpersonal networks in most client systems.

Throughout the confirmation stage, the individual seeks to avoid a state of internal disequilibrium or **DISSONANCE**, an uncomfortable state of mind, by reducing or eliminating it.

An individual seeks to accomplish it by changing one's knowledge, attitudes or actions.

CONCEPTS RELATING TO ADOPTION AND DIFFUSION

1. DISSONANCE: An internal disequilibrium or an uncomfortable state of mind of an individual to adopt or reject an innovation.

2. REJECTION: It is a decision not to adopt an innovation. Rejection may take two forms.

a) Active rejection: It consists of considering adoption of innovation (including even its trial) but then deciding not to adopt it.

b) Passive rejection (also called Non-adoption): It consists of never really considering the use of the innovation.

3. DISCONTINUANCE: It is a decision to reject an innovation after having previously adopted it.

Discontinuance is of 2 types

a) Replacement discontinuance: It is a decision to reject an idea in order to adopt a better idea that supersedes it.

b) Disenchantment discontinuance: It is a decision to reject an idea as a result of dissatisfaction with its performance.

E.g.: Crop varieties generally deteriorate after a number of years, they are replaced by superior varieties, if available or may not be cultivated at all.

4. RATE OF ADOPTION: It is the relative speed with which an innovation is adopted by members of a social system.

5. OVER ADOPTION:: People continue to adopt an innovation rather vigorously, when experts feel that it should not be so done. e.g., Excessive use of pesticides.
Over adoption produces -ve effect and causes distortion of the systems.
6. INNOVATION: It is an idea, practice or object that is perceived as new by an individual or other unit of adoption.
7. INNOVATIVENESS: It is the degree to which an individual is relatively earlier in adopting new ideas than other members of a system.
8. ADOPTION PERIOD: The period that takes from awareness stage to the adoption stage by the individual.
9. **INNOVATION-DECISION PERIOD**: The innovation – decision period is the length of time required to pass through the innovation – decision process. The time elapsing form awareness knowledge of an innovation to decision for an individual is measured in days, months, or years.
This period is thus a gestation period in which a new idea is fermenting in the individual's mind.
10. **PERSONAL LOCALITE:** The person who is directly influencing the farmers decisions within the system i.e. neighbourers, friends, local leaders, peers etc.
11. **PERSONAL COSMOPOLITE**: The persons who are directly influencing the farmer's decisions and belong to outside the system e.g. Extension agents
12. IMPERSONAL COSMOPOLITE: Indirectly influencing the farmers decisions e.g Mass media

ADOPTER CATEGORIES AND THEIR CHARACTERISTICS:

All individuals in a social system do not adopt an innovation at the same time. Rather, they adopt in an ordered time sequence, and they may be classified into adopter categories on the basis of their innovativeness.
INNOVATIVESS is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system. In technology transfer programme, it is of great practical utility for the extension workers to identify the individuals who are likely to adopt innovations early and who may lag behind.
The adoption of an innovation over time follows a **normal, bell-shaped** curve when plotted over time on frequency basis. If the cumulative number of adopters is plotted, it results in an 'S'- shaped curve. The S-shaped curve rises slowly at first when there are few adopters in a time period, accelerate to a maximum when about half of the individuals in the system have adopted and then increases at a gradually slower rate as the few remaining individuals finally adopt (Fig). The S shaped curve is like that of a 'learning curve' as propounded by the psychologists. Each adoption in the social system is in a sense equivalent to a learning trial by an individual.
Both of these curves are for the same data, the adoption of an innovation over time by the members of a social system. But the bell-shaped curve shows these data in terms of the number of individuals adopting each year, whereas the S-shaped curve shows these data on cumulative basis.
The distribution of adopters over time closely approaches normality, and may be explained by the statistical concept of normal curve. The distribution of the adopters may be partitioned into five adopter categories by using the mean (x) and standard deviation. The area lying to the left of the mean time of adoption minus two standard deviations includes 2.5 per cent of the individuals who are the first to adopt an innovation and are known as

innovators. The next 13.5 per cent between the mean minus one standard deviation and the mean minus two standard deviations to adopt the new idea are called as early adopters. The next 34 per cent of the adopters between the mean date of adoption and minus one standard deviation are known as early majority. Between the mean and one standard deviation to the right of the mean are located the next 34 per cent to adopt the new idea, the late majority. The last 16 per cent to the right of mean plus one standard deviation are the last to adopt the innovation the laggards. The five-adopter categories are conceptualized as ideal types and are presented in Figure given below.

Fig: Adopter categories on the basis on Innovativeness

1. InnovatorS (Venturesome). They are **venturesome** and first people to adopt a new idea, much ahead of other members in the community. They are generally very few in number and not more than one or two in a community. They may deviate from the social norm and may be viewed as deviants by others.

Characteristics:

1. Have larger farms
2. High net worth and risk capital.
3 Willing to take risks.
4. Usually not past middle age.
5. Generally well educated.
6. Have respect and prestige in progressive communities but not in conservative type of communities
7. Mentally alert and actively seeking new ideas.
8. Their sphere of influence and activity often goes beyond the community boundaries.
9. They have many formal and informal contacts outside the immediate locality.
10. They often bypass the local extension worker in getting information from the originating sources and may learn about new things even before he does. They sometimes manage to get samples of seeds or chemicals even before they are released for public use.
11. They subscribe to many farm magazines and specialized publications
12. Other farmers may watch the innovators and know what they are doing but the innovators are not generally named by other farmers as "neighbours and friends" to whom they go for information.

2. Early adopters (respectful): They are **localite and** are a more integrated part of the **community.** Because early adopters are not too far ahead, the average members of the community can comprehend their activities relating to adoption of the innovation. They have more opinion leadership and potential adopters look to them for advice and information about the innovation.

They try to maintain adoption leadership to keep up their prestige in the community.

(1) Younger than who have a slower adoption rate, but not necessarily younger than thc innovators

(2) They are not the persons who test the untried ideas but they are quickest to use tried ideas in their own situations

(3) Have large farms.

(4) Higher education than those who adopt more slowly.

(5) High income

(6) They participate more in the formal activities of the community.
(7) They also participate more in government programmes.
(8) This group usually furnishes a disproportionate amount of the formal leadership (elected positions) in the community.
(9) They read papers and farm journals and receive more bulletins than people who adopt later.
(10) They may be regarded as "community adoption leaders."

3. Early majority (Deliberate and local adoption leaders): They adopt new ideas just before the average members of the community. They are neither very early not relatively late to adopt an innovation. They are **deliberate** and take longer time to make the decision to adopt, in comparison to the innovators and early adopters.

1. Slightly above average in age, education and farming experience.
2. They take a few more farm Journals and bulletins than the average.
3. They have medium high social and economic status.
4. Less active in formal groups than early adopters, but more active than those adopting later.
5. In many cases, they are not formal leaders in the associations in the community, but they are active in those associations.
6. They actively participate in extension programmes like training, demonstration, kisan mela, study tour etc.
7. They are most likely to be informal leaders, but not holders of elected positions.
8. Have more limited resources than early adopters and innovators, and so cannot afford to make hasty or poor decisions.
9. They associate mainly with people of their own community.
10. They value highly the opinions their neighbours and friends hold about them for, this is their main source of status and prestige. 11. They are mostly mentioned as "neighbours and friends" from whom the majority of farmers seek information.

4. Late majority (skeptical and later adopters): They are **cautious and skeptical**, and adopt new ideas just after the average members of the community. They adopt mainly because people have already adopted the innovation and are getting the benefit out of it.

1. Those in this group have less education and are older than the early majority.
2. They form the major part of formal organizational membership, although they participate less in such formal groups.
3. They take fewer leadership roles than the earlier adopters.
4. They take and read fewer papers, magazines and bulletins, than the early majority.
5. They do not participate in as many activities outside the community as do people who adopt earlier.

5. Laggards (traditional): "Laggards "are the last people to adopt new practices and are traditional.

By the time the laggards finally adopt an innovation, it may already have been superseded by a more recent idea which the innovators are already using.

1. Least education.
2. Oldest.
3. Participate least in formal organizations, cooperatives and government programmes.

4. They hardly read farm magazines and bulletins.

These people are likely to belong to the backward classes, may be working as sharecroppers and agricultural labourers, with very little land of their own. They are generally resource poor people with little surplus to invest in their production enterprise. They generally live in areas having least urban influence and, socially and economically the most disadvantaged.

Lecture No.15: Factors influencing adoption process – social, personal and situational: Capacity building of extension personnel and farmers – training = meaning – types of training – pre-service training, in-service training, orientation, induction training, refresher training and training for professional qualification – training to farmers – time, duration and venue.

FACTORS INFLUENCING ADOPTION PROCESS:

I. Social factors: Community standards and social relationships provide the general framework wherein the process of change occurs, and they account for the differences between one community (or group) and another.

(1) Social values: In some groups and communities, people place a higher value upon material gains and money than they do in others. In some other groups; changes in farming are encouraged and expected; prestige is attached to the adoption of new ideas and techniques. In others, more value is placed upon tradition and little freedom is allowed for the individual to deviate from the group's pattern in adopting innovations.

If the adoption of new practices goes contrary to the established customs and traditions of the people, the innovator may be ridiculed or lose prestige. The extent to which changes are adopted depends on the values and expectations of the group and upon the extent to which the individual is expected to conform. Where there is great emphasis on maintaining traditions and values rooted in the past, change occurs more slowly. On the other hand, where emphasis is upon individualism and personal success, change occurs more rapidly.

(ii) Local Leadership: The acceptance of change is also influenced by the nature of leadership and control in the group or community. In some communities, none would accept a new idea, unless and until one man (the leader) in the community is sold on the idea. Once sold, he would influence all farmers in the community to accept it. In such situations, it is important to identify and use such influential leaders. The influence of informal leaders is likely to be greater where neighbour, kinship and community ties are the strongest.

(iii) Social contacts: The nature and extent of social contact within, and outside the community is important in the diffusion of new ideas and techniques, as indicated below:

a) Nature of Social contacts: The presence of organizations whose objectives include the promotion of changes will aid directly and indirectly in the diffusion process. On the other hand, where social contacts are primarily through kinship, visiting and informal activities, there may be greater resistance to change.

b) Extent of Social contacts: The extent to which social contacts are confined to the immediate locality is a factor. The broader the social orientation of the people, the more likely they are, to accept new ideas. Only a few individuals may have such outside contacts, but they may be in a position to influence their neighbours. Local orientation on the part of the

majority is not necessarily a limiting factor on the diffusion of new ideas, so long as a few leaders have outside contacts.

c) Social distances: The social distances associated with wide status differences are also a factor in the diffusion of farm information through inter-personal channels. For example, tenant farmers in some areas may not get ideas from the large farm owners because of their lack of contact. Also small-scale farmers may fail to communicate with large-scale farmers. Rigid class structure impairs inter-class communication of ideas.

II. PERSONAL FACTORS: Why some people adopt new ideas and practices more quickly than others relates in part to the individual himself.

(1) Age: Elderly farmers seem to be somewhat less inclined to adopt new practices than younger ones. (However, the findings of several Indian studies do not support the existence of a negative relationship between age and adoption).

(2) Education: More than eight years schooling is almost always associated with higher adoption rates than lesser amounts.

(3) Psychological characteristics:

a) Exposure to reliable sources of farm information may create a state of rationality which in turn predisposes.

b) A *mentally flexible* person has higher adoption rates than one with mental rigidity.

c) Some people are found to be more prone to change than others.

(4) Values and attitudes (cultural characteristics):

(a) Values found to be positively related to farm practice adoption rates are: a desire by farmers and their wives for a high school or college education for their children, a high emphasis on science and material comfort, and also wide contacts within and beyond the community.

(b) A high emphasis on traditionalism, isolationism and security e g., owning farm free of debt) has been found to be negatively associated with adoption of improved practices.

III. SITUATIONAL FACTORS: Reasons why farmers adopt farm practices more quickly at one time than another relate to the situation in which they find themselves when alternative courses of action become known.

1) THE NATURE OF THE PRACTICE: The speed with which adoption will take place is
partly dependent on the nature of practice itself.

A) Complexity: Generally speaking, the more complex a practice and the more change it requires in the existing operations, the more slowly it will be adopted.

The following classification of practices in terms of their complexity roughly represents the decreasing order of speed with which acceptance may be expected to occur:

a) **A simple change**: A change in materials and equipment only, without a change in
technique or operation (e. g., new variety of seed).

b) **Improved practice:** Change in existing operation with or with-out a change in
materials or equipment (e. g., change in rotation of crops).

c) **Innovation**: Change involving new technique or operation (e. g., contour cropping).

d) **Change in total enterprise:** e. g., from crop to livestock farming.

B) **Cost**: Those practices which cost little seem to be adopted more rapidly than those which are more expensive.
C) **Net returns**: Those practices which yield, the greatest marginal returns per rupee invested, and in the shortest time seem to be adopted most readily.
The above two characteristics viz., cost and net returns are also referred to as "relative advantage" or "Profitability".
D) **Compatibility:** Is the degree to which an innovation is consistent with existing values and past experiences of the adopters. An idea that is not compatible with the cultural norms of a social system will not be adopted so rapidly as an idea that is compatible e. g., the lack of compatibility of beef production with cultural values in India.
E) **Divisibility (Trialability):** Is the degree to which an innovation may be tried on a limited basis.
New ideas that can be tried on a small scale or on the installment plan will generally be adopted more rapidly than innovations that are not divisible. e. g., new seeds or fertilizers can be tried on a small scale, but new machinery or a thing like cow dung gas plant cannot be so tried.
F. **Communicability (Observability):** Is the degree to which the results of an innovation may be diffused to others. The results of some practices are easily observed (e. g., application of nitrogenous fertilizer to plants), while the results of some innovations are not easily observed (e. g., pre-treatment of seeds, or soil conservation measures).
2) **FARM INCOME**: High farm income nearly always is associated with high adoption levels.
3) **SIZE OF FARM**: Size of farm is nearly always positively related to the adoption of new farm practices.
4) **TENURE STATUS**: Adoption scores are usually higher for owner cultivators than for tenant cultivators.
5) **SOURCES OF FARM INFORMATION USED:**
a) The number of sources used or the number of contacts with information sources is
positively related to adoption rates.
b) A high positive correlation is particularly evident with the use of such sources as
Government agencies.
c) High dependence on relatives and friends as sources of information is usually negatively associated with the adoption of new farm practices.
6) **LEVEL OF LIVING:** Since successful farm practice adoption is instrumental in providing the means for supporting a higher level of living, a positive correlation between the two would be expected and is generally found.

AGRICULTURAL JOURNALISM

According to Webster's Third International Dictionary, Journalism means "the collection and editing of material of current interest for presentation, publication or broadcast". According to Chamber's Twenticth Century Dictionary, Journalism means "the profession of conducting or writing for public journals" The word journalism is derived from "journal"; its best contents are 'dujour' of the day itself. Journal means a daily register or a diary – a book containing each day's business or transactions. The word

journal also connotes a newspaper published every day or even less often or a magazine. Thus, journalism means "the collection and editing of material of current interest for presentation, publication or broadcast".

A journal is defined as a register of a diary of public events which has a definite periodicity of publications say a daily, weekly, a bi-weekly, fortnightly and monthly so on,

Journalism is defined as a profession of conducting or writing for a journal which may be a newspaper, a magazine, radio, a television.

Agricultural journalism is journalism as applied to agriculture i.e. Agricultural journalism is a profession of conducting or writing in agriculture and allied subjects for a journal, which may be a newspaper, a magazine, radio, a television.

Importance:

Farmers like many others are also curious. They want to know what is happening or has happened about agriculture. They have a desire for information, because they want to have a better knowledge of the world around them and improved their living standards by increasing the productivity and production. News satisfies this curiosity and this desire for information. People who can read, listen and have information enjoy certain status in our villages. Others look to them as 'knowing' or informed people and look to them for information.

The agricultural extension personnel who are on the job to disseminate the news or transfer of technology to the farming community should invariably understand the agricultural journalism and utilize the mass media channels effectively.

Scope:

The farmers are information hungry and present public extension system is not able to meet the demand of the farmers for information. The farmer and extension worker ratio is widening. On the other side, communication tools development is enormous. Private extension is also coming into picture. Today, journalism in India has got lot of scope with media barons opening new channels or newspapers or publishing houses on a regular basis. The competition is so rife that each channel or newspaper tires to produce something exclusive, which in turn has given the audience a great deal of variety.

Characteristics of News:

- News has geographical boundaries
- News is always revealing
- News is what interests people
- No news interests all people
- Most people read only part of the paper they buy
- Their reading habit is selective
- They read what they consider is news

Factors determining the news values:

1. **Timeliness**: The reader wants his news to be new. News coming from the press must be really not, in the sense of being not only exciting but new, not till they are known. The news must be need based and timely.

2. Proximity: Nearness play a dominant role. The reader finds more interest in a minor event closer to his place than a major and important event happened miles away. But proximity is both geographical and emotional. A farmer of nearby village harvesting a record yield is more interesting to the farmers than in other parts of the country or a far off place.

News from research i.e. high yielding variety released by ANGRAU is more important and interests Andhra Pradesh farmers than in Karnataka.

3. Magnitude (Size): The very small and very large size also draws the attention of the readers.

For example 3000 farmers attending Kisan Mela attracts rather than 100 farmers attending kisan mela. Similarly one or two people died in accident may not be that much important than 40 people died in any accident.

4. Importance: This is subjective. It has direct bearing on the kind of audience that the newspaper in mind. What sounds important to a local regional newspaper may not be important to The Hindu and vice-versa.

5. Truthfulness: Accuracy of the source of the news is important.

6. Objectivity: News reporting should be free from bias. People are interested in the papers that maintain objectivity

7. Names make news (Prominence): The important persons like President, Prime Minister, Chief Minister and Governor and they make news rather than ordinary person

8. Suspense: Readers are more interested in this type of news which gives some suspense in the beginning and giving the information at the end.

9. Conflict: Routine and happiest events may not make news but if any quarrel is there that attracts the readers

10. Human interest: Readers are attracted by human interest (names of persons and villages)..

Sources of News:

1. Result demonstrations
2. Research Stations
3. Research publications – Annual reports, highlights
4. Kisan melas
5. Farmers fields
6. Agricultural Universities / State Departments
7. Other extension activities like field days/training programmes, rythu sadassus etc
8. Plan estimates related to agriculture and allied activities
9. Agriculture finance institutions
10. Agriculture input agencies
11. Agriculture Market committees
12. Electricity and irrigation sectors
13. Farmers committees and associations
14. NGOs etc.

Categories or Types of News

- Before and after event stories
- Experience and success stories
- New development – such as pest outbreaks, scientific discoveries, weather and crop conditions, progress made on plans
- Predictions – such as long range crop and livestock report economic outlook information, long range weather forecasts
- Subject matter - when tied to an event, situation, development or problem

The word 'communication' comes from the Latin word *communis*, meaning common. This implies that when we communicate, we are trying to establish 'commonality' with someone through a message. Communication then, is a conscious attempt to establish commonality over some idea, fact, feelings and the like, with others. In essence, it is a process of getting a source and a receiver tuned together for a particular message or a series of messages.

Definitions of communication

1. Communication is anything that conveys meaning that carries a message from one person to another (Brooker, 1949).

2. Communication is all of the procedures, by which our mind can affect another (Weaver, 1966).

3. Communication is the mutual interchange of ideas by any effective means (Thayer, 1968).

4. Communication may be defined as a process by which an individual - the communicator, transmits (usually verbal symbols) to modify the behaviour of other individuals - communicatees (Hovland, 1964).

5. Communication is a process by which two or more people exchange ideas, facts, feelings, or impression in ways that each gains a common understanding of meaning, intent and use of message (Leagans, 1961).

6. Communication is the process by which messages are transferred from a source to receiver (Rogers and Shoemaker, 1971).

7. Communication is the process of sending and receiving messages through channels which establishes common meanings between a source and a receiver (Van den Ban and Hawkins, 1988).

Most of these definitions imply involvement of the actors over a message or content, some sort of interaction, by some commonly understood means, and with some effect. Analysis has also shown that several elements are involved in a communication encounter. Because of our interest in technology transfer, we can define communication as a process by which extension workers individually, in a group or through a medium, exchange attitudes and share knowledge and / or skills on behalf of an organization with farmers/ farm women, through such a ways that each gains comprehension, understanding and use of the message.

Communication is usually thought of as taking place by means of verbal symbols but a socio-psychological analysis requires that attention be paid to the full range of symbols that may be used by human beings, including gestures, tone, facial expressions, drumbeats, telegraphic click, flags, smoke signals, colour, size, distance etc.

Models of communication

1 Aristotle's model

According to Aristotle, communication has three ingredients

1. Speaker – the person who speaks
2. Speech – the speech that the individual produces
3. Audience – the person who listens

Speaker ⟶ Speech ⟶ Audience

2 Shannon- Weaver's model

The Shannon-weaver (1949) model is consistent with Aristotle's proposition. According to them, the ingredients of communication are:

1. Source
2. Transmitter
3. Signal
4. Receiver
5. Destination

Source → Transmitter → Signal → Receiver → Destination

3 Berlo's model

According to Berlo (1960) the model of communication consists of

1. Source
2. Encoder
3. Message
4. Channel
5. Decoder
6. Receiver

Source → Encoder → Message → Channel → Decoder Receiver

4 Schramm's model

According to Schramm (1961), the communication process involves –

1. Source
2. Encoder
3. Signal
4. Decoder
5. Destination

Source → Encoder → Signal Decoder Destination

5 Leagan's model

The communication model forwarded by Leagans (1963) has the following elements-

1. Communicator
2. Message
3. Channel
4. Treatment
5. Audience
6. Response

Communicator → Message → Channel → Treatment Audience Response

6 Rogers and shoemaker's model

Rogers and shoemaker (1971) thought of the communication process in terms of the
S-M-C-R-E model, the components of which are –

1. Source
2. Message
3. Channel
4. Receiver
5. Effects

Source → Message → Channel → Receiver Effects

ELEMENTS OF COMMUNICATION PROCESS

Successful communication involves six key elements: a skillful ***communicator*** sending a useful ***message*** through proper ***channels***

effectively ***treated*** to an appropriate ***audience*** to evoke the desired ***response***.

Source: Some person / group of persons with a purpose
Message: The purpose of the source is expressed in this form called message.
Code: System of signals for communication
Encode: To put the message into code or cipher.
Encoder: Takes ideas of source and put them in a code; thus, the source's purpose is expressed as message
Channel: A medium / a carrier of message through which signals move.
Decoder: Converts message in the code into ordinary language which may be easily understood
Receiver: The target of communication.

1. The Communicator

This is the person who starts the process of communication in operation. He is the source or originator of messages. He is the first to give expression to messages intended to reach an audience in a manner that results in correct interpretation and desirable response. The communicator may be a Village Development Officer, a Principal or an Instructor in a Training Centre, a Block Development Officer, a villager, an administrator or any other person. In order to be effective the communicator should possess the following characteristics.

1. He should have knowledge of message, objective and the audience.
2. People should have faith on the communicator.
3. He should have interest in his audience and their welfare.
4. He should select and treat the message properly.
5. He prepare a plan for communication
6. He knows how to organize his message.
7. His language and cultural compatibility should be in the line with the receiver.
8. He should have positive attitude towards the message and the audience.

2. Message

A message is the information a communicator wishes his audience to receive, understand, accept and act upon. Messages, for example, may consist of statements of scientific facts about agriculture, sanitation or nutrition; description of action being taken by individuals, groups or committees; reasons why certain kinds of action should be taken; or steps necessary in taking given kinds of action. The key objective of communication is to transmit useful message so that all receivers understand clearly and successfully. A good message should have the following characteristics.

1. In line with the objectives to be attained.
2. Clear and understandable by the audience.
3. In line with mental, socio-economic and physical capabilities of the audience
4. Related to economic and social needs, interests and values of the audience.
5. Specific, factual, correct and no irrelevant material should be included.
6. Appropriate to the channel selected.
7. Relevant to the audience.

8. Cover only one point at a time.

3. Channels of Communication

Channels are the physical bridges between the sender and the receiver of messages - the avenues between a communicator and an audience on which messages travel to and fro. They are the transmission lines used for carrying messages to their destination. Thus, the channels serve as essential tools of the communicator.

A channel may be anything used by a sender of message to connect him with intended receivers. The crucial point is that he must get in contact with his audience. The message must get through. Common channels of communication in the extension situation are the 'Extension Teaching Methods'. Certain characteristics of channels are identified and are delineated below.

1. It specifies the direction of message flow
2. It gives the message accuracy. Low (in interpersonal) and high (in mass media)
3. It selects the recipient depending upon the channel
4. It produces feedback to the sender of the message
5. It overcomes the selectivity processes
6. It is capable of bringing desirable effects as the part of the audience.

4. Treatment of Messages

It is the way of handling the message in such a way that the treated message be sent over the channels with the maximum probability of reaching the destination effectively. It relates to the techniques or details of procedure or manner of performance essential to have expertise in presenting the message. Hence treatment deals with the design of method for presenting the message.

The purpose of the treatment of message is to make the message clear, understandable and realistic to the audience. It usually requires original thinking, deep insight into the principle of human behaviour and skill in creating and using refined techniques of message presentation. At this point, the effective teacher is separated from the less effective one, and the art of teaching comes into play. The message should be treated in the following manner.

a. Method of general organization

1. Repetition of ideas and concepts.
2. Contrast of ideas (positive and negative things).
3. Chronological – compared to logical and psychological.
4. Presenting one side compared to two sides of an issue.
5. Emotional compared to logical appeals.
6. Starting with strong arguments compared to saving them until the end of presentation.
7. Let the audience draw the conclusion.

b. Use of symbols, variation and devices for presenting the ideas.

c. Message should be treated by giving quotation, jokes and contrary against the common opinion during the communication process.

5. The Audience

An audience is the intended receiver of messages. It is the consumer of messages.

An audience may consist of one person or many. It may comprise men, women, or both; youth groups, villagers or their leaders. An audience may

be formed according to occupation groups as farmers or artisans; professional groups, as engineers, educators, administrators etc.

The more homogenous an audience, the greater the chances of successful communication. Likewise, the more a communicator knows about his audience and can pinpoint its characteristics the more likely he is to make an impact.

Communication to be successful, must be target oriented. The communicator must know the target, their needs, interests, resources, facilities, constraints and even their approximate number and location. Following specified aspects will help a communicator to clarify the exact nature of an audience and how to reach it.

1. Communication channels established by the social organization.
2. The system of values held by the audience.
3. Individual personality factors.
4. Original and acquired abilities.
5. Educational, social and economic levels.
6. Attitude of the audience.
7. How the audience view the situation.

6. Audience Response

Response by an audience to messages received is in the form of some kind of action to some degree, mentally or physically. Action, therefore, should be viewed as a product, not as a process; it should be dealt with as an end, not as a means.

1. Mass communication intensifies propaganda conflicts
2. Much available information is imperfectly absorbed
3. Lack of primary experience affects communication
4. Communication builds on existing attitudes
5. Mass communication increases the communality of experience
6. Communication devices have the ability for thought control
7. Books, Newspapers, Magazines, Leaflets have effects like instrumental, prestige, reinforcement, enriched aesthetic experience and respite.
8. Cultural values and the social organisation are determinants of communication.

Barriers of Communication

Barriers of communication can be classified under broad headings as follows

a. Relating to communicator

1. In-effective environment
2. Unorganized efforts to communicate
3. Standard of correctness
4. Standard of social responsibility
5. Cultural values and social organisations
6. Incorrect concept of communication process

b. Relating to the transmission of message

1. Incorrect handling of the channels
2. Wrong selection of channels
3. Physical distraction

4. Use of inadequate channels in Parallel

c. Relating to receiver

1. Attention of the listeners
2. Problems of cooperation, participation and involvement
3. Problem of homogeneity
4. Attitude of the audience towards the communicator