LECTURE NOTES - AEXT 292 (1+1)

FUNDAMENTALS OF EXTENSION EDUCATION

S.No.	Topics
1	Education: meaning, definition & types; Extension education- meaning, definition, concepts, characteristics, scope and process, Objectives and principles of extension education
2	Extension programme planning – meaning, process, principles; Extension programme planning – steps in programme development.
3	Extension systems in India: Extension efforts in pre-independence era – Srinikethan, Marthandam, Sevagram, Firka development scheme, Gurgaon experiment, etc., Extension efforts in post-independence era – Etawah pilot project, Nilokheri experiment etc.,
4	Reorganized Extension System (T&V system) various extension/ agricultural development programmes launched by ICAR / Govt. of India-IADP, IAAP, HYVP, KVK, IVLP, etc.
5	Rural development- meaning, definitions, concept, various rural Development programs launched by Govt. of India
6	Community development- meaning, definition, concept principles, philosophy of C.D.
7	New trends in agricultural extension- privatization extension and cyber extension/ e-extension, market-led extension, farmer –led extension, expert systems, etc.,
8	DWCRA, Commodity Interest Groups (CIGs), Farmer Producer Groups (FPG).
9	Transfer of technology : concept and models and capacity building of extension, extension personnel
10	Rural leadership : meaning, definition and concept, types of leaders in rural context, roles of leaders and methods of identification of a Rural leader
11	Extension administration: meaning, definition and concept, principles and functions. Monitoring evaluation –definition and concept, principles. Monitoring and evaluation of extension programmes
12	Extension Teaching Methods- meaning, classification, individual, group and mass contact methods
13	ICT Applications in TOT (New and Social Media), media mix strategies.
14	Communication: meaning and definition; Principles and functions of Communication, Models and barriers in Communication.
15	Diffusion of Innovation: Concept and meaning, process, attributes of innovation and stages of adoption, adopter categories.
16	Agriculture Journalism

LECTURE 1

Education: meaning, definition & types; Extension education- meaning, definition, concepts, characteristics, scope and process, Objectives and principles of extension education

EDUCATION

MEANING OF EDUCATION

Education is the process of giving training and instruction to people to develop their knowledge, abilities, skills, character and mental powers.

The modern definition of *education is the production of desirable changes in human behaviour- in knowledge (things known), attitudes (things felt) and skills (things done),* in all of them or in one or more of them.

Knowledge: It includes facts, concepts, principles and relationship

Attitude: An attitude can be loosely defined as a feeling towards some object, person and situation or idea.

Skills: Ability to do things.

☐ *Knowledge or cognitive*- Eg: Extension worker educates a farmer on cultivation practices in sweet corn (change in knowledge).

☐ *Attitude or affective*- Eg: Extension worker changes the negative attitude of a women farmer and makes them adopt Mushroom cultivation (things felt)

☐ *Skills or psychomotor*- Eg: Extension worker improves skills of a cotton farmer on stem application of pesticide (things done)

MEANING OF FORMAL, INFORMAL AND NON FORMAL EDUCATION

Methods of education: Education must be conceived as a lifelong learning process. Human beings learn mainly by three methods through:

1. **Informal education**: It is a lifelong educational process by which every individual acquires and accumulates knowledge, skills, attitudes, and insights, from daily experiences and exposure to environment at home, at play etc.

Eg: Little baby, as she grows up, learns how to recognize her parents and how to eat

2. **Formal education**: It is highly institutionalized, uniform, full time, chronologically graded, hierarchically structured education system which starts from primary school to university education

Eg: Education in schools & colleges

3.**Non-formal education**: It is also organized and systematic educational activity outside the framework of formal education system to provide selected types of learning to particular sub groups of population, adults, as well as children according to their need.

Eg: Extension Education. Extension workers improve the skills in cotton farmers on stem application of pesticide.

DIFFERENCES BETWEEN FORMAL, NONFORMAL AND INFORMAL EDUCATION

S. No.	Criteria	Formal education	Non formal education	Informal education
1	Concerned with	Educational growth of children and youth preparing them for future	Adults and youth actual life situations	Incidental learning
2	Attendance	Is compulsory	Participation is voluntary	-
3	Learners	Are relatively more homogenous in terms of age, education, experience, knowledge, interests and needs	Are relatively more heterogeneous in terms of age, education, experience, knowledge, interests and needs also vary with value systems, cultural background, etc.	Individual learning process
4	Preconceived ideas	Learners do not generally have any preconceived ideas	Learners generally have preconceived ideas and notions because of their past experiences	May or may not have preconceived ideas
5	Curriculum	Fixed and has pre decided subjects. Students should adopt themselves to the curriculum offered	No fixed curriculum and it is flexible to meet the diverse needs and demands of farmers	On the spot learning
6	Teaching	Is more formal with classrooms, prescribed textbooks, and examinations	Is more informal without any fixed venue and textbooks, timings and examinations, it is specific and problem oriented	No teacher (self-learning)
7	Mode of instruction	Vertical- from teacher to student. More instructive in nature	Horizontal. Shared learning between teacher and learner	-
8	Method of learning	Starts with theory followed by practical	Starts with practical and goes on to theory	Self-learning
9	Teacher	Is older and experienced than the learners	May be younger and inexperienced than the learners	No teacher
10	Knowledge flow	Vertical in nature	Horizontal in nature	-

11	**Evaluation**	More formal in the form of marks, grades etc	More informal evaluation	-
12	**Approach**	Deductive	Inductive	-
13	**Degrees and diplomas**	will be awarded	No degrees and diplomas are awarded but as this non formal education develops certificates may be given as recognition of acquired skill	No degrees and diplomas will be awarded
14	**Orientation**	Board based and general in nature	Specific to situation	-
15	**Nature of Education**	It aims at developing learners physical and mental faculties. In the institutional education, knowledge and to some extent skills of the students are increased	Aims at developing knowledge, attitudes, and skill in learners pertaining to specific subject. By extension education the human behaviour is changed.	-
16	**Duration**	It is time bound Programme	Free from regimentation, participatory in nature	-
17	**Place of teaching**	Learning takes place within the four walls of the institution	Learning in real life situation-in villages and fields.	-
18	**Need orientation**	Has definite programme and do not run according to the needs of the student	It is according to the needs of the people and availability of resources	-

EXTENSION EDUCATION AND AGRICULTURAL EXTENSION

Meaning and Definitions

Extension is a programme and a process of helping village people to help themselves, increase their production and to raise their general standard of living.   - **D. Ensminger, 1967**

Extension is a two way channel; it brings scientific information to the village people and also takes the problems of the village people to the scientific institution for solution. It is a continuous educational process, in which both learner and teacher contribute and receive.

Extension Education is a science which deals with the creation, transmission and application of knowledge designed to bring about planned changes in the behaviour-complex of people, with a view to help them live better by learning the ways of improving their vocations, enterprises and institutions.   - **Reddy A Adivi, 1993**

Extension Education is an applied science consisting of content derived from research, accumulated field experiences and relevant principles drawn from the behavioural sciences synthesized with useful technology into a body of philosophy, principles, content and methods focused on the problems of out-of-school education for adults and youth.

-Leagans (1961)

From the above definitions, it is concluded that:

"*Extension education is a professional method of **non-formal education** to bring desirable changes in knowledge, skills, attitudes and understanding of the rural people to improve their social, economic and psychological status.*"

AGRICULTURAL EXTENSION

It is a professional method of non-formal education aimed at inducing behavioural changes in the farmers for increasing their income through increased production and productivity by establishing firm linkages with research for solving farmer's problems ensuring adequate and timely supply of inputs and using proven methods of communication for speeding of the process of diffusion and adoption of innovations.

It may be defined as a special branch of Extension Education which deals with the economic and social aspects of people engaged in or associated with agriculture -**National Commission on Agriculture, 1976**

CERTAIN CONCEPTS OF EXTENSION

There are three main concepts in Extension. They are

1. Education

2. Extension Education Process

3. Salesman ship

1. Education

The basic concept of Extension is that it is Education

What is Education? Education is the production of desirable changes in human behaviour. Extension is providing education. The three kinds of behavioural changes produced through Extension Education are illustrated below:

1. Change in knowledge

Ex: Extension worker can improve knowledge of paddy farmers on WTO through trainings. Ex: Knowledge of rural women on pesticide hazards can be improved by giving trainings

2. Change in skills (Mental and physical).

a) Mental skills: Application of knowledge in solving the problems of life *i.e.* ability of the person to work out solutions and ways to meet new problems.

Ex: Calculation of seed rates, fertilizer dosages, pesticide dosages, etc.

b) Physical skills: Ability of a person to do any work physically

Ex: Skills of women farmers on mushroom cultivation can be improved by demonstrations. Ex: Skills of farmers on poison bait preparation for Spodoptera management can be improved by demonstrations.

3. Change in attitude: Ex: Attitude of farmers can be changed from paddy cultivation to flower cultivation through exposure visits. Eg: Negative attitude of women farmers towards mushroom consumption can be changed by explaining nutritional importance to them.

Change in attitude is most important one usually neglected. Extension worker may improve knowledge and skills of farmers in SRI method of paddy cultivation but unless the attitude of farmers is made positive towards SRI, implementation does not happen.

Example for KAS change in a single programme: Rodent Management

Change in Knowledge: Farmers are trained to make them aware of rodent management techniques viz., modern rat traps, use of celphos tablets, bromodiolone, fumigation techniques and ITK's and dosages, time, method and place of application of chemicals etc.

Change in skills: Farmers are demonstrated on how to locate live burrows, baiting procedure etc

Change in attitude: farmers attitude is killing rat is a sin because it is the asana of lord Ganesh, this attitude has to be changed by explaining them the extent of losses caused by rodents to them and to their neighbours, if left uncontrolled.

2. Extension Education Process

THE CONCEPT OF THE EXTENSION EDUCATIONAL PROCESS

The earlier concept of Education aiming at improvement in Knowledge, Attitude, Skills happens step wise in a cyclic manner which is termed as Extension Education Process. The concept of Extension Education Process was developed by ***Dr. J. Paul Leagans***. According to him, Extension Education takes place as a process. Education starts with study of present situation and identification of problems. Based on the problems identified, solutions are found out and objectives are formulated. In the third phase, plan of work is taught on how to attain the objectives, then the entire process is evaluated and tested whether formulated objectives are attained or not and in the final stage reconsideration about the unattained objectives and unaddressed problems is done. Any Extension work undertaken in villages follows the same path.

Fig: Extension Education Process
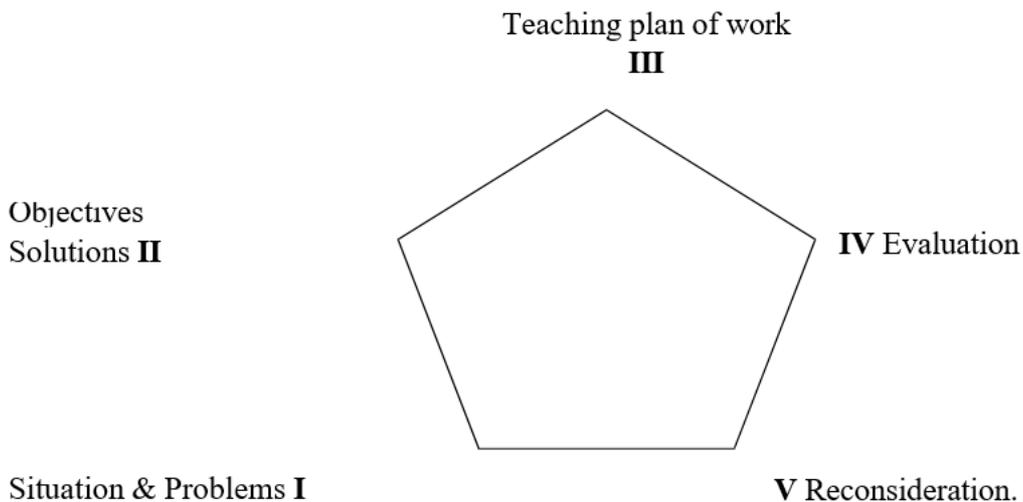
1. The first phase is analysis of the situation: This requires a large amount of facts about all aspects of the situation. Facts are needed about the people, their interests (Agriculture or Poultry or Ag + Horti) education (Eg: literate: 21%, illiterate: 76%, semiliterate; 3%), what they think they need, their social customs, habits and folkways. Facts are needed about the physical situation such as soil. Ex: Red soil (29%), black soil (50%), type of farming (Agriculture or Poultry or Ag + Horti), markets (Mandi or regulated market), size of farms (small, medium, marginal or big), cropping systems (Paddy fallow pulses or Maize, Maize- Groundnut), housing condition (kuccha or pucca houses), community services and communications.

2. The second phase is deciding upon objectives. It is necessary to distinguish between levels of objectives by separating the general objectives from the specific or working objectives. The planning process must enable the people to select a limited number of problems and to state their objectives clearly. The solutions to be offered must give satisfaction. Objectives should express the behavioural changes in people as well as the economic or social outcomes which are desired.

3. The third phase is teaching. This involves choosing (1) the content or what is to be taught (Pest Management or fertilizer management or organic farming, etc) and (2) methods and techniques of communication (Lecture or Method demonstration or Exposure visit). We must use from six to nine different methods of communication to stimulate learning.

4. The fourth phase in evaluation of the teaching. This should determine to what extent objectives have been reached. This will also be a test of how accurately and clearly the objectives have been stated. The process of evaluation may be simple and informal or it may be formal and very complex.

5. The fifth phase is a reconsideration after evaluation has taken place. This step consists of a review of previous efforts and results which reveal a new situation. If this new situation

shows the need for further work, then the whole process may begin again, with new or modified objectives. Hence this process is continuous.

AN EXAMPLE OF EXTENSION EDUCATION PROCESS
1. ANALYSIS OF SITUATION

VILLAGE INFORMATION: Type of soils, type of crops, nature of irrigation, soil problems, pest problems, markets, godowns, illiteracy, farm holdings, extension services, livestock, farmers organizations, Agricultural inputs, etc

PROBLEMS IDENTIFIED

1. Wild boars

2. Heliothes in cotton

3. Electricity problem

4. Lack of good market price for produce

5. Low yields in paddy due to water shortage

> Out of the five problems, fifth one is the major problem in the village

2. DECIDING UPON THE OBJECTIVES: Keeping in view of the above, for the identified problem, the following objectives were chalked out.

General Objective: To improve paddy yields by adoption of SRI in Parimi village.

Specific objectives: i. To improve farmers knowledge of SRI by organizing training programmes.

ii. To develop skills among farmers in SRI by conducting demonstrations.

iii. To improve yields in SRI paddy by 40%

2. **TEACHING PLAN OF WORK:** To carry out the above objectives successfully, the following teaching plan of work is prepared.

S.No	Content	Teaching methods	Teaching Aids
1	Seed rate, soaking and incubation	Lecture + Demonstration	Powerpoint presentations, videos, posters, Flip charts, live samples and SRI implements demos
2	Raised nursery bed and sowing		
3	Main field preparation and transplanting		
4	Running of marker		
5	Fertilizer management		
6	Weeding and conoweeder operation		
7	Irrigation management		
8	Pest and disease management		
9	Harvesting		
10	Post harvesting		

4. EVALUATION OF TEACHING: As scheduled in the beginning of the programme, whether five training programmes and five demonstrations were organized or not? If not organized, what are the reasons? The change in the knowledge is measured with the help of an interview schedule and it was found that, only 60% of the trainees gained the knowledge on SRI method.

The farmers are asked to raise nursery bed, mainfield, run a marker and cono-weeder practically in the field and observed that, only 40% of the farmers have gained the skills. After harvesting the crop, it as found that, the yield increase was only 20%, instead of targeted 40%.

5. RECONSIDERATION: Reasons for differences in the knowledge and skills gained by the farmers, Reasons for attaining low yields than the targeted 40% improvement in the yields were reviewed.

3. Salesman ship

THE CONCEPT OF SALESMANSHIP

Extension teaching is sometimes compared to commercial Salesmanship. It is pointed out that the extension worker is primarily engaged in the "selling" of ideas. If we compare Extension Personnel with salesperson, we come across many similarities between them.

S.No.	Extension worker	Commercial sales man
1	Sells new ideas	Sells articles of a shop
2	Personnel's aim is welfare of the society without any self-interest	Aim of salesperson is limited to him or is to earn Money
3	Salesperson sells materialistic articles by which only status of the family can be raised	Extension Personnel provide educational knowledge by which desired change can be bbrought about in the awareness, capacity of work and their views, so that all-round development of that person could be achieved.

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
9. Public affairs

IMPORTANCE OF EXTENSION

Extension lays emphasis on "*How to teach"* instead of on *"What to teach*" so that the people can be encouraged to adopt new research techniques easily. In other words, if a person is very knowledgeable of various methods and techniques but does not know how to explain them or express them, then his knowledge has no meaning. Therefore, the power to express knowledge and viewpoint also plays a crucial role.

Extension Education is primarily for the rural development. Its main objective is to bring necessary change in the beliefs or views of people. Extension education is an educational process by which capabilities among people are developed to understand their problems and resources. It is utilized to make scientific methods available to the rural people, so that they can raise their agricultural production and their standard of living. In India, the aim of extension education is community development, which is possible only by bringing change in the behaviour of rural people. Extension education plays major role in bringing desirable change in rural people.

The research workers cannot disseminate or transfer the latest technology to the farmers directly because of these reasons: Lack of time for the research workers to go to the farmers' fields, they are not equipped or trained in the job to persuade the farmers to adapt the latest technology, lack of transport facilities, Language problem to speak and convince the farmers, on the other hand, farmers cannot adopt the latest technology because of the following reasons, the farmers do not know the location of various research stations, majority of the farmers are illiterates to go through the publications and research journals, farmers are economically handicapped to come and consult the research workers, problem of language to speak with the research workers.

Hence, an agency is required to minimize the gap or bridge the gulf between research workers and the farmers. This agency is termed as Extension and the people manning (working in) this agency is called '*Extension Workers'*.

EXTENSION EDUCATION – OBJECTIVES and PRINCIPLES

Objectives of extension:

Objectives are expressions of the ends towards which our efforts are directed. In other words, an objective is a statement of change in knowledge, feeling or action we want to bring about in people. An objective is that which a person, group or agency sets before itself as an object or condition to be attained.

Some extension workers like to make a distinction between the meaning of "objectives" and "goals". Objectives are defined as "directions of movement", while a *Goal is defined as the distance in any given direction one expects to go during a given period of time.*

The fundamental objective of extension is the **Development of the People** or "**the Destination Man"** mentioned in the context of Community Development in India.

More specifically stated, the following are general objectives or functions of Extension:

1.To assist people to discover and analyse their problems their felt and unfelt needs.

Need is a difference between what is and what ought to be. It is the lack of something. Need is what one desires.

Felt needs/recognized needs are those existence the people are aware and feel necessity of fulfilling them.

Unfelt needs/Unrecognized needs are those whose necessity the people don't realize at present, but these nonetheless are important.

Example of felt needs	Examples of unfelt needs
Low yields in paddy- due low yielding varieties, wildboars and rodents	Soil salinity problem, water shortage at maximum tillering stage
low yields in maize- due to water shortage, pest problems	local varieties of crops

2. To develop leadership among people and help them in organizing groups to solve their problems.

Ex: Formation of DWACRA groups, or RMG or SHG or FIG or CIG

3. To disseminate information based on research and / or practical experience, in such a manner that the people would accept it and put it into actual practice. **Ex:** Transfer of IPM in cotton through training programmes and demonstrations

4. To keep the research workers informed of the people's problems from time to time, so that they may offer solutions based on necessary research. **Ex:** Botrytis in castor, Heliothis in cotton, Fusarium wilt in redgram, Non-performance of cono-weeder in heavy black soils, etc.

The major objectives of Extension may also be categorized as follows.

i. Material – increase in production, income

ii. Educational – change the outlook of people or develop the individuals.

iii. Social and cultural – development of the community.

LEVELS OF OBJECTIVES

1. Fundamental objectives: These are all-inclusive objectives in extension, e.g., the fundamental objective of extension work is development of man or the full development of individuals. Such objectives are generally found in legislation and charters of organization

Ex: Good life, better citizenship, democracy etc.

2. General Objectives: These are more definite (specific) than fundamental objectives, and are directly associated with Extension Service and are generally found in statements of policies and purposes. *Ex: helping rural people to have better home living*

3. Working Objectives: In these specific subject-matter approach is focused at individual or group.

Ex: To improve farmers knowledge on cut flower cultivation

Working objectives have three parts-

i. Audience- Who are to be changed

ii. Type of change-Knowledge, attitude or skill

iii. Content or message-What are you trying to teach (What you want them to know, feel or do)

FOUR GREAT PRINCIPLES OF EXTENSION

A principle is a statement of policy to guide decision and action in a consistent manner. Thus, a principle is a universal truth or a fundamental truth and a settled rule of action.

According to *Mildred Horton*, **1952 the four great principles underlying extension services are:**

1**.** The individual is supreme in democracy.

2. Home is a fundamental unit in a civilization.

3. The family is the first training group of the human race.

4. The foundation of any permanent civilization must rest on the partnership of man and the land.

If we accept these principles as those underlying our extension activities, we must plan our work in accordance with them. Our objective in extension work is to help people reach higher levels of living – physically, mentally and spiritually. To reach these higher levels of living, people must be educated and trained to meet their responsibilities in relation to God, to their neighbors and to themselves. They must also know how to meet the responsibilities imposed by their environment. So we work with them as individuals, as families in the home, and with their environment.

PRINCIPLES OF EXTENSION EDUCATION

1. Principle of interests and needs: To be effective, extension work must begin with the interest and needs of the people. Many times the interests of the rural people are not the interests of the extension worker. Even though he sees the needs of the people better than they do themselves, he must begin with the interests and needs as they (the people) see them. In this way only can the extension agency mould the needs and interests of the people into realistic needs. Needs that can satisfy the individuals, groups, community and national interests, needs that can be fulfilled with the available resources should be fulfilled first. Ex: Extension work is successful if it is according to people's needs- Demonstration on paddy cultivation in low lying areas; Ex: Extension work fails if it is not according to people's needs- Demonstration on castor cultivation in low lying areas.

2. **Grass-roots principle:** For extension work to be effective and real, it has to be synthesis of democracy obtained at the level of the family and more particularly at the village level. Things must spring from below and spread like grass. At the same time, modern science calls for an advanced stage of organization of wiser coordination of thinking and action than is feasible in a single family or a single village. Aim of extension should be on local or existing situation. Programmes should start from grass root level. Ex: Extension worker should train illiterate farmers initially on marketing aspects rather than training on complicated topic like WTO or GATT.

3. **Principle of cultural differences**: Cultural differences exist between Extension worker and farmer. In order to make extension programmes effective, the approach and procedure must be suited to the culture of the people who are taught. Different cultures require different approaches. A blueprint of work designed for on part of the globe cannot be applied effectively to another part, mainly because of the cultural differences. These differences can be perceived in the way of life of the people, their attitudes, values, loyalties, habits and customs. Ex: A demonstration on Mushroom recipes should not be conducted in a village where Mushrooms are not eaten.

4. **Principle of cooperation and participation**: The participation of the people is of fundamental importance for the success of any educational endeavour. People must participate in the development of a programme and must feel that it is their own programme. Ex: Success of Anna Hazare watershed in Ralaegoan Sidhi is due to peoples participation.

5. **Principle of learning by doing:** Learning by doing involves use of maximum number of senses, hence it is very effective in changing behaviour. Ex: Method Demonstration on working of cono-weeder in SRI cultivation is very effective than lecture method. In extension work, farmers should be encouraged to learn new things by doing and by direct participation.

6. **Adaptability principle in the use of extension teaching methods**: No single extension teaching method is effective under all situations. The use of teaching methods must have flexibility to be adopted to the members of a community who differ in age, education, economic status, sex and proneness to change etc. Extension agents have found that they need a large number of teaching methods out of which they can select and revise the one effective for the purpose and best suited to the culture of the people. Ex: LCD powerpoint presentations can not to be used in a remote village where electricity is uncertain, instead posters, charts, live samples, can be used.

7. **Principle of leadership**: A good rule in extension work is never do anything yourself that you can get someone to do it for you. The involvement of leaders in extension programmes is the one single factor that determines the success or failure of those programmes. Local leaders are the guardians of local thought and action and can be trained and developed to best serve as interpreters of new ideas to the villagers. **Ex:** Farmers gets easily convinced about latest technology if it is adopted by a local leader than taught by a extension worker.

8. **Whole family principle**: The family is the unit of any society. All the members of the family have to be developed equally by involving all of them. This is because of the following reasons: The extension programme effects all members of the family, the family members have great influence in decision-making, it creates mutual understanding, it aids in money management, it balances farm and family needs, it educates the younger members, it provides an activity outlet for all, it unifies related aspects, such as the social, economic and cultural issues of the family, it assures family service to the community and society

9. **Principle of satisfaction**: Satisfaction of the people is very essential in extension work. Unless the people are satisfied with the end product of any programme, it is not going to be succesful. They must continue to act out of their own conviction and that is possible only when they derive full satisfaction through adoption of innovations well suited to their local needs and resources. **Ex:** If a farmer is satisfied by seeing baby corn cultivation in an exposure visit he tries to adopt it in his farm.

Lecture 2: Extension programme planning- meaning, process, principles; Steps in program development

EXTENSION PROGRAMME PLANNING

For any Extension programme to be effectively undertaken by an extension worker in a village (Ex: Project on village development or demonstrations or trainings, etc.) planning is essential. In this chapter an attempt is made to clarify about extension programme and planning. For the sake of easy understanding Extension Programme planning can be broken down into various words, which are clearly explained as:

Extension programme: According to Kelsey and Hearne (1967) "*an Extension programme is a statement of situation, objectives, problems, and solutions*". It is relatively permanent but requires constant revision. It forms the basis for extension plans. Ex: Mandal plans prepared by DAATTC's of ANGRAU.

Leagans (1961) says 'An extension programme is a set of clearly defined, consciously conceived educational objectives derived from an adequate analysis of the situation, which are to be achieved through extension teaching.

We can define Extension Programme as "extension programme is a written statement of situations, objectives, and a problem which is prepared by adequate regulated planning".

The function of extension programme is to provide a clear guide, a blue print, or a plan useful to extension workers in conducting ongoing extension programmes.

Extension programme projection can be defined as an administratively realistic form of long-range development involving the scientific approach in assembling facts as the basis for intelligent decision making by a broad representative group of local people - National Task Force, USA

Meaning of Planning and programme planning:

1. The meaning of planning is to solve the problems by using the available resources, and for it, to make necessary policy and to work for achieving the goal.

2. Planning is a process which involves studying the past and present 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.

3. Planning is to make efforts to solve the problems permanently, which can be achieved through co-operative efforts, means and aims. The effective planning is that in which the maximum number of objectives are fulfilled.

4. **Planning** is designing a course of action to achieve ends

5. Programme Planning: It is a process of working with people in an effort to recognize the unsatisfactory situation and determine possible solutions or objectives or goals

Meaning of Programme Planning: It is a decision making process involving critical analysis of the existing situation and the problems, evaluation of 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.

It is obvious from all the definitions that programme planning is the knowledge of present situations, its analysis to identify the problems, to put in the sequence according to needs, to determine the objectives, to find out the scientific solution, and to determine the activities for the selected work and where, when and by whom it should be done.

Example:

Village agriculture problems	Alternative solutions	Prioritization of problems
Soil salinity	Adding gypsum	Soil salinity
	Growing Green manure crops	Lack of irrigation water
	Cultivation of tolerant crops	
Non availability of seeds in time	Placing indents well in advance	
	Production of own seed	
Lack of irrigation water	Cultivation of Irrigated Dry crops	
	Use of micro irrigation	
	Discontinuation of Paddy cultivation	
Pest problems	Adoption of IPM practices.	

Local resources:

1. Seeds of Groundnut crop variety and gypsum is available with the department of Agriculture.

2. Subsidies are given for ID crops and micro irrigation

Extension Programme Planning

Programme planning is the process of bringing about planned change. It is a deliberate and collaborative process involving change agent and client-systems, which are brought together to solve a problem, or more generally, to plan and attain an improved state of functioning in the client- system by utilizing and applying valid knowledge.

It is the process of analyzing existing situation, problems critically finding out solutions to these problems, prioritizing and selecting the relevant solutions based on local needs and resources and finally preparing a written statement indicating the situation, objectives, problems and solutions with cooperation from all the stakeholders.

The programme development process has been defined as a continuous and cooperative activity involving lay people and the Extension staff, in which problems are identified, objectives is set forth and action is taken to reach the objectives".

The function of extension programme planning is to provide a clear guide – a blue print or a plan useful to extension workers in conducting an ongoing educational programme. **A well-developed programme is to the extension worker what a compass is to the seaman.**

Other important related terminology

Situation is a brief statement of the more general factual information together with the needs and desires of the people.

Plan of work is an outline of activities so arranged as to enable efficient execution of the entire programme. It answers the questions how, when, where and by whom the work is to be done.

Project is an outline of procedure and pertains only to some phase of extension work.

Calendar of work is a plan of work arranged chronologically.

Aims are generalized and broad statements of directions with respect to given activities.

Ex: Extension Worker's aim is to improve farmers' economic condition

Objectives are expressions of ends towards which our efforts are directed

Ex: To increase paddy yield by 40%

Goal is the distance in any given direction one expects to go during a given period of time.

Ex: To increase Paddy yield by 20 q/ha. in the current year

Plan is a predetermined course of action.

Problem- It is a condition that the people after study, with or without help have decided needs changing.

Solution- It is a course of proposed action to change an unsatisfactory condition to one that is more satisfying

Programme development process is defined as a continuous and cooperative activity involving lay people and the extension staff in which problems are identified, objective are set forth and action is taken to reach the objectives – **Sanders**

IMPORTANCE OF PROGRAMME

1. Helps in careful consideration of what is to be done and why.

2. Helps to furnish a guide or straight edge against which to judge all new proposals can be compared. A good programme guide tends to keep everyone concerned. It keeps them to avoid less important issues.

3. Programme helps to establish objectives towards which progress can be measured and evaluated.

4. Formulation of a programme gives continuity particularly during changes in personnel.

5. Programme helps to aid in the development of leadership.

6. It also serves as a means of choosing : a) the important from the incidental Problems b) the permanent from the temporary changes.

7. It helps to prevent mistaking the means for the end, and to develop both felt and unfelt needs.

8. Programme avoids wastage of time and money and promote general efficiency.

9. Programme helps to co-ordinate the efforts of the different people working for rural development.

10. Programme gives the extension workers more support by local people, thus ensuring cooperation and financial support.

11. Finally it helps to produce a written form of statement for general public use.

PRINCIPLES OF PROGRAMME PLANNING:

According g to **Kelsey *and Hearne*,** sound extension programme building is based

1. Sound programme building is based on the **analysis of the facts** in the situation

2. Sound programme planning **selects problems based on needs**

3. Good programme building determines**, objectives and solutions which** offer satisfaction

4. A good programme has **permanence with flexibility**

5. A sound programme has **balance with emphasis**

6. A good programme has a **definite plan of work**

7. Programme building is a **continuous process**

8. Programme building is a **teaching process**

9. Programme is a **coordinating process**

10. Programme planning provides opportunity for **evaluation of results**

1. Sound programme building is based on the analysis of the facts in the situation: to be effective every programme must start with the people and situation as they are and then build towards the ultimate goal of better living. It is important to take in to account all the facts concerning the people, the land, the community, the institutions, the organizations and the agencies operating in the area. Factual material is obtained through block staff, district staff available through local institutions like Panchayat, school, cooperative societies, youth club etc.

2. Sound programme planning selects "Problems based on needs: All the problems cannot be attacked once. It is necessary to select that most urgent concern. Choice of the problems must be among those brought out by the analysis of facts regarding what are felt and unfelt needs. To be effective extension work must begin with the interests of the people. Problems should be related to family, community and block situations. The problem should be arrived at democratically through participation of people, extension staff and others who can contribute to programme

3. Good programme building determines objectives and solutions, which offer satisfaction In order to hold interest the workers, must set specific objectives for whom they are intended should understand solutions, which are within reach and will give the satisfaction of achievement of objectives. They should be agreed upon by the people and be attainable and they should be stated in terms that can be measured. Objectives which are determined by extension worker should be made clear to the people

4. A good programme has permanence with flexibility: A good programme should be permanent. Without flexibility, the programme cannot meet the needs of the people. It has been found that particular items need to be changed to meet important emergencies. A programme should be prepared well in advance of its execution but not too far ahead of time. Ordinary events may be subjected to change in part though not in total. Programmes should meet long term and short term changes to meet special emergencies.

5. A sound programme has balance with emphasis: A good programme should cover the majority of their important interests. It must be comprehensive enough to embrace all the groups and all problems of family, village, block and district. It is futile to deal with one phase of life in a community as an end itself. At the sanction a few of the most important or timely problems should be chosen for emphasis

6. A good programme has a definite plan of work: No matter how well the programme is sorted out it is of no use unless carried out. This implies good organization and careful planning of action. A plan of work is answer to what, where, when and how the job will. be done. It also

includes part to be played by extension worker, part played by agencies and plans for measuring results.

7. Programme building is a continuous process: It is never finished. The situation changes through economic and social trends through actions of people, problems change, emphasis change and phases may be completed and new problems may arise and needs new solutions and new programmes

8. Programme building is a teaching process: The process of programme building itself an excellent teaching device. It teaches people to think, to reason, make decisions, and act through participation. It is time consuming but good investment

9. Programme is a coordinating process Programme planning process find out the most important problems and seeks agreement on definite objectives. It obtains cooperation of many people and coordinates the efforts of leaders, groups, agencies and promotes the best use of all resources

10. Programme planning provides opportunity for evaluation of results- All attempts at evaluating extension work are dependent on clear objectives and records of results in terms of which changes in the action of the people are shown.

STEPS FOR MAKING A PROGRAMME OR PROGRAMME DEVELOPMENT PROCESS

The five phases of the **J. Paul Leagans** concept of extension educational process can be broken up into the following nine specific steps in programme planning process.

FIGURE   PROGRAMME DEVELOPMENT PROCESS
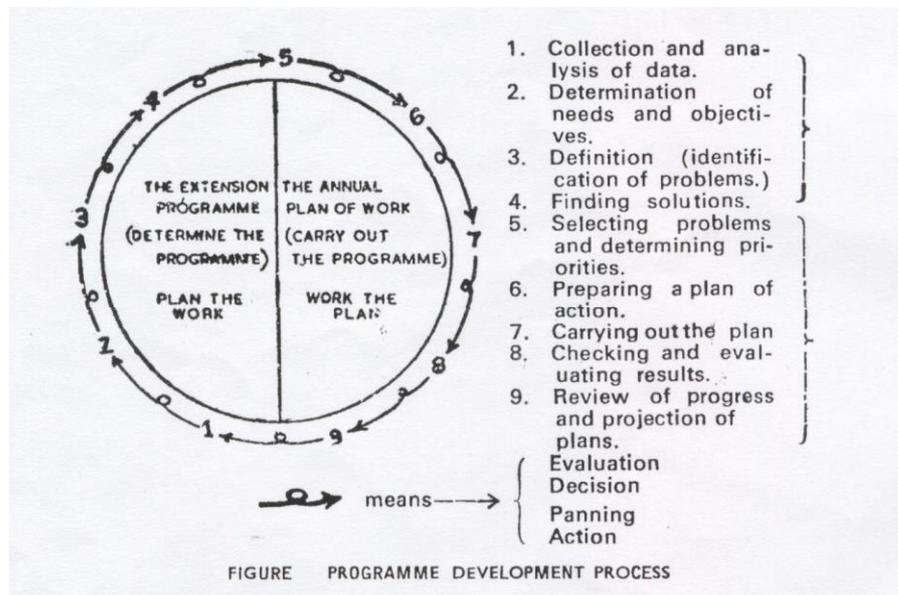
The first 4 steps constitute the *Extension Programme,* and the next 5 steps - *the Annual plan of work*

1. Collection and analysis of data: Good planning depends on the collection of adequate, reliable data about the situation. The facts must be carefully analyzed and interpreted through the joined efforts of technically trained staff and progressive village leaders. All extension workers must possess the basic farm and family information for preparing sound family, village and block plans which should include

a. Basic information about the village includes the data pertaining to population, total number of families, main occupations of the village, communication facilities, schooling facilities, medical facilities, drinking water facilities, etc.

b. Information about farm management and production programmes includes total cultivated area of the village, size of agricultural holdings, types of crops, soil'... types, disease and pest control, agricultural machinery, etc. It is necessary for increasing agricultural production in the village.

2. **Determination of objectives:** Effective rural development programmes must have clear and significant objectives before deciding the project to be undertaken. The basic objectives of the programme are to be determined by the villagers in consultation with extension personnel. The villagers should have the clear concept of the project by deciding on objectives. The involvement of various institutions and voluntary organizations should be secured. The objectives of the programme for family plans could be decided upon by the head or active members of the participating family and by Panchayats in case of objective to be undertaken on community or village basis. The objectives should specify behavioral changes of the people.

3. **Definition of problems:** The village activities should be classified properly before planning. This helps in execution of the programme. Problems can be classified into 3 categories as follows:

a. Problems solved by the villagers with their own resources like improving the yields by adopting improved practices, digging compost pits, organizing rural youth clubs, etc.

b. Problems that need community cooperation without involving much outside assistance like construction of village approach road or deepening of tank, etc. by volunteering efforts.

c. Problems that require outside assistance on account of high cost involved and the technical knowledge needed like purchase of plant protection equipment, construction of school building, etc.

In this way the internal and external resources can be utilized economically and quicker results obtained. It is also desirable to break up complex problems step by step in to simple problems

4. **Finding solutions to problems:** The extension workers should advise the villagers and guide them in finding the solutions to the problems. The solutions offered should be practicable, economical and should result in satisfaction and learning. District and state specialists should help the extension functionaries at the village and block level in doing this work.

5. **Selecting problems and determining priorities:** All the problems cannot be tackled simultaneously even though solutions are known for them. At this stage it is essential to set up programme committees at village and block levels to review the situation periodically for determining how much progress has been made on projects under way, which projects are completed and which new projects need to be started. Extension workers have to play a great role in this respect.

6. **Preparing a plan of action or Annual plan of work:** A plan of work is listing of activities by which objectives already decided upon are to be achieved. It includes the methods of executing a programme, timing and persons responsible for carrying out programme along with evaluating the progress. It is an important step to solve selected problems. It is essential to involve villagers in planning the programmes**.**

7. **Carrying out the plan:** The success of the programme depends on the method by which it is carried out. For successful implementation of any programme, it is desirable that advance planning is made at the first step towards its implementation. The activities to be carried out each month should be taken out. Proper arrangement for the supply of materials and training of workers should be made. All steps in carrying out the programme should be discussed with the villagers and local leaders, and consent should be obtained to see full cooperation, steps for assistances and direction should be clearly stated to avoid confusion in launching the programme.

8. Continuous checking and evaluation of results: Adequate records of each activity should be kept for future evaluation by extension staff, development committees and village institutions. Each future programme should be based on results of the previous one. Successful evaluation gives a correct direction to the programme. The evaluation of programme has to be done with the reference to the original objectives set. Systematic evaluation provide information about the effectiveness of various methods used and various steps taken for executing the programme.

9. **Review of progress and projection of plans:** At the end of each cycle of programme planning process as a periodical review of situation and reconsideration of plan for setting up revised objectives should be done in view of the changes in social and economic levels of people. Acceptable programmes may be expanded to the neighboring areas. Research should be conducted to find out the reasons of failure of the programmes. All developmental programmes are tools for doing more work that is effective.

Lecture 3: Extension systems in India: extension efforts in pre- independence and post-independence era

EXTENSION EFFORTS

Rural reconstruction implies renovation of the villages for the total wellbeing of the rural people. It is oriented to their social, economic and political development. Various individual groups, associations and parties have perceived the gigantic task of rural reconstruction in their own light. Prominent among them are leaders, planners, philanthropic bodies, missionary groups, welfare associations, governmental institutions and others. During British rule some selected social workers had started some programmes of rural development. The evolution of extension programme is described in two stages:

First: Pre-Independence Programmes   (1866 - 1947)

Second: Post-Independence Programmes (1947 -1952)

PRE-INDEPENDENCE PROGRAMS

During the pre-independence era, various attempts were made by the individual persons and private agencies. It was during this period that the Department of Agriculture came into being in June 187 under the then Government of India, and by 1882, agricultural departments in most of the provinces started functioning in skeleton form. Recognising the need for new and improved methods of cultivation based on agricultural research, the then Government of India also set up an Institute of Agricultural Research at Pusa in Bihar in 1905.

1. **Gurgaon Project (1920)**
- In Gurgaon district, this programme of village development was the first one to be run by the State.
- In 1920, **Mr. F.L. Brayne** had been appointed on the post of Deputy Commissioner in Gurgaon district and he began this project of rural upliftment in this district, which became famous as Gurgaon Project.
- Rural upliftment movement on a mass scale was started. 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 main objectives of this project were: (1) To increase crop production, (2) to control extra expenditure, (3) to improve the health, (4) to develop the feeling of women education, and (5) home development work

As the village guides were not technical men, very little permanent value was achieved in fact. Moreover, this project was also based upon the sentiments of F.L. Brayne and when he was transferred, gradually this programme also stopped.

2. **Srinikethan Experiment (1921)**
- It was founded by **Ravindra Nath Tagore**. Sri Niketan was one mile away from Shanti Niketan, in West Bengal state.
- This area was backward socially, economically and politically backward. The main aim of

this project was all round development of rural people.

- Shree Tagore thought that if some villages were developed, the other villages will get inspiration and the programme of village development will spread all over the country and thus the whole country will be developed.
- The Sriniketan programme covered broadly four general areas: agriculture, crafts and industries, village welfare and education. The agricultural activities were based on three phases- (i) experiment; (ii) training, and (iii) extension
- Extension activities were given much priority. A Demonstration Plot was created to impart training and education to all the farmers through real life situation. One or two agricultural workers from Sriniketan often used to go to the villages and farmers to supervise all activities

In spite of the success story of Sriniketan, Tagore himself acknowledged some of the difficulties of Sriniketan experiment. He conceded that the unlimited freedom which he had given the staff had resulted in a fragmented programme.

3. Marthandam Project (1928)
- 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 villages in Marthandam area were undeveloped economically and the economic condition of the native majority was poor. Here, people used to cultivate only paddy and coconut on some places.
- It was having a 3-field programme - development of spirit, mind and body. But later it evolved a fivefold programme-development of the physic, spirit, mind, economic and social aspects of life.
- From the demonstration centre at Marthandam, about hundred villages were covered through Y.M.C.A. centers.
- For this project , the extension secretary was appointed supervise the activities of the group.

The main shortcomings of the project were inadequate funds and governmental help. The religious bias of the institution was also a major hindrance in its activities.

4. Firka Development Programme (1946)
- The Firka Development Scheme launched by Madras Government in 1946 aimed at the attainment of the Gandhian ideal of "Village Swaraj" by bringing about not only educational, economic, sanitary and other developmental activities of villages but also by revitalising the spirit of the people and making them self-confident and self-reliant.
- The scheme, which aimed at attacking of the rural problems as a whole, as well as in parts, consisted of short term plans for the development of rural communications, water supply, formation of panchayats, organization of cooperatives and programmes for sanitation, and also 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 responsible for the successful working of the scheme in the district. Each Firka was divided into 5 to 10 groups of villages which were put in the charges of Gram Sewaks. Each Firka or Group of Firkas was provided with special staff like agricultural field man, administrative officers, Supervisors and minor irrigation oversees

POST-INDEPENDENCE PROGRAMS

1. Etawah Pilot Project (1948)
- Albert Mayer, an American Engineer, played the key role in the initiation and implementation of the project.
- The programme was based on the principle of self-help, democracy, integrated approach, felt needs of the people, rigorous planning and realistic targets, institutional approach, co-operation between governmental and non-governmental organizations, close co-ordination between the extension service and the supply agencies and the collaboration by technical and social scientists.
- Each village level worker looked after 4-5 villages. The project was supervised by a district planning officer assisted by four specialist officers and other supporting staff.
- Multipurpose village level extension worker concept was introduced in this project.
- Begun under the sponsorship of the provincial government of Uttar Pradesh in late 1948 with a unit of sixty-four villages, the project of Etawah finally became a prototype for Community Development Projects and National Extension Service blocks in thousands of villages every part of India

2. Nilokheri Experiment (1948)
- Shree S. K. Dey, was the founder of the Nilokheri Experiment, when nearly 7000 displaced persons from Pakistan and later integrated with the 100 surrounding villages into what came to be rural-cum-urban township. It was built round the vocational training centre, Nilokheri, in July 1948.
- Shri Dey began this project using 1100 acre of swampy land spreading in the midst of Karnal and Kurukshetra. Shri Dey went on to become the Union Minister of Community Development in 1965.
- The scheme was also known as "Mazdoor Manzil" because of its principle 'he who will not work, neither shall he eat'.
- Under this programme, the main activities were a Vocational Training Centre run on co-operative lines and the Colony had its own dairy, poultry, piggery, printing press, engineering workshops, tannery and bone-meal factory. People were given vocational training of their choice to run these Co-operative Enterprises. Rights for education and medical care for the sick were also guaranteed.

EXTENSION SYSTEMS IN INDIA

In Indian context, there are four major organizational streams devoted to extension work for Agriculture and rural development [According to Prasad and Choudary and Nayar [1987].

These are:

1. **The first line extension system, comprising ICAR institutes and State Agril. Universities**
   The ICAR [1929] / SAU front-line extension system plays a catalytic and supportive role. It develops extension methodology, refines and transfers front-line technologies, and provides feedback to scientists.
   National Demonstration (ND-1966), Operation Research Project (ORP-1972) Lab-to-land Programme (LLP-1979), Institute-Village Linkage Programme (IVLP-1995/96), Krishi Vigyan Kendras (KVKs, 1974)
   Extension system of Ministry of Agriculture and State departments
   The Directorate of Extension [GOI MOA] plans extension activities at national level and disseminates information through State level.
   National Institute of Agricultural Extension Management (MANAGE-1987), Extension Education Institutions (EEIs, 1962), State Agricultural Management and Extension Training Institute (SAMETI, 1965) at state level, Farmers Training Centre (FTC) at District level.

2. **Extension system of Ministry of rural development**
   It handles the administration of District Rural Development Agency (DRDA), and has three autonomous organizations under it. They are:

   - Council of Advancement of People's Action and Rural Technology (CAPART) [1986]
   - National Institute of Rural Development (NIRD-1964) / APARD [1954]

3. **Development work by NGOs /Private agencies**
   Many Non-Government Organizations (NGOs) also undertake extension activities as part of their development programmes. Some NGOs are also managing ICAR-supported KVKs Private input companies are involved only in the transfer of chemical (fertilizers, pesticides), mechanical and biological (hybrid seeds) technologies developed/produced by them. Public sector companies and seed corporations also undertake transfer of technology activities related to the sale of their products i.e., farm inputs. Commodity groups/boards also promote commodity specific extension activities.

EXTENSION SYSTEMS IN INDIA

The Indian Council of Agricultural Research (ICAR), an apex organization for co-ordinating agricultural research and education in the country, has a limited role in extension.

It has launched a few programmes popularly known as **Transfer of Technology (ToT) Projects or First-Line Extension Projects**

The major goal behind launching these programmes is to promptly demonstrate latest agricultural technologies in the farmers field and gain first hand feedback through direct interaction between scientists and farmers.

There were four main transfer of technology projects of ICAR, namely

 1. All India Coordinated Project on National demonstrations (AICPND)

 2. Operational Research Project (ORP)

 3. Lab to Land project (LLP)

 4. Krishi Vignan Kendra (KVK)

 All the projects were of mobile type, except the KVKs which are vocational training institutions.

All India Coordinated Project on National Demonstrations (AICPND)

A national programme of demonstrations known as National Demonstrations (ND) on major crops was launched in 1964.

The rationale behind the scheme was that unless the scientists could demonstrate what they advocate, their advice might not be accepted by the farmers.

It differed from other projects/demonstrations in the following aspects

1. There was a specific yield target and there was no separate control plot near the demonstrations.

2. The area of the demonstration plot was about one hectare, so that the feasibility of raising a good crop could be strikingly and unquestionably demonstrated.

3. The farmers in whose plots the demonstrations were the actual cultivators with small holding, so that the high yields obtained were not attributed to the effects of affluence.

4. The agricultural scientist conducted these demonstrations in association with local extension agencies/ workers.

The organization of field days, fields visits and training for the farmers and field extension workers were considered important for rapid spread of technologies.

SPECIFIC OBJECTIVES OF NATIONAL DEMONSTRATIONS

1. To demonstrate convincingly to the farmers and extension personnel the genetic production potentialities of major crops per unit time and encourage them to adopt.

2. To fully exploit these demonstrations for the purpose of training farmers and field extension functionaries in improved cultivation practices.

3. To provide the research workers an opportunity to get first-hand knowledge of the problems being faced by the farmers.

4. To determine the income and employment generation potentialities of the crops under demonstration.

5. To influence the extension systems of the state departments of agriculture, NGOs etc in the country **by demonstrating the yield gaps.**

OPERATIONAL RESEARCH PROJECT (ORP)

1. It was launched in 1974-75.

2. It aimed at disseminating the proven technology in a discipline or area among farmers on a watershed basis.

3. The conceptual framework of ORP was that it was primarily devoted to demonstrating the impact of new technologies on a large scale involving a whole village or a cluster of villages at a time.

4. The ORPs considered two kinds of problems:

A. The common agricultural problems affecting the farming community requiring group or community action.

B. Total resources development of watershed area.

LAB TO LAND PROGRAMME (LLP)

The Lab to Land programme was launched by ICAR in 1979 as a part of its golden jubilee celebration. The overall objective of the programme was to improve the economic condition of the small and marginal farmers and landless agricultural labourers, particularly SC`s and ST`s by transfer of improved technologies developed by Universities, Research institutes, etc

The specific **objectives** of the Lab to Land programme are:

1. To study and understand the background and resources of the selected farmers and landless laborers.

2. To introduce low cost relevant agricultural and allied technologies on the farm plans.

3. To guide and help the farmers in adopting the improved technologies as per their farm plans.

4. Assist the farmers to develop feasible farm plans keeping in view the availability of technologies, needs and resources.

5. Organise training programme.

6. Make the farmers aware of financial agencies.

7. Develop functional relations and linkages with the scientist and institutions for future guidance.

8. Utilise this project as feedback mechanism.

KRISHI VIGNAN KENDRA (FARM SCIENCE CENTRE)

It was in 1973 the ICAR appointed a committee headed by **Dr. Mohan Singh Mehta** for formulating the institutional design for vocational training in agriculture. **The first KVK was established by the ICAR in Pondicherry during 1974 under TNAU.** It is designed to impart need- based and skill oriented vocational training to the practicing farmers, in-service field level extension workers.

The basic concepts of KVK

1. The centre will impart learning through work experience and hence will be concerned with technical literacy.

2. The centre will impart training only to those extension agents who are already employed or to practicing farmers.

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

The three fundamental principles are:

1. Agriculture production as the prime goal.

2. Work-experience as the main method of imparting training.

3. Priority to weaker sections of the society.

Objectives of KVK:

The main objective of KVK is to provide a strong training support for bringing about production breakthrough in agriculture.

The specific objectives are:

1. Plan and conduct survey of the operational area to prepare the resource inventory with special reference to identify the training needs of the farming community.

2. Compile all the recommendations for the follow up of extension programmes.

3. Plan and conduct production oriented, need based short and long duration training courses both on the campus as well as in the villages for various target groups with priority on the weaker and poorer sections.

4. Organise farm science clubs both in rural schools and in villages to inculcate interest in the younger generations about agriculture and allied activities.

5. Develop and maintain campus farms and demonstration units on scientific lines.

6. Provide practical training facilities to the teachers and the students of higher secondary schools on vocational agriculture.

7. Impart some general education to the rural illiterates and school drop outs in order to make them good farmers and also better citizens.

8. Provide training facilities in home making and nutrition education for rural community and important areas like home crafts, cottage industries, etc.

With the effect from 1ˢᵗ April 1992, all First-Line Transfer of Technology projects of the ICAR *viz.*, ND, ORP and LLP have been integrated with the KVKs.

Lecture 4: T&V System, IADP, IAAP, HYVP, KVK, IVLP, etc

TRAINING AND VISIT SYSTEM (T&V System) -(REORGANIZED EXTENSION SYSTEM)

A former farmer from the Negev in Israel who was a World Bank staff member for two decades, Daniel Benor initiated the Training and Visit (T&V) system that was introduced in more than 40 World Bank member countries, including 30 countries in Africa. Wherever it has been implemented it was successful. T&V provides a sound institutional framework for reaching large numbers of farmers, and it has many elements that can be adapted to be effective in a range of different environments. T&V is based on a set of managerial and organizational principles that are broadly applicable and constitute an extremely powerful managerial tool. It is also known as Benor system, as Daniel Benor was instrumental in introducing this innovation in agricultural extension.

A centrally sponsored scheme "strengthening and reorganization of Agricultural administration in the states" has been approved by Government of India for implementation in the 6th plan period. This scheme was based on Training and Visit system.

This reorganized system of agricultural extension (T&V) was evolved on the basis of experiences gained in the pilot project set up with the assistance of World Bank in canal areas & Chambal Command areas in Rajasthan and Madhya Pradesh and Command areas in Andhra Pradesh, in *Kharif*, 1974. Since this methodology yielded encouraging results, reorganized agricultural extension system based on this approach was introduced in other States by 1985 with the World Bank assistance.

The purpose of T & V system of agricultural extension was to build a professional extension service that will be capable of assisting farmers to raise production and increase their income. The main objective of this system was to remove short comings in the existing agricultural extension system. This system has given the country a new vision bringing farm scientists and field extension functionaries closer with sole intension of improving production and income of farmers.

The basic spirit behind T & V system is that any land, even though it may not have produced a satisfactory crop in the past, can be made to yield an optimum crop according to its capacity within the crop season of 4-5 months only, provided the farmer is advised what to do on his farm step by step, as per the stage of crop growth, every week or fortnight.

SAILENT FEATURES OF T & V SYSTEM

The key features of the T & V system according to Benor and Baxter (1984) are as follows: **1. Professionalism:** The extension staff must keep in close touch with relevant scientific developments and research in order to formulate specific recommendations that will be useful to farmers in all kinds of resource situations. This can be achieved only if each extension worker is fully and continuously trained to handle his particular responsibilities in a professional manner

2. Single line of command: the extension service must be under a single line of technical and administrative command within the Department of Agriculture. Support is required from teaching and research institutions, input supply and other agricultural support organizations and local government bodies but all extension workers should be responsible administratively and technically to a unit within only one department.

3. Staff is not responsible for the supply of inputs, data collection, distribution of subsidies, processing of loans, or any other activity not directly related to extension. It is assumed that the effective span of control for supervision or guidance is about eight. Hence, no extension officer should have more than eight staff or offices, which he must personally supervise and for whose performance he is specifically accountable.

4. Time bound work: Messages and skills are taught to farmers in a regular timely fashion, so that they will make best use of the resources at their command. The VEW (Village Extension Worker) must visit his farmers regularly on a fixed day, usually once each fortnight. Recommendations for a specific area and for particular farming conditions for every two fortnight periods (1 month) are discussed by Subject matter Specialists (SMSs) at regular monthly workshops. The recommendations are then presented to VEWs and AEOs (Agricultural Extension Officers) at the next two fortnightly training sessions. Any break in this time bound system makes extension in effective.

5. Field and Farmer orientation: The contact of extension staff must be on a regular 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 required, both to teach and discuss about the specific production recommendations required by farmers for the coming fortnight and to upgrade their professional skills.

7. Linkages with research: Effective extension depends on close linkages with research. Linkages are two way. Problems faced by farmers that cannot be resolved by extension workers

are passed on to researchers for either an immediate solution or investigation. During seasonal and monthly workshops and joint field trips, extension and research staff formulates production recommendations that will be adopted by extension workers as necessary, to make best use of the specific local environmental and actual farmers resources.

Objectives

i) Coordinate research, training and extension activities effectively.

ii) To make research more effective by catering to the local needs and situation.

iii) To evolve an intensive training programme on a systematic basis for extension workers and farmers and to ensure effective supervision and technical support to VEWs/AEOs.

Transfer of know-how from Subject Matter Specialist (SMS) to the farmer was ensured in two stages through

a. **Training:** For transfer of know-how from subject matter specialists to extension worker and

b. **Visits:** For transfer of know-how obtained at the training from extension worker to the farmer.

Organization structure of the T & V system

An agriculture extension officer (AEO) guides, trains and supervises about six to eight village extension workers. Six to eight AEOS in turn were guided and supervised by Sub Divisional Extension Officer (SDEO). The SDEOs were supported by a team of SMSs. Four to eight SDEOs were supervised by a District Extension Officer (DEO) who was also supported by SMSs.

Level	Extension Personnel	Coverage
Field level	Village Extension worker (VLW)	800-1200 farm families
Block level	Agriculture Extension officer (AEO)	8 VLWs
Sub-divisional level	SDEO	6-8 AEOS
District level	DEO	4-8 SDEOs in districts

Coverage of various extension personnel

All the families under a VLWs jurisdiction were divided into eight groups of equal size. From each group, the VLW in consultation with village leader selected about 10% of the **contact farmers** on whom he concentrates his efforts. The VLW visits each of the eight groups for a full day each fortnight. An alternative was to visit two groups on a day. In such case he visits each group for one half day only but once every week. Each week the VLW devotes four days to visit so that he covers his entire circle of eight groups in a week, of a fortnight. One of the two remaining

working days in each week was devoted to in service training which was crucial to this programme and the other day for unscheduled visit.

One of the training sessions each fortnight was conducted by the team of SMSs responsible for the area. The session was scheduled so that the VLWs were trained for full day in a group of 30-40. The other weekly training session during the fortnight was conducted by the AEO who was the immediate supervisor of the VLW for the group of VLW under his charge.

The AEO spends two days in training session for VLW and eight days in field supervision and assisting them. The SDEOs supervises VLWs under his jurisdiction and was the overall in-charge of the extension programme. The SMS devotes one-third of their time to VLW training session, one third to field visits and one third of their time in visiting research stations and conducting some research. In a fortnight, a team of SMS spends four days in VLW and AEO training session.

Achievements - The T & V system resulted in:

i. Increase in cultivated area under high yielding varieties.

ii. Increase in the cropping intensity.

iii. Increase in employment of family labour.

iv. Raise in marginal value of productivity of all inputs and

v. Acceleration in the adoption of recommended practices.

Weaknesses

i. Limited use of mass media hindering effectiveness, especially in reaching women and other small scale farmers.

ii. Limited or no clientele involvement in programme development.

iii. Recurrent cost problems that became serious when donor funding terminates; and

iv. Weak links with research, plus lack of adequate SMS capacity, frequently resulting in lack of appropriate technology

Extension/ Agriculture Development Programme Launched by ICAR/ Govt. Of India- IADP, IAAP , HYVP, KVK, IVLP, etc

Since independence, India passed through acute food shortage, every year food grains were imported from outside, and to stop these imports and to make country self-sufficient, the need for increasing agricultural production was urgently felt.

INTENSIVE AGRICULTURAL DISTRICT PROGRAMME (IADP)

In 1959, A team of Ford Foundation agricultural experts after visiting various states in India, recommended intensified development efforts in selected areas with assured irrigation so that rapid increase in production could be made. The government accepted the idea and started IADP in July, 1960 in seven selected districts of various states (including West Godavari of Andhra Pradesh) during 1st phase and twenty one districts during second phase.

Criteria for selection of districts:

1. Districts with high potentially for increasing the yield in short time i.e. with assured irrigation facilities and minimum natural hazards

2. Districts with well-developed Panchayats and Cooperatives IADP is popularly known as **PACKAGE PROGRAMME** because of the collective and simultaneous application of all improved package of practices namely improved seed, irrigation, fertilizers, plant protection, implements, storage facilities, marketing facilities, credit, etc. The distinctive features of **IADP were as follows:**

 i) To provide factors of production simultaneously, timely and adequately,

ii) Essential inputs like fertilizer, etc. to be made available 100 percent of the requirement, iii) Credit to be provided to any farmer who joins the programme and has the potential to get increased yield.

 iv) More agricultural and cooperative staff to be posted.

v) Provision of composite demonstrations instead of single factor demonstrations.

 vi) Periodical training of staff.

vii) Analysis and evaluation.

Weaknesses

i. Educational approach to reach the cultivators was lacking,

ii. Poor trainings to staff.

iii. Staff were not clear about the methods to reach the cultivators,

iv) Posting of staff was not adequate and timely,

v) Workshop, seed testing and soil testing laboratories were not functioning to the required level and

vi)Transport and land development programmes were not progressing satisfactorily. Achievements In spite of these limitations IADP created a new dynamism in the farming community, greatly enhanced the use of technical inputs and also contributed to the growth of marketing and storage facilities as well as supporting services.

Other achievements are

1. Technical assistance was given to farmers in preparing production plans.

2. The cultivators were provided simultaneously with all supplies and services at right time and in adequate quantities through cooperatives

3. Credit was given to all who had their production plans and participated in the programme 4. Marketing and storage facilities were developed with in bullock cart distance

5. Covered all the important cash crops grown in the districts although emphasis was laid on the increase of food grain crops

INTENSIVE AGRICULTURAL AREA PROGRAMME (IAAP) (1964)

The favourable experiences with IADP had led to the consideration of the possibilities of extending the concept of IADP to other promising districts in India. The Agricultural Production Board (1964) agreed with the observations of *Mid Term Appraisal* of third five-year plan and recommended Intensive Agricultural Area Programme for *20* to *25* percent of the cultivated area of the country. Thus, Intensive Agricultural Area Programme was started in *114* districts in *March, 1964* and later it was extended to *150* districts

Criteria for selection of districts

1. The IAAP was taken up in areas having *assured irrigation*
2. Selection of districts and blocks were made on the basis of predominant crops (entire crop economy of the area should be kept in view)

3. Area selected based on the use of various intensive and coordinated aids for production (infrastructure facilities)

The staffing pattern of these IAAP districts was *less intensive* than in the IADP districts. However, the mode of operation was similar. In general, the VLWs were increased from 10 per block to 15 or 20 per block, from one to two AEOs and districts staff from 2 to 3 Subject Matter Specialists.

Achievements of IAAP:

1. Achieved the increased production by exploiting the land resources

2. Package approach was covered in 1410 community blocks spread over to 114 districts in India

3. Increased production in 20-25 per cent of the cultivated area was achieved

4. Effective coordination between officials and non-officials was achieved

5. Multiplication of improved seed and its distribution to all cultivable land

6. Minor irrigation was undertaken in the villages, both through community participation and on an individual basis.

HIGH YIELDING VARIETY PROGRAMME (HYVP)

HIGH YIELDING VARIETY PROGRAMME (HYVP) was launched in 1966, which helped the country in attaining self-sufficiency in food. The technological development did not remain confined to the introduction of high yielding crop varieties alone. These were combined with the application of high analysis and balanced fertilizer, irrigation, plant protection, improved implements, etc. which made a **'Green Revolution'** possible in the country.

- Agricultural scientists found successful in evolving new high yielding varieties in some cereals particularly in wheat, rice & maize, Punjab, Haryana & Western parts of UP were initially selected for this programme.

- The pervasive influence of high yielding technology spread to other area as of farm production such as animal production, fishery, sericulture, social forestry etc. The high yielding technologies in these production enterprises also have some common characteristics such as shorter gestation period, good response with better management; higher return fan terms of yield and income, and higher investment in comparison to traditional technologies.

- High yielding technologies by themselves tend to be scale neutral i.e. farmers irrespective of the size of their holding can derive economic benefit from them provided they have access to the needed inputs. However, high yielding technologies are not resource neutral. In other words more inputs are required for higher output.

Objectives

i) To assess the spread of the various high yielding varieties in different parts of the country and also determine the extent of such spread;

ii) To ascertain the reactions, attitudes of cultivators/participating cultivators; and

iii) To study the problems of implementation of the programme at different level of administration such as States, district, block and village.

KRISHI VIGYAN KENDRA (KVK) - (FARM SCIENCE CENTRE)

The first KVK was established in 1974 at Pondicherry under Tamil Nadu Agricultural University. The Krishi Vigyan Kendra (KVK) 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 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 laborers. The objective is to gradually cover the entire country with one KVK in each district, priority being given to the backward areas.

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. Organizing **Vocational Trainings** in agriculture and allied areas

3. Conducting **Frontline demonstrations** (FLDs) on major cereal, oilseeds, pulses and other important crops

4. Organizing **in-service 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 established and now two KVKs are also established in certain large districts. Though KVKS are sponsored by the ICAR they are working under different administrative controls *viz.,* SAUs, NGOs and ICAR. In Andhra Pradesh, at present there are 13

KVKs are working under the control of ANGRAU. Three KVKs are under the control of Dr.YSR Horticultural University and one is under the administrative control of S.V Veterinary University.

INSTITUTIONAL VILLAGE LINKAGE PROGRAMME (IVLP) (1995-1996)

It is an innovative programme initiated by the Indian council of Agricultural Research (ICAR) 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 form 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 scientist, 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 significance of client oriented received higher attention among had policy makers, which led to the concept, Technology Assessment and Refinement through IVLP. 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 technologies for removal of drudgery increased efficiency and higher income of farm women.

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 meso and mega level.

NATIONAL AGRICULTURAL TECHNOLOGY PROJECT (NATP)

- This project was launched by the ICAR 30th June, 1998 with a support of World Bank to strengthen & complement the existing resources
- NATP was the world biggest World Bank assisted agriculture project
- Aimed to improve the dissemination of location specific & sustainability enhancing technologies
- Decentralize technical and decision making authority to the district level.
- Pilot testing new institutional arrangements for technology dissemination at the district level and below through establishment of district Agricultural Technology Management Agency (ATMA)
- Bottom up planning procedures for setting the Research Extension agendas
  NATP has three major components:
  1. Development of ICAR organization & Management system.
  2. Support of Agro-Ecosystem Research
  3. Innovations of Technology Dissemination

1. **Development of the ICAR organizations and Management System:** Under this component, following activities will be supported :

- Strengthening of the ICAR Head Quarters, including the National Agricultural Science Centre (NASC)

- Directorate of Information and Publications of Agriculture (DIPA) (d) institutionalization of priority-setting mechanism, monitoring and evaluation (PM & E)

- Information System Development (ISD), covering Agriculture Research Information Service (ARIS) and Library Information and Networking. Funding would be provided to continue the present reforms in ICAR organizations and management processes including support for the review of selected institutions aimed to enhance their management capabilities, consultancies and workshops to plan further evaluation of ICAR itself.

2. Support for Agro-ecosystems Research: The Project Implementation Unit (PIU) has been set up at the Lal Bahadur Shastri Bhavan, ICAR, Pusa, New Delhi. Funding location specific interdisciplinary research programmes. It would promote entry of other institutions such as general universities, foundations, NGOs, farmers associations, the corporate sector into research. HRD support for agro ecosystems research, emphasizing enhanced linkages with national and international centers of research.

3. Innovations in Technology Dissemination: Technology Dissemination Unit (TDC) has been established in the Directorate of Extension, Department of Agriculture and Cooperation (DAC). The ITD proposals received from the DAC and the Division of Extension, ICAR are being processed by the TDC and put up for the approval by the Technology Dissemination and Management Committee (TDC). The DAC component involved mainly setting of the Agricultural Technology Management Agencies (ATMAs). Selected State Agriculture Management and Extension Training Institutes (SAMETIs) are strengthened to train farmers and extension workers.

The purpose of this component is to test new methodologies in technology transfer, new organizational arrangements and operational procedures.

- One goal is to decentralize decision making to the district level through the creation of Agricultural Technology Management Agency (ATMA), as a registered society.
- A second goal is to increase farmer input into programme planning and resource allocation especially at the block level and increase accountability to stakeholders.
- A third goal is to increase programme coordination and integration. Funds were provided to 24 pilot districts in agro-ecological zones to create Agriculture Technology Management Agency which will bring together researchers, extensionists, farmers and other stakeholders (including NGOs and the Corporate sector)

To operationalize, it proposed following interventions:

1. Agricultural Technology Information Centre (ATIC)
2. Re-mandating selected Zonal Research Stations to develop location specific technologies.
3. Strengthening Zonal Coordination Units (ZCUs) and Directorate of Extension (DoEs) of SAUs.

AGRICULTURAL TECHNOLOGY MANAGEMENT AGENCY (ATMA)

A Centrally sponsored scheme 'Support to State Extension Programmes for Extension Reforms' was launched by the ICAR in 1999. This scheme is a major initiative towards revitalizing agricultural extension in the States to make the extension system decentralized and demand driven. The scheme is implemented through autonomous district level institutions established in the States in the form of Agricultural Technology Management Agency (ATMA). **ATMA is managed by Project Director at district level.**

Goals of ATMA

1. Decentralize decision-making to the district level.

2. Increase farmer input into programme planning and resource allocation, especially at the block level.

3. Increase programme coordination and integration, and to increase accountability to stakeholders.

As a registered society, it would be able to receive and spend project funds, entering into contracts and agreements with various agencies.

ATMA networking

It would have linkage with all the line departments, research organizations, NGOs, and agencies associated with agricultural development in the district. Research and Extension Units within the project districts such as ZRS or substations, KVKs and the key line departments of Agriculture, Animal Husbandry, Horticulture and Fisheries, etc. would become constituent members of ATMA.

ATMA Governing Board: The ATMA Governing Board is a policy making body and provides guidance as well as review the progress and functioning of the ATMA.

The composition of the ATMA Governing Board is as follows.

Chairman: District Collector

Vice-Chairman: Chief Executive Officer (CEO)/Chief Development Officer (CDO)

Members: Joint Director/Deputy Director (Agriculture)

A representative from ZRS/KVK, One farmer representative, One livestock producer, One horticulture farmer, Representative of Women Farmers Interest Group, One SC/ST farmer representative, A representative of NGO, Lead Bank Officer of the district, A representative of District Industrial Centre

Note: Sub-divisional Agricultural Officers are nominated as members. On the basis of local requirement other members may be nominated.

Key functions of ATMA Governing Body

    1**.** Review and approve Strategic Research and Extension Plan (SREP) and annual work plans that are prepared and submitted by the participating units.

    2. Receive and review annual reports presented by the participating units, providing feedback and direction to them as needed, for various research and extension activities being carried out within the district.

    3. Receive and allocate project funds to carry out priority research, extension and related activities within the district.

ATMA Management Committee

The Management Committee would be responsible for planning and executing the day-to-day activities of ATMA.

The ATMA management committee shall be constituted as follows.

Chairman: Project Director of ATMA

Members: District Heads of Departments of Agriculture, Horticulture, Animal Husbandry, Fisheries, Sericulture, other appropriate line departments important for a district. Heads KVK, ZRS, Sub divisional Agricultural Officers, One representative of NGO in-charge of farmers organization, Two representative of farmers organizations (one year rotation basis)

Key functions of the Management Committee

1. Carryout Participatory Rural Appraisals (PRAs) to identify the problems and constraints faced by different socio-economic groups and farmers within the district.

2. Prepare an integrated, Strategic Research and Extension Plan (SREP) from the district.

3. Prepare annual work plans that would be submitted to the ATMA Governing Board for review, possible modification and approval.

Linkage mechanism: ATMA has a sound Research-Extension-Farmer (REF) linkage mechanism. This approach of transfer of technology envisages both top-down and bottom-up linkages.

Organizational Structure of Agricultural Technology Management Agency (ATMA)
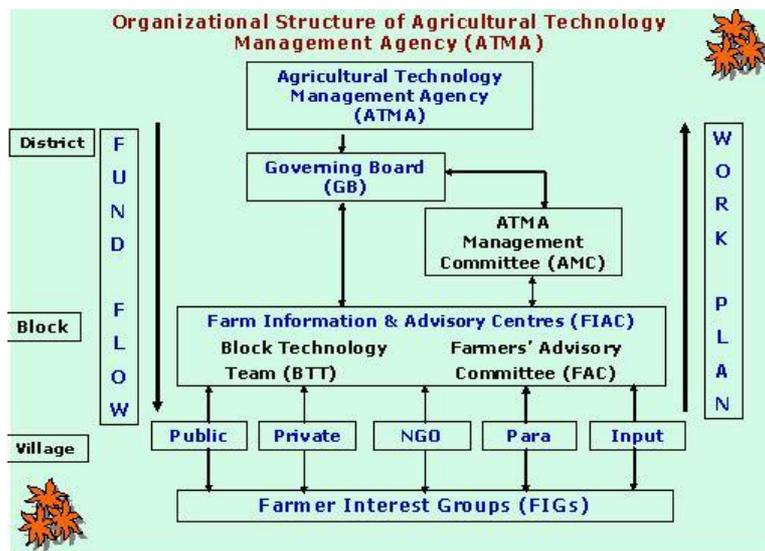
At the block level, Farm Information and Advisory Centre (FIAC) would be created. It would be the planning and operational arm of ATMA.

Advantages of ATMA

1. ATMA is more effective in technology generation as it encourages location-specific solutions, keeping the resources of the farmers in mind.

2. As ATMA ensures a greater coordination among sister departments, it helps in better management of farms by the farm families.

3. Participation is the basic principle of ATMA. Involvement of women in both ATMA Governing Board and Management Committee would bring about women empowerment.

4. ATMA seeks a greater linkage with research and extension.

5. ATMA provides a single window extension system by creating FIAC at the block level. Farmer can get any advice and suggestions from there only.

6. ATMA has an effective feedback mechanism.

STRATEGIC RESEARCH AND EXTENSION PLAN

ATMA is mandated to develop a demand driven, situation specific, multi-actor oriented **Strategic Research and Extension Plan (SREP)** to accelerate agriculture development in the district. **The SREP is the basic document** which not only decides the development activities that need to be carried out but also in which manner and by whom it has to be done. ATMA of each district is required to develop a SREP by involving all stake holders.

- Therefore, in formulating a SREP, the following guiding principles should be kept in view. Identify and spread important farming system innovations or success stories that may intensify or diversify existing systems and thereby, increase farm household income.
- On-farm collaborative technology development, testing and refinement to address serious technological gaps in the existing farming systems.
- Promote appropriate natural resource management (NRM) plan for building and maintaining the sustainable production systems within each AES.

AGRICULTURAL TECHNOLOGY INFORMATION CENTRE (ATIC)

The Agricultural Technology Information Centres (ATICs) are established to provide greater coordination and intensive interaction between the researchers and technology users beyond individual units of research institutions in contributing towards the dissemination of information. Each ATIC will serve as a "**Single Window System**" with an objective to help Farmers and other stake holders such as Farmer-Entrepreneurs, Extension workers, Development agencies, Non-Government Agencies (NGOs) and private sector organizations to provide solutions to their location - specific problems in agriculture and make available all the technological information along with technology inputs and products for testing and use by them. The ATICs need to be demand driven and well integrated with research and financially sustainable, lay greater emphasis on location-specific and system based sustainable technologies. ATIC, ANGRAU started functioning from 1-1-1999 at Rajendranagar. **At present, ATIC of ANGRAU is established at Agricultural College, Bapatla.**

Specifically, the ATICs provide

- Diagnostic services for soil testing, plant and livestock health,
- Supply research products such as seeds, planting materials, livestock breeds, poultry strains, fish seed, processed products etc., emerging from an institution for testing and adaptation by various clientele.
- Disseminate information through published literature, audio - visual aids and electronic media, provide an opportunity to institutions for resource generation through sale of their technologies and support the district level Agricultural Technology Management Agencies(ATMAs) in technology dissemination wherever they are available.

One of the key indicators of success of an ATIC will be number of farmers and farmer groups visiting the ATIC, the sale of materials, the number of farmers trained per year and the kind of technological feedback received, documented and passed on to the research-extension systems.

(b) National Agricultural Innovation Project (NAIP)

- Since 2006-07, ICAR implemented National Agricultural Innovation Project (NAIP), in a consortium mode.
- The overall objective of NAIP was to facilitate the accelerated and sustainable transformation of Indian agriculture in support of poverty alleviation and income generation through collaborative development and application of agricultural innovations by public organizations in partnership with farmers' groups, the private sector and other stakeholders.

Objectives of NAIP

➢ Strengthens the Indian Council of Agricultural Research (ICAR) as the catalysing agent for managing change in the Indian National Agricultural Research System (NARS)

➢ Funds research on production-to-consumption systems.

➢ Funds research on sustainable rural livelihood security

➢ Supports basic and strategic research in the frontier areas of agricultural science features

Lecture 5: Rural development- meaning, definition, concept, various rural development programs launched by Govt. of India

RURAL DEVELOPMENT   "*India lives in its villages" - Mahatma Gandhi*

MEANING AND DEFINITIONS

Rural: According to International Encyclopaedia of Social Sciences, the term 'rural' refers to the population living in the area of low density and small settlements.

Development: "The term development, according to Lale (1975) – is a process of improving standards of the masses of the low income population residing in rural areas making the process of rural development self-sustaining". Rural Development is a strategy to improve the economic and social life of a specific group of people- the rural poor, including small and marginal farmers, tenants and landless. Rural Development is an improvement in the living standards of the masses of low income population residing in rural areas and making the process self-sustaining The term rural development combines two words - Rural and Development.

The term Rural and Development is used in different ways:

- As a Concept – Development of Rural areas
- As a phenomenon- Interaction between institutional factors
- As a Strategy- Approach to bring positive change in rural life

Ultimate Objective of rural development is - Improving the quality of life of rural poor and the rural weak.

CONCEPTS OF RURAL DEVELOPMENT

According to World Bank (1975) – the rural development in general terms, **is a strategy** designed to improve economic and social life of people in a rural settlement and in particular, it focuses attention on the rural poor comprising the small and marginal farmers, tenants, and landless labourers.

Rural development is the **dynamic process** of development of the rural people through various programmes and projects so that they can become self-reliant citizens of the country. The work is

done by involving various agencies and organizations, and above all, the local people themselves. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas. The group includes small scale farmers, tenants and the landless.

As a phenomenon, rural development is the end result of interaction between various physical, technological, economic, socio-cultural and institutional factors. motivate the people for adoption.

As a strategy, it is designed to improve the economic and social wellbeing of a specific group of people – the rural poor.

As a discipline, it is multidisciplinary in nature, representing an interaction of agricultural, social, behavioral, engineering and management sciences.

In the words of Robert Chambers (1983), 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 landless. Rural Development is a process of developing and utilizing natural and human resources, technologies, infrastructural facilities, institutions and organizations, and government policies and programmes to encourage and speed up economic growth in rural areas, to create jobs and to improve the quality of rural life towards self-sustenance.

OBJECTIVES OF RURAL DEVELOPMENT

1. Providing goods and services in terms of social and economic infrastructure

2. Increasing the income of every rural family on a self-sustaining basis

3. Creation of additional employment opportunities in rural areas.

4. It implies a broad-based reorganization and mobilization of the rural masses so as to enhance their capacity to cope effectively with the daily tasks of their lives and with changes consequent upon this.

5. Improvement of services or rural masses in the process.

6. Improvement of know-how, which is to be implemented to the rural people.

According to Singh (1999), the main objectives of rural development in all societies, irrespective of their economic, political and socio-cultural systems are:

- To make available and improve the distribution of life-sustaining goods, such as food, clothes, shelter, health and security;

- To raise per capita purchasing power and improve its distribution by providing better education, productive and remunerative jobs and cultural amenities; and

- To expand the range of economic and social choices to individuals by freeing them from servitude and dependence.

IMPORTANCE OF RURAL DEVELOPMENT

✹ Social significance
✹ Innumerable rural problems
✹ Social change
✹ Best utilization of resources
✹ Infrastructural facilities Economic significance
✹ National Income
✹ Employment and Source of livelihood
✹ Fuel and fodder
✹ Industrial Development
✹ Internal Trade and Transport
✹ International trade
✹ International ranking
✹ Capital formation and Investment Political Significance: Political stability

Problems in Rural Development in India

1. **Illiteracy:**
   Many people in villages cannot read or write. So, it becomes difficult to teach them through books or printed materials. Extension workers need to use simple methods like demonstrations or personal visits.
2. **Poor Communication Facilities:**
   Many rural areas do not have proper roads, internet, newspapers, or TV connections. Because of this, information about new technologies and government schemes does not reach farmers easily.

3. **Lack of Funds and Staff:**
   Government programmes often do not have enough money or trained staff. As a result, farmers do not get proper training or regular guidance.

4. **Traditional Thinking:**
   Rural people usually follow old farming methods. They do not want to take risks by trying new ideas unless they see success in others' fields.

5. **Lack of Good Leaders:**
   Because of illiteracy and lack of confidence, strong and capable local leaders are few in number. Without good leadership, rural development work becomes slow.

6. **Shortage of Skilled Workers:**
   Teaching farmers about new methods needs skilled and trained extension workers. Training and employing such people costs a lot of money.

7. **Different Needs of People:**
   Every village and farmer has different problems and needs. One plan may not work for all. This makes rural development work more difficult.

8. **Organizational Problems:**
   Many government departments and organizations do not work together properly. Delays, paperwork, and lack of coordination affect the progress of projects.

9. **Unclear Goals:**
   Some organizations do not have clear aims or plans. Because of this, their work becomes confusing and less effective.

Rural Development Programmes in India: IRDP/SGSY/NRLM

Integrated Rural Development Programme (IRDP) was launched by the Government of India during the financial year of 1978 and implemented during 1979. It is important programme for poverty alleviation and rural development. The program aims to provide underprivileged people with employment options and the opportunity to expand their skill sets to better their living situations. The program focuses on boosting access to basic services such as healthcare, education, clean water, and economic opportunities for rural populations.

Objectives of IRDP:

1. To help families who live below poverty line to enhance their state of living and to empower the poor by helping them to develop at every level.

2. To provide productive assets and inputs to its target groups.

3. To provide financial assistance to these families in the form of government subsidies as well as loans or credit from financial institutions

Limitations of IRDP:

1. Insufficient resources were provided.

2. Poor quality of assets were provided to beneficiaries.

3. Insufficient follow-up of beneficiaries.

4. Lack of training opportunities for small farmers.

The **Integrated Rural Development Programme (IRDP)** was merged with the **Swarnajayanti Gram Swarozgar Yojana (SGSY)** in 1999 as part of a broader effort by the Indian government to streamline and improve rural development and poverty alleviation programs. There were several key reasons for this merger, primarily related to addressing the limitations of the IRDP and improving the effectiveness of poverty alleviation efforts.

The Swarnajayanti Gram Swarojgar Yojana (SGSY) was launched in April 1st 1999 by Ministry of Rural Development to assist the poor families (Swarozgaries) living below the poverty line in rural areas for taking up self-employment. The scheme is funded by the Central Government. The scheme always emphasizes independence. This programme covers all aspects of self-employment including capacity building, infrastructure equipment, loans, insurance and marketing. The SGSY was designed to organize the rural poor into **Self-Help Groups (SHGs)** and provide them with training, credit, and marketing support to enable them to undertake productive and income-generating activities.

Objectives of SGSY:

1. **Promote self-employment** by organizing rural poor into Self-Help Groups (SHGs) for sustainable income generation.
2. **Capacity building and skill development** to equip beneficiaries with the skills needed for managing small businesses.
3. **Facilitate access to credit and subsidies** through banks to support entrepreneurship with financial assistance.
4. **Prioritize vulnerable groups**, ensuring at least 50% SC/ST, 40% women, and 3% persons with disabilities benefit.
5. **Provide market linkages and infrastructure** to support the sale of SHG products, ensuring long-term economic sustainability.

Limitations of SGSY: The Swarnajayanti Gram Swarozgar Yojana (SGSY), despite its positive objectives, faced several limitations in its implementation. Here are the key limitations:

1. **Inadequate Focus on Skill Development:** While SGSY aimed to provide skill training, in many cases, the training was insufficient or poorly aligned with local market needs, leading to limited success in income generation.

2. **Limited Access to Credit:** Many beneficiaries, especially from vulnerable sections, struggled to access the necessary credit from banks due to procedural delays, lack of proper documentation, or reluctance from banks to lend to the rural poor.
3. **Overemphasis on Group Formation**: The program prioritized forming Self-Help Groups (SHGs) but often neglected individual entrepreneurial initiatives. Some groups were formed only to meet targets, lacking genuine social and economic cohesion.
4. **Poor Infrastructure and Market Linkages:** In many areas, the necessary infrastructure and market linkages to sell SHG products were lacking, resulting in unsold goods and unsustainable enterprises.
5. **Regional Imbalance:** The success of SGSY varied widely across regions. States with better governance and administrative capacity saw better results, while poorer regions, where it was most needed, often experienced weak implementation and outcomes.

The Swarna Jayanti Swarozgar Yojna (SGSY) has been renamed as National Rural Livelihood Mission (NRLM) in 2013 to make the scheme more focused and time-bound and to alleviate poverty. NRLM was renamed as DAY-NRLM (Deendayal Antyodaya Yojana - National Rural Livelihoods Mission) w.e.f. March 29, 2016.

DAY-NRLM: Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) is the **flagship program** of the **Ministry of Rural Development (MoRD)** for promoting poverty reduction through building strong institutions for the poor, particularly women, and enabling these institutions to access a range of financial services and livelihoods.

DAY - NRLM adopts a demand-driven approach, enabling the States to formulate their own State-specific poverty reduction action plans. NRLM has set out with an agenda to cover 7 crore rural poor households, across 600 districts, 6000 blocks, 2.5 lakh Gram Panchayats and 6 lakh villages in the country through self-managed Self Help Groups (SHGs) and federated institutions and support them for livelihoods collectives in a period of 8-10 years. In addition, the poor would be facilitated to achieve increased access to their rights, entitlements, and public services, diversified risk, and better social indicators of empowerment.

Key benefits of the Scheme include:

1. One member (preferably a woman) from each rural poor household would be brought under the Self Help Group (SHG) network. Women SHG groups would have bank-linkage arrangements.
2. SHGs would be federated at the village level and higher levels to provide space, voice and resources and to reduce dependence on external agencies.
3. The Mission consists of four components, viz., (i) social mobilization, community institution, and capacity building; (ii) financial inclusion; (iii) livelihood promotion; and (iv) convergence.
4. The participatory social assessment would be organized to identify and rank all households according to vulnerability. The ranking would be with reference to the poorest

of the poor, single woman and woman-headed households, disabled, landless, and migrant labor and they would receive special focus.

5. Training and capacity building of the poor, particularly in relation to managing the institutions, livelihoods, credit absorption, and creditworthiness.

6. The Mission also supports the development of skills for rural youth and their placement, training, and self-employment through rural self-employment institutes (RSETIs), innovations, infrastructure creation, and market support.

7. Provision of Revolving Fund as support to SHGs to strengthen their institutional and financial management capacity and build a good credit history.

8. Provision of Community Investment Support Fund (CIF) in the intensive blocks to the SHGs through the Federations to advance loans and/or undertake common/collective socio-economic activities.

9. Introduction of financial inclusion model, loaning from banks, association and coordination with banking/financial institutions, and coverage from loss of life, health, etc.

10. Provision of Interest Subvention on loans availed by SHGs to cover the difference between the lending rate of the banks and 7%.

11. Convergence with various ministries and agencies dealing with poverty reduction of rural poor.

12. With highly decentralized planning; States will have liberty in developing their own action plan for poverty reduction.

13. NRLM to have suitable linkages at the district level with District Rural Development Agencies (DRDAs) and Panchayat Raj Institutions (PRIs).

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), launched in 2006 under the MGNREGA Act (2005), is a landmark rural development initiative that guarantees **at least 100 days of wage employment each year** to every rural household whose adult members are willing to do unskilled manual work.

Types of Works under MGNREGS

(i) The focus of the Scheme shall be on the following works in the order of priority:

(1) Water conservation and water harvesting.

(2) Drought proofing (including afforestation and tree plantation).

(3) Irrigation canals, including micro and minor irrigation works;

(4) Provision of irrigation facility to land owned by households belonging to the Scheduled Castes and Scheduled Tribes

(5) Renovation of traditional water bodies including desilting of tanks.

(6) Land development

(7) Flood control and protection works, including drainage in water-logged areas.

(8) Rural connectivity to provide all-weather access.

The funding pattern of MGNREGS is shared between the Central and State Governments:

- The Central Government bears 100% of the unskilled labour wages cost and 75% of material and administrative costs.
- The State Government bears the remaining 25% of material and administrative costs and pays the unemployment allowance, if due.

Achievements

- Provided employment to millions of rural households.
- Improved financial inclusion through direct wage payments into bank/post office accounts.
- Enhanced rural infrastructure and agricultural productivity.
- Promoted women empowerment through active participation.

Implemented mainly through Panchayati Raj Institutions (PRIs), the scheme has improved rural employment, infrastructure, and women's empowerment, though challenges like wage delays and administrative lapses remain. MGNREGS continues to be a key instrument for rural livelihood security and inclusive development in India.

Lecture 6: Community development- Meaning, concept, definition, principles, philosophy of C.D.

Guiding Principles of Community Development

1. Activities undertaken must correspond to the basic needs of the community, projects should be initiated in response to the expressed felt needs of the people.

2. Local improvements may be achieved through unrelated efforts in each substantive field; however, full and balanced community development requires concerted action and the establishment of multipurpose programmes.

3. Changed attitudes in people are as important as the material achievements of community projects during the initial stages of development.

4. Community development aims at increased and better participation of the people in community affairs, revitalization of existing forms of local government and transition towards effective local administration where it is not yet functioning.

5. The identification, encouragement and training of local leadership should be a basic objective in any programme.

6. Greater reliance on the participation of women and youth in community projects.

7. To be fully effective, self-help projects for communities require both intensive and extensive assistance by the Government.

8. Implementation of community development programme on a national scale requires adoption of consistent policies, specific administrative arrangements, recruitment and training of personnel, mobilization of local and national resources and organization of research, experimentation and evaluation.

9. The resources of Non-Governmental Organizations should be fully utilized in Community Development Programmes at the local, national and international level.

10. Economic and social progress at the local level necessitates parallel development on a wider national scale.

Objectives of Community Development Programme

The fundamental or basic objective of Community Development in India was the development of people.

It's broad objectives were:

i. economic development

ii. social justice and

iii. democratic growth.

Basic objectives:

i. The all-round development of the rural community.

ii. To develop the feeling of communitarian lifestyle among the rural people.

iii. To develop the feeling of responsibility, to create confidence, to create inspiration for working by self-decision among the rural people and establishing local leadership and institutions this can tackle the problems of that area.

Objectives

1. To increase the agricultural production

2. Community and integrated development

3. The extension of the new scientific knowledge

4. Development of small and medium irrigation projects

5. Development of co-operative organizations

6. Construction of roads

7. To increase the adult education and primary education

8. Facility for entertainment

9. Development and construction of primary health care centre and the public health service

10. To inspire the youth for the development programme

The response of the villagers to Community Development Programme was tremendous, hence, the Government of India (GoI) decided to expand the coverage of the programme to other parts of the country. Limited resources, however, did not permit a rapid expansion of the Community Development Project. However, with somewhat less intensive approach than CD project a programme named National Extension Services (NES) was started on October 2nd, 1953.

The Idea behind NES was to cover entire country by the year1960. **Operational unit in both C.D and NES was development block.** Activities under NES programme were less intensive than those of C.D. Basic idea of both CD and NES is same. Both are complementary, interwoven and run concurrently. Each NES block covered 100 villages with 65,000 population. Each block is headed by Block Development Officer (BDO) who is in turn assisted by Extension Officer with 10 Multipurpose Village Level Workers (MPVLW). NES was thought of as the agency and CD is the method to bring about socio-economic transformation of the rural people.

SIMILARITIES BETWEEN EXTENSION EDUCATION AND CD

1. Both the processes are essentially educative

2. For both central objective is the "Growth of people"

3. Both processes are inter-disciplinary in nature

 4. Both aim at bringing about change in rural areas

5. Both are involvement processes

6. Both are relatively slow processes

7. Both are government sponsored and supported organizations.

8. Both emphasize on cooperation

9. Both are concerned with social and economic development

S.No.	EXTENSION EDUCATION	COMMUNITY DEVELOPMENT
1.	Place emphasis on individual development	Emphasizes cooperative or group action for the benefit of communities
2.	More indirect approach to help people to help themselves	Direct government approach to help people.
3.	Aims to bring about changes by leaving decisions for change of individuals	Decision are taken by group or representatives
4.	Extension education is highly specialized and concentrates on agricultural changes	Concerned with various elements of human concern including health, sanitation etc
5.	Mono purpose approach	Multipurpose approach
6.	Extension education is concerned with improving social organizations but not attack problems at this level	C.D. is directly concerned with developing social organizations
7.	It is the Means	It is the End

Lecture 7: New trends in agricultural extension- privatization, cyber extension/e-extension, market-led extension, farmer- led extension, expert system, etc.

PRIVATIZATION OF EXTENSION

The private extension service providers available in the country at present are the unemployed agricultural graduates, agricultural consultants, consultancy firms, progressive farmers, farmers organizations, cooperatives, non-governmental organizations, NGO run KVKs, agri-business companies, input dealers, newspapers, agricultural magazines, private television channels, private sector banks, internet and donor agencies.

The real boOst to this concept came when the government of Madhya Pradesh decided to implement on innovative programme on "Private-Public Partnership in Agricultural Extension Management" with the active facilitation of MANAGE. On November 5, 2001 private-public partnership with Dhanuka Group in Hoshangabad begun and a new chapter in history of agriculture system in India is opened. Thus, M.P. became the first State in the country to have a private extension policy. Many other companies' *viz.,* KRIBCHO, IPL, SOPA, Sriram fertilizers and NFL have come forward to work in other districts. The definition of agricultural Extension varies from simple transfer of information to facilitating the process of all-round human development. The extension services are mainly funded and delivered by the government in the Indian context. But, there are private players who also fund and/or deliver extension services. This process of funding ad delivering extension services by private individual or organization is called private extension.

These concepts about the privatization emphasizes three aspects, they are:

1. It involves extension personnel from private agency/organization

2. Clients are expected to pay the service fee (sometimes private extension may not expect fee from clients e.x. NGOs).

3. Act as *supplementary or alternative* to public extension service. Marketing is crucial for ensuring balanced and continuing development of sustainable agriculture.

Factors considered for Privatization of Agricultural Extension Service in India:

1. Types of crops cultivated throughout the country.

2. Socio-economic strata differences among the farming community viz. tenancy, ownership, leased, small, marginal, medium and large farmers categories.

3. Entirely drastic agro-climatic variation along across the length and breadth of the country. 4. Different approaches followed in various developing/developed countries and their utility possibilities in our country, environment etc.

5. Changes in rainfall pattern, vagaries of monsoon, floods, cyclone, etc.

Privatization of Agricultural Extension Service

According to Saravanan and Shivalinge Gowda (1999), Privatization of Agricultural Extension Service may be defined as the service rendered in the area of agriculture and allied sectors by the extension personnel working in the private agencies or organizations for which farmers are expected to pay a fee (or fees), and it can be viewed as supplementary and complementary to public extension services.

Privatization as a system of agricultural extension is gradually being adopted in Indian agricultural because of the following reasons:

1. Declining trend in government expenditure in public extension due to heavy financial burden;

2. Perception of public extension service as less effective in meeting the current needs of the farmers;

3. A shift in agriculture from subsistence level to commercialized agribusiness;

4. To meet the challenges of globalization and liberalization of the farm sector, and

5. Demand for specialized knowledge, information and assistance from farmers.

Characteristics of private extension system:

Private extension is mainly concerned with attaining maximum possible profit to the clients through advisory services, so they try to become more efficient and effective in providing services. Their remuneration is obviously linked with increased income of the farmers.

Target group: Private extension mostly concentrates on big farmers, farmers producing commercially, and in favourable environments. They will not be interested in investing on small, marginal and resource poor farmers because they cannot afford to pay for private extension's high charges.

Clients: In case of private extension system, clients are more committed and careful about the extension services, because they are paying for the services. Clients make best use of the private extension worker's time.

Assistance: Profit oriented services include not only technology transfer but also supply of critical inputs. Assistance based on seasonal needs and convenience of the farmers.

Technologies: Private extension agency transfers location specific and demand–driven technologies. Technologies are specialized and costly, but are profitable. Private extension ensures timely supply of inputs.

Organizations: Private extension personnel become more accountable to the clients and highly motivated because they are getting remuneration from their clients. They are professionally sound and will put constant efforts to upgrade their knowledge and technical know-how.

Funding: Private extension service gets funds from farmers' contribution and developmental agencies.

Extension service: Advisory nature of serice. Extension becomes purchased input and it generates new income to farmers.

Methods: Private consultancy mostly adopts personal contact methods, as group approach will reduce their chances of getting consultancy fee.

Strategies for Privatizing Extension

Commercialization of extension services: Complex, demand-driven technologies in the public extension system should be provided for a particular cost.

Introducing contract extension system: Public extension system can make contract with registered private agricultural consultancy agencies to transfer the agricultural technology.

Introducing share cropping system: Private / public extension agents are provided with remuneration in the form of share crop. It will increase the extension personnel's accountability and commitment to all service.

Giving partnership rights and more responsibility to private sector and NGO's: Private sector and NGOs are entering in a big way in recent years to provide agricultural consultancy. They may be given more responsibility in agricultural technology transfer.

Gradual withdrawal of public extension system: Gradual withdrawal can be done in two ways: area-wise and/or commodity-wise. Extension service responsibility in areas having favourable environment like high soil fertility, high irrigation potential, satisfactory infrastructure facilities,

commercial farming and commodities which provide high profit to farmers, can be given to the private sector.

Creating and strengthening farmers groups and cooperatives: Through farmers groups and cooperative, extension agents are appointed and the cost will be shared by the members. For this purpose, existing village cooperative, clubs, mahila mandals and water management committee are used. Private organizations such as, agricultural consultancy, commercial firms, agro-based industries, input agencies organizations, etc. will enter the area of extension service.

Reasons behind Privatization of Extension

i. Financial burden on Government:

ii. Disappointing Performance of Public Extension Service:

iii. Commercialization of agriculture: The privatization of extension service on the basis of payment is primarily based on two major considerations.

Firstly, the guarantee to provide expected profits.

The second question relates to marketing, private agencies can help by providing:

1. Information about market opportunities,

2. Input supply,

3. Infrastructure,

4. Consultancy,

5. Technical service

6 Marketing service

7. Other services: Crop, livestock insurance

8. Farm information advisory centres.

Merits of Privatization:

1. Extension generates new income, extension become economic input.

2. Provides demand-driven service.

3. Increases the voice of farmers in the extension service.

4. Extension service becomes more cost effective with efficient and quality service.

5. Privatization complements or supplements the efforts of public extension.

6. Extension personnel become more clients accountable.

7. Private extension increases staff professionalism.

8. Clients (farmers) are more committed to service.

9. Private extension doesn't concentrate only on food grain production but will promote crop diversification.

Demerits of Privatization of Extension:

❋ The consequence of privatization in user's fee, *i.e.* collection of cost from the beneficiaries.

❋ The feasibility of charging fee for extension service raises a question on the paying capacity of the farmer.

❋ In case the message does not yield the desired result, i.e. projected profit, the service will be rejected for future.

❋ Privatization does not care for sustainability; instead advocate exploitation of natural resources to the maximum extent.

❋ Private extension concentrates big and progressive farmers and areas having favorable environment.

❋ Private extension is less education oriented and more commercial in nature.

❋ The human resources development

❋ Role of organizing, motivating and guiding farmers for empowerment will be sidelined by the private extension agencies.

❋ Private extension restricts flow of information among the fellow farmers.

Cyber Extension

Cyber: According to Oxford Dictionary the word Cyber means, "relating to Information Technology, the Internet, and virtual reality

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, Graphics, audio, video and animation files. Software tools on networks provide facilities to interactively access the information from connected servers. The cyber space thus can be defined as the imaginary space behind the interconnected telecommunications and computer networks, the virtual world.

Extension: Extension stands for "the action or process of enlarging or extending something". It could be extending knowledge to the farmers.

Cyber Extension: Cyber Extension thus can be defined as the "Extension over Cyber Space" or 'Extension over virtual 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 networks, computer communications and digital interactive multimedia to facilitate dissemination of agricultural technology".

FEATURES OF CYBER EXTENSION

Access to the information is free

Information is available instantaneously 365 x 24

Communications can also be interactive through e-mail, discussion groups, and news groups

Information is available from any point on the globe

Communication is dynamic and ever growing

SUCCESSFUL EXAMPLES

These are the cases of application of information and communication technologies in rural India.

1. Information Village Shops / Information Village Project

M.S.Swaminathan Research foundation (MSSRF) aimed at bringing the benefits of modern information and communication technologies to the rural families in Pondicherry. A value addition centre as the hub of information network was established in Villianur village and four information shops were established in different villages. Through these information shops every morning the information is delivered to the farmers on weather forecasts, market prices, scientific technology, etc.

2. Warana Wired Village Project

The Warana "Wired Village" Project was a pilot initiative in Maharashtra, India (1998) that used information and communication technologies (ICT) to integrate and improve services within the Warana cooperative complex (a cluster of 70 villages), a region heavily reliant on sugarcane farming. Its goal was to provide digital access to information and services for farmers and the general public, enhancing the efficiency of cooperative societies and the overall socio-economic development of the region through computerization, localized interfaces, and various IT-enabled services. This project was jointly implemented by Government of India (GoI) through National Informatics Centre (NIC), Government of Maharashtra, and Warna Cooperative Society with the share of financial support being in the ratio of 50:40:10. The project involved setting up computer-based facilitation booths, networking 52 villages to a central computer network, and developing applications for various services.

3. Honey bee knowledge network

Under the honey bee knowledge network of Indian Institute of Management (IIM), Ahmedabad (Professor Anil K Gupta of IIM was the founder) a large number of grass root inventions (Indigenous technical knowledge or ITKs) have been identified and documented as short multimedia presentations. Database is created for these innovations and these are made accessible via wide area network.

4. E-Sagu Project

It is an agricultural information dissemination system. It was a tool for IT based personalized agro advisory system. It is personalized and cost-effective agricultural extension system. It aimed to improve farm productivity by delivering high quality personalized agro expert advice in a timely manner to each farmer at his door step. The project started in 2004 as a research project by International Institute of Information Technology (IIIT), Hyderabad and is funded by the NGO - MEDIA LAB ASIA.

The objective of e-sagu project is to increase the profitability of the farmer by increasing the efficiency of agricultural input and reducing the cost of production.

The system is having five elements:

1. Farmers

2. Coordinators

3. Agricultural Experts

4. Agricultural Information System and

5. Communication System

Several farmers are assigned to each coordinator. Farmers register into the system by providing relevant information about their farms (soil data, water resources, capital availability etc.). All parts are connected through internet.

1. Farmers: They are the end users of the system. They form the bottom layer. They can be illiterate and speak local language. They are not expected to use the system directly

2. Coordinators: A coordinator is associated with a group of farmers. The coordinator possesses agricultural expertise and basic data entry skills. He is provided with video camera or digital camera. He regularly visits the fields of the farmers associated with him and take photographs / video clips and enter the relevant data through text based forms and photographs into the system. Also when the system produces the advice, the coordinator contacts the concerned farmers and explains the personalized advice to them in a timely manner.

3. Agricultural Experts: These are agricultural scientists who give appropriate recommendation by interacting with the agricultural information system. Both the users and Agricultural Experts stay at their respective places of work, only information is transferred and moves between them through internet. The research project was undertaken in the cotton growing villages of Warangal District. The project could reduce the cost of cultivation by reducing number of sprays with the timely advice and also the profit of the farmer increased when compared to control group.

5. E-Chaupal:

"E-Chaupal", the unique web based initiative of ITC (Indian Tobacco Company)'s International Business Division, offered information and communication technologies(ICTs) related to latest local and global information on weather, scientific farming practices and market prices through the web portal in Hindi. This project facilitates easy access of information by the farmers at their door step. Considering the literacy and infrastructure constraints at the village level, **e-chaupal Sanchalak,** a lead farmer acted as the interface between computer terminal and the user farmers.

It is a powerful illustration of corporate strategy linking business purpose to larger societal purpose. It provided farmers

* Farming know-how and services
* Timely and relevant weather information
* Transparent price discovery
* Access to wider markets

Advantages of Cyber Extension:

1. Saves money, time and effort
2. Reduces steps in the extension process
3. Information rich and interactive
4. Offer instant international reach
5. Information is available 24x7

MARKET-LED EXTENSION

Concept of Market-led extension: In the changing scenario of agriculture, the farmers should be provided with proper up-to-date information ranging from production technology to market oriented knowledge *i.e.* What to produce? When to produce? How much to produce? When and where to sell? at what price? and what form to sell his produce. Basically market-led extension considers farmers as an agripreneur and enables farmers to get high returns (money to money) out

of the entire farming enterprise. This also facilitates farmers with diverse baskets of package of practices suitable to local situations/ farming systems.

With globalization of the market, farmers need to transform themselves from mere producers in the domestic market to producer cum sellers in a wider market sense to best realize the returns on their investments, risks and efforts. Keeping this in view, MANAGE started working on the concept of Market-Led Extension and the beginning was made through a three day national workshop on Market-Led Extension at MANAGE during 18th-20th December, 2001.

Objectives of market-led extension

- To identify possible areas of intervention of extension in agricultural marketing.
- To build up and use effective extension methodologies for providing need-based support to farming community in marketing of their produce
- The present linkage among Research-Extension-Farmers is extended by market linkage.
- To identify and communicate innovation for value addition practices and post-harvest technologies.
- To develop network and action plans for extension to support marketing of the product at different level.

Paradigm shift from Transfer of Technology to Market-Led Extension

Aspects	TOT Extension	Market-led Extension
Purpose/objective	Transfer of technologies	Enabling farmers to get optimum returns out of enterprise
Expected results	Delivery of messages Adoption of package of practices by most of the farmer	Transfer of technologies
Farmers seen as	Progressive farmers, high producer	Farmers as an entrepreneur "Agripreneur"
Focus	Productivity / yields. "Seed to Seed"	Whole process as an enterprise. High returns "Money to Money".

Technology	Fixed' package recommended for an agro climatic zone	Diverse package of practices suitable at local situations/ farming systems
Extensionist's interactions	Messages, Training, Motivating Recommendations	Joint analysis of the issues, varied choices for adoption, consultation
Linkages/Laison	Research-Extension farmers	Research – Extension – farmers extended by market linkages
Extensionist's role	Limited to delivery mode and feed back to research system	Enriched with market intelligence besides the TOT function. Establishment of marketing and agro-processing linkages between farmers groups, market and processors
Contact with farmers	Individual	FIG's/Focused groups/ SHG
Maintenance of records	Not much importance as the focus was on production	Very important as agriculture viewed as enterprise to understand the cost benefit ratio and the profits generated.

Challenges to Market Led Extension

- Gigantic size of Public Extension System
- Generation of data on market intelligence would be a huge task
- The present extension system suffers from several limitations such as stationery, mobility, allowances, personal development of cadres, etc.
- Infrastructure challenges
- Storage and preservation of produce
- Minimization post-harvest losses.
- Capacity building of extension personnel and farmers.

FARMER-LED EXTENSION

Farmer-led extension (FLE) is an approach where farmers actively share knowledge, skills, and experiences with each other through networks, farmer groups, or cooperatives, rather than solely relying on formal extension services.

Examples of Farmer-Led Extension Methods

- **Lead Farmers**

  In this model, successful and receptive farmers act as promoters of new ideas and techniques within their communities.

- **Farmer Groups and Networks**

  Farmers organize themselves into groups or cooperatives to collectively learn, share, and implement new practices.

- **Participatory Approaches:**
  Methods like participatory videos involve farmers in creating content to document and share their experiences and perspectives.

Criteria for selection of lead farmers

- ✓ Farming expertise / hard working / can be a role model
- ✓ Literacy: able to read and write
- ✓ Residence in the community
- ✓ Able to communicate
- ✓ Good behaviour
- ✓ Reachable/ available
- ✓ Trainable / teachable
- ✓ Good track record
- ✓ Innovative

Philosophy and principles

- Farmers and local institutions (e.x. producer organization or village leaders) should play a key role in selecting farmer-trainers and monitoring and evaluating them. This helps make the programmes more accountable to the community or groups that they serve.
- Farmer trainers are of the community. They communicate in local languages and are more sensitive to local cultures, mannerisms, farming practices, and farmer's needs.

- Farmer – trainers should be selected on the basis of their skills and interest in sharing information, not just on their farming expertise.
- Farmer – trainers need strong linkages with and support from development agents, the people who train them. Farmer-trainer generally serve as a complement to existing extension systems, rather than being a substitute for them.
- Facilitating organisations and local institutions need to be proactive in ensuring that women as well men become farmer-trainers.
- Simple and appropriate reference materials should be made available to the farmer-trainers.

**Differences between Production-led extension and Market-led extension**

S.No	Aspects	Production-Led Extension	Market-led Extension
1	Purpose/objective	Transfer of production technologies	Enabling farmers to get optimum returns out of the enterprise
2	Expected end results	Delivery of messages Adoption of package of practices by most of the farmers	High returns
3	Farmers seen as	Progressive farmer High producer	Farmer as an entrepreneur "Agripreneur"
4	Focus	Production / yields "Seed to seed"	Whole process as an enterprise / High returns "Rupee to Rupee"
5	Technology	Fixed package recommended for an agro-climatic zone covering very huge area irrespective of different farming situations	Diverse baskets of package of practices suitable to local situations/ farming systems
6	Linkages/ liaison	Research-Extension-Farmer	Research-Extension-Farmer extended by market linkages
7	Extensionists' role	Limited to delivery mode and feedback to research system	Enriched with market intelligence besides the TOT function Establishment of marketing and agro-processing linkages between farmer groups, markets and processors
8	Contact with farmers	Individual	Farmers' Interest Groups Commodity Interest Groups /SHG's
9	Maintenance of Records	Not much importance as the focus was on production	Very important as agriculture viewed as an enterprise
10	Information Technology support	Emphasis on production technologies	Market intelligence including likely price trends, demand position, current prices, market practices, communication net work, etc besides production technologies

EXPERT SYSTEM

An expert system is a software application that attempts to reproduce the performance of one or more human efforts. Expert systems are mostly based on a specific domain problem. Solves problems by mimicking human reasoning processes, relying on logic, belief, rules of thumb, opinion and experienced decision making.

COMPONENTS OF EXPERT SYSTEM

1)**User interface:** Present questions and information, in the form of images, animation clips and video clips

2) **Knowledge base:** The knowledge Expert uses to solve a problem. The data must be represented in a way that can be used to code into the computer and then be available for decision making by the expert system.

3) **Inference mechanism:** It will be integrated as a software program that the part of the program containing reasoning capability. It interacts with a knowledge base which contains information about how to solve problems.
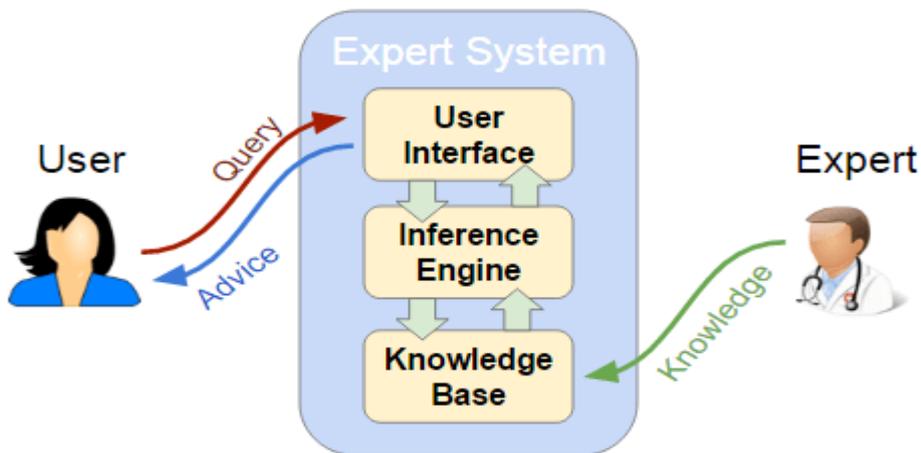
Lecture 8: DWCRA, CIG (Commodity Interest Groups), Farmer Producer Groups (FPGs)
DEVELOPMENT OF WOMEN AND CHILDREN IN RURAL AREAS (DWCRA)

DWCRA programme launched in 1982 focused on improving the socio-economic status of rural women and their children by promoting self-employment and group activities. As a sub-scheme of the Integrated Rural Development Programme (IRDP), DWCRA provided women with access to skills, training, and credit to start income-generating activities. The program encouraged collective action through women's self-help groups (SHGs) to achieve sustainable development.

DWACRA was launched as a sub-scheme of IRDP (Integrated Rural Development Programme) by the Government of India during 1982-83 on a pilot basis in 50 districts. This group approach for women was extended to cover all the districts with effect from 1st January,1990.

Approach

10-15 poor women form a group. One member of the group was the organizer, who assisted in the choice of activity, procurement of raw material, marketing of products.

Objectives

☐ To provide crèche services for children of working DWCRA women.

☐ Setting up literacy centers of DWCRA women with specific emphasis on girl child dropouts and illiterate members.

☐ Filling up critical gaps in the areas of immunization, nutrition, etc. for the children of DWCRA members.

☐ To provide some relief to the physically handicapped children of DWCRA members.

The main activities of DWCRA are: -Dairy Farming, Gem Cutting, Silk Weaving, Candles/Agarbatthi making, Readymade garments, Canteen, Beedi making, Multipurpose activities like preparation of Masala powders, Pickles prepration, etc.

Who are eligible?: Rural women coming under Below Poverty Line (BPL) have to form self-help groups.50% of the women must belong to SC/ST category. Priority was given to physically handicapped persons, girls or women.

Time Frame: After identification of the beneficiary, self-help groups will be formed immediately. As stated above revolving funds will be released after six months.

Pattern of assistance: Group of women in each DWCRA group gets Rs.25,000 as Revolving Fund. Central Govt. and UNICEF were sharing the expenditure on revolving fund equally. Later, UNICEF withheld its assistance from 1st January 1996, since then both Central and State Govt. share is 50:50 basis.

Implementation

At the district level, District Rural Development Agencies (DRDA) is responsible for execution of the programme. The Assistant Project Officer (APO), the additional Gram Sevika along with two Gram Sevikas and Mukhya Sevika constitute a team to assist in the implementation of DWCRA.

Strategy adopted by DWCRA, Andhra Pradesh

- Formation of Thrift and Credit groups to develop group dynamics, cohesion and homogeneity among the members.
- Sustainable income generating activities with access to credit under the Integrated Rural Development Programme (IRDP) and to training facilities.
- Total Literacy Campaign (TLC), Kalajatha, and multimedia publicity campaign through All India Radio (AIR), Doordarshan and print media, involvement of youth leaders, mahila mandals, voluntary organizations and Government functionaries created awareness and contributed to the process of social mobilization.

In Andhra Pradesh, in particular, several successful DWCRA groups have been formed and this has led to the empowerment of women in decision-making on various social aspects that impinge on their daily life.

Shortcomings of DWCRA

On the whole, though the programme is successful, at some places several shortcomings have also surfaced in implementation of DWCRA which has stymied its successful and effective execution in some States.

 Several groups have become defunct over time. The reasons for these include, among others

(a) Improper selection of groups;

(b) Lack of homogeneity among the group members;

(c) Selection of non-viable economic activities that are mostly traditional and yield low income

(d) The linkages for supply of raw material and marketing of production are either deficient or not properly planned

(e) Lack of institutional financial support, inadequate training

(f) Inadequacy of staff and their insufficient training and motivation has also affected the overall implementation of the programme.

Commodity Interest Groups (CIG) and Farmer Producer Groups(FPGs)

COMMODITY INTEREST GROUPS

A commodity interest group (CIG) is a self-managed, independent group of farmers who work together to achieve a shared goal related to a specific agricultural commodity, such as increasing sales or improving farming practices. Members pool their resources, access better opportunities, and share the benefits, leading to development, increased income, and greater confidence in marketing their produce.

Key Aspects of a Commodity Interest Group (CIG)

1. **Shared Goal**: Members focus on a common commodity, like tomatoes or fodder, and work collectively to improve their production and sales.

2. **Resource Pooling**: Farmers combine their resources, such as land or finances, to achieve greater efficiency and success than they could individually.

3. **Enhanced Market Access**: By organizing, CIGs gain better access to markets, enabling them to sell their produce in larger quantities and potentially secure better prices.

4. **Improved Practices:** Groups can facilitate the sharing of information, training, and best practices related to their specific commodity, leading to improved farming techniques.

5. **Self-Reliance and Empowerment:** CIGs promote a commercial outlook among farmers, helping them to become more self-reliant and to gain confidence in setting prices for their own produce.

6. **Community Development**: Activities like group marketing and establishing collection centres can also provide employment opportunities and support the local economy.

Operational functions of CIGs

1. **Bulk Purchasing**: Organizing members to buy inputs like seeds and fertilizers in bulk, which lowers costs and provides access to better quality products?

2. **Bulk Selling**: Aggregating produce from multiple members to achieve economies of scale and gain access to larger markets, increasing selling power.

3. **Information Sharing**: Providing a platform for members to share market intelligence, technical information, and training on best practices.

4. **Technical Support**: Facilitating training and extension services, conducting field trials, and providing access to technical expertise not available to individual members.

Market & Financial Functions of CIGs

1. **Market Access & Development**: Creating market linkages, organizing trade fairs, and developing marketing networks to ensure assured markets for aggregated produce.

2. **Value Addition & Processing**: Supporting primary processing activities such as cleaning, sorting, grading, and packaging, as well as developing infrastructure for value-added products.

3. **Credit & Funding**: Managing revolving funds for group activities and helping members access credit from formal and informal institutions.

4. **Financial Assistance:** Providing financial and technical assistance to growers and ensuring fair prices for their commodities.

Limitations of CIGs

1. **Single Objective:** Cooperatives are often focused on a single goal, such as providing inputs or selling outputs, which can limit their ability to diversify or adapt to broader market opportunities.

2. **Non-Tradable Shares:** Shares in these groups are typically not traded on open markets, which reduces their liquidity and can make it difficult for members to exit their investments or for new members to join.

3. **Limited Area of Operation**: The operational scope of these groups can be restricted, preventing them from expanding their reach and potentially limiting their market power.

4. **Government Control**: Excessive government intervention can stifle the autonomy and responsiveness of these cooperatives, leading to less effective operations in practice.

5. **Inadequate Management & Structure:** Poor internal management and a lack of effective organizational structures can lead to inefficiencies and reduce overall success.

6. **Political Interference:** External political influences can disrupt the operations of these groups, leading to a negative impact on their functioning.

FARMER PRODUCER ORGANIZATIONS (FPOs)/FARMER PRODUCER GROUPS (FPGS)

FPO Definition

It is one type of Producer Organization where the members are farmers. Small Farmers' Agribusiness Consortium (SFAC) is providing support for promotion of FPOs. PO is a generic name for an organization of producers of any produce, e.g., agricultural, non-farm products, artisan products, etc.

Need for an FPO

The main aim of a Farmer Producer Organization (FPO) is to help farmers get better income by working together. Small farmers alone cannot buy or sell in large quantities, so they miss the benefits of large-scale trade. Also, in agriculture, there are many middlemen who take a big share of the profit. As a result, the farmer gets only a small part of what the consumer finally pays. When farmers join together in an FPO, they can buy inputs and sell produce in bulk. This helps them reduce costs, get better prices, and have more power to bargain in the market.

Essential features of an FPO

An Organization will be called a Farmer Producer Organization, if

- it is formed by a group of primary producers
- it is a registered body and a legal entity
- producers are primary shareholders in the organization
- it deals with business activities related to the primary produce/product/ related inputs
- it works for the benefit of the member producers
- portions of profit are shared amongst the producers and the balance goes to the share capital or reserves.
- It has minimum shareholding members numbering 50 at the time of registration. However, the shareholding membership will have to be increased over a period of 3 years to a sustainable level.

Support for promotion of FPO

NABARD, SFAC, Government Departments, Corporates and Domestic & International Aid Agencies provide financial and/or technical support to the FPO.

Important activities of an FPO

    a. Procurement of inputs
    b. Disseminating market information
    c. Dissemination of technology and innovations
    d. Facilitating finance for inputs
    e. Aggregation and storage of produce
    f. Primary processing like drying, cleaning and grading
    g. Brand building, Packaging, Labelling and Standardization
    h. Quality control
    i. Marketing to institutional buyers
    j. Participation in commodity exchanges
    k. Export

Benefits for the members of FPO

- Increased farmer income
- Access to better market
- Low input costs through collective purchasing
- Enhanced bargaining power
- Improve knowledge transfer
- Technology adoption
- Access to finance and resources
- Value addition

Important Factors to be considered while forming an FPO

1. **Type of producers:** Understand who the small farmers or producers are, what they grow or make, their production level, income, and how they sell their produce.

2. **Market demand:** Check if there is enough demand in the market to buy the extra produce without lowering the prices.

3. **Willingness to improve:** See if the farmers are ready to invest and use new technologies to increase production or improve quality.

4. **Market challenges:** Identify problems or risks in the existing market and supply chain.

5. **Market stability:** Study how the market is affected by changes, shocks, or seasons.

6. **Past experience:** Find out if the community has any experience working together in groups or cooperatives.

7. **Main products:** Know which crops or products are in demand by retailers or processing units nearby.

8. **External support:** Look for support from government departments, NGOs, or private companies to help develop the FPO.

9. **Member motivation:** Understand what benefits (or drawbacks) farmers see in joining the FPO.

Aspect	Commodity Interest Groups (CIGs)	Farmer Producer Groups (FPGs)
Focus	Specific commodity or crop (e.g., cotton, sugarcane).	Multiple commodities or diverse farming activities.
Membership	Primarily farmers producing the same commodity.	Smallholder farmers, often involving a range of activities.
Objectives	Price stabilization, market access for a particular crop.	Improved productivity, income generation, collective marketing.
Services Offered	Primarily market-related services for a single commodity.	Wide-ranging services: marketing, credit, training, inputs.
Structure	Focused on commodity-specific challenges and policies.	Broader focus on farmer development, value chains, etc.
Legal Form	Can be informal associations or cooperatives.	Can be cooperatives or formalized into Farmer Producer Companies (FPCs).

Lecture 9: Transfer of Technology: concept and models and capacity building of extension, extension personnel

Definition of Transfer of Technology

Transfer of technology can be defined as the movement of relevant agriculture information from research (source of technology) or an innovation system through extension system (which acts as an interpreter, disseminator and facilitator) to the client (consumers of technology) system, i.e., the target group of farmers who are expected adopt and integrate the new technology into the existing farming systems and practiced (Samanta, 1985).

Extension vs ToT

One of the goals of extension is to transfer technology and in the process the extension agent is involved in the education of the farmers as well as arranging for the technical inputs and services, and hence, many people consider extension and transfer of technology as one and the same. However, Swanson and Claar (1984) argued that though extension is an essential and major part of technology transfer the terms are not synonymous. Transfer of technology includes additional 'function of technical input services'. On the other hand extension is concerned mainly with education of farmers on management of resources and decision-making skills, which may contribute to technology transfer. Hence, it is necessary to understand that the focus of extension is on education of the farmers rather than supply of technical inputs and services. Because of the misconception about the role of extension, many institutions lay emphasis on supply of inputs and technical -services, which are included as extension activities. However, extension agencies 'frequently engage in activities that are not directly connected to extension education such as provision of inputs, supervising credit repayment, enforcing 'government regulations, providing statistical information, organizing cooperatives, etc, (Arnon, 1989). Whether supplying of technical inputs and services is a part of 'extension' or not is still a debatable issue.

Models of TOT

1) Top-down-Model (Conventional Model)

Salient features of Top-down Model

1. Farmers were seen as passive recipient of technologies.
2. There was little or no contact between farmers and scientists.
3. Role of extension was to persuade farmers to adopt new technologies.

Such approach was evident in Indian Green Revolution. In this model/approach client's problems and views were not given due consideration for solving their problems. **The T & V system is one of the examples of top-down ToT model.**

2) Farmer Participatory Model:

Farmers, because of their deep interest, close connection with farming, and practical experience, naturally like to experiment with new farming methods. Their local knowledge and understanding of the agricultural and environmental conditions are valuable resources for developing suitable and effective technologies.

The characteristics of such approach are as given below:

a. Farmers are seen as active partners in research and extension.
b. Indigenous wisdom possessed by farmers are valued and considered.
c. Research is seen a joint endeavour involving farmers and researchers to solve problems being faced by farmers
d. Establishment of physical infrastructure and educational facilities for strengthening local experimentation is an essential aspect of participatory model.
e. It emphasis on the need for scientists to become more sensitive to understand,
f. Communicate and collaborate with farmers.

ATMA is an example of this type of ToT model.

3) Farmer-back-to-Farmer Model

An alternative to the above two models is the 'Farmer-back-to-Farmer' model (Rhodes and Booth, 1982). This model is based on the idea that research should start and end with the farmer. It is opposite to the top-down approach because it begins with the needs and experiences of farmers. In this model, farmers take an active role and are treated as important members of the research and problem-solving team.

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.

Meaning of training: Training means to educate a person so as to be fitted, qualified, and proficient in doing a 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 the farmers.

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:

S.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	Education refers to a more general process of intellectual development	Training refer 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

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.

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 centred, 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.

In-Service training is of different types, few 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.

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).

Lecture 10: Rural leadership : meaning, definition and concept, types of leaders in rural context, roles of leaders and methods of identification of a Rural leader

Definitions of leader

Leader is a person who exerts an influence over a number of people

Leader is one who leads by initiation of social behavior, by directing, organizing orcontrolling the efforts of others, by prestige or power or position

Leader is a person who is spontaneously considered or chosen as influential in a given situation. In every society certain individuals operate within groups to guide and influence members to action. These individuals are referred as leaders.

Leadership is defined as an activity in which effort is made to **influence** people to cooperate in achieving a **goal** viewed by the group as desirable – **Rogers and Olmsted**

Leadership is defined as the role and status of one or more individuals in the structure and functioning of group organizations, which enable these groups to meet a need or purpose that can be achieved only through the co-operation of the members of the group - **Hepple**

Classification of leadership or Types of leaders:

There are several classifications of leaders. For example the leaders may be classified interms of the types of groups they work with such as political, military, business, religious, recreational leaders, etc. **Whyte** has classified leaders in to **4** categories as follows,

1. **Operational leaders**: those persons who actually initiate action within the group, regardless of whether or not they hold an **elected office.**

2. **Popularity leaders**: means in a group a popular person will be elected to a position of leadership because the members like him. Sometimes such an individual may or may not be the actual leader of the group. Such persons holding elective positions do very little about initiating action for the group and are mere **figureheads** or **ornamental leaders.** They are also called **nominal** leaders.

3. **Assumed representative type**: refers to a person selected to work with a committee or other leaders because the latter (Group B) have **assumed** that he represents another group (Group A) they desire to work with; he may or may not be a **leader** of the group (Group A)
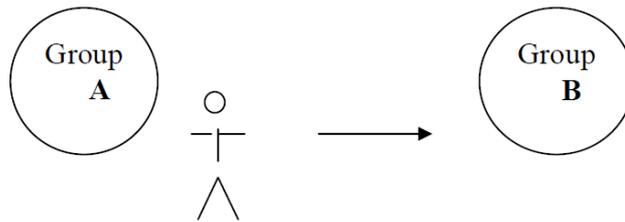
ARL

4. **Prominent talent**: Ex: artists and musicians who have exhibited an outstanding ability and accomplishment in their respective fields. It may include the experts and intellectual leaders

Another classification divides leaders into 2 categories

1. **Professional leaders**: the professional leader is one who has received specific specialized training in the field. He works full time as an occupation and is paid for his work. Ex. Extension Officer, Gram Sevak, Agricultural Officer, etc.

2. **Lay leaders**: the lay leader may or may not have received special training, is not paid for his work and usually works part time. e.x: Youth club president, Gram Sahayak, etc.

Lay leaders also called as **Volunteer leaders, or local leaders or natural leaders.**

These local leaders may be either formal leaders or informal leaders, depending on whether they are regular office bearers of organized groups or not.

Perhaps the **most significant** classification form the viewpoint of **modern research** as well as practical application of the results of research is the one designating them into the following **three** types:

1. **Autocratic leader**: Autocratic leader is also known as **authoritarian** leader. He operates as if he **cannot trust** people. He thinks his subordinates are **never doing** what they should do; that the employee is paid to work and therefore must work. The results of this leadership are

a. Most employees develop a sense of frustration, and finally feel insecure in their job

b. Work slows down or stops completely when the supervisor is away

c. The employee's needs for a feeling of importance and satisfaction are not met

d. Employees are kept dependent on the supervisor; thus they have no opportunity to show initiative

e. Employees frequently either become aggressive or alternatively identify closely with supervisor (submissive yes-men)

2. **Democratic leader**: He shares with the group members the decision making and planning of activities. The participation of all members is encouraged. He works to develop a feeling of responsibility on the part of every member of the group. He attempts to understand the position and feelings of the employee. If he criticizes, he does so in terms of results expected, rather than on the basis of personalities. The results of this leadership are:

a. Employees produce a larger quantity and higher quality of work

b. Individual and group morale are high

c. Employee's basic needs to participate and feel important are met

d. Employees feel secure

e. Employees seldom become aggressive

f. The supervisor finds that less supervision is necessary

3. **Laissez-Faire leader**: He believes that if you leave workers alone, the work will be done. He seems to have no confidence in himself. If at all possible he puts off decision-making. He tends to withdraw from the work group. He is often a rationalizer. The results of his leadership are:

a. Low morale and low productivity within the work group

b. Employees are restless and lack incentive of 'team work'

c. Another leader often an informal leader arises

d. Problems of administration, supervision and coordination are multiplied

Roles of leader in a Group:

Groups are dependent on **leaders**. A leader is not only a member of group and also is the **focal point** of activity of his group. He plays an important role in group's activity. The important roles of the leader are as follows:

1. **Group initiator**: the most important role of leader is that he should take **initiative** to get the group in to action

2. **Group spokesman**: if the group is to have outside relations it must be able to speak as a unit and leader is its voice. Leader has the responsibility of speaking for the group and representing the interests of the group

3. **Group harmonizer**: in all groups uniformities and differences are formed. A leader should be able to resolve differences peacefully. The role of the group harmonizer is to promote **harmony** in the group in line with basic purpose of the group

4. **Group planner**: generally it is assumed that the person chosen for leadership know a little bit more about the problems which the group is facing and the possible solutions.

So the leader has to plan the way by which the group can satisfy its needs. The leader has to plan for the group and with the group

5. **Group executive**: the leader is one who takes important role in conducting **business** of the group and he is responsible for seeing that the business of the organization is carried on according to democratic principles. It is the job of the leader that individuals of group accept responsibility of their part of activities in any plan of action adopted by the group

6. **Group educator or teacher**: In most of the groups the leader will have more training and experience. So the leader can teach according to the level of understanding of the members of the group so that they can understand his views. In this capacity his chief function is to develop and **train** other leaders so that group is not dependent completely on him

7. **Group symbol or symbol of group ideas**: all social groups have implicit (internal) or explicit (external) norms or ideals. As a rule persons accepted as leaders are those who have adopted these norms or **ideals** and live by them. The leader must make the members feel that they need ideals and depend upon them for accomplishing what they desire to do, the leader should be not be self-interested.

8. **Group supervisor**: the leader also acts as supervisor. A good leader **supervises** the work of his peers and subordinates. Professional leaders such as Extension Officers, in addition to serving as leaders of social groups also devote a portion of their time to working with lay leaders and group organizations like youth clubs, cooperatives, etc.

Different methods of selection of both professional and lay leaders

Selection of Professional Leaders

A. Interview

1. The **time-honoured** and **most widely** used method of selecting persons for position of professional leadership. It is based primarily upon an interview and an evaluation of past academic and occupational records of the individual. A large amount of information concerning a person can be acquired through an interview.

2. The chief difficulty with the interview is that one can observe and evaluate the applicant only as he answers questions during a **brief** period of time.

3. In industry and management there has been an attempt o supplement the interview by subjecting applicants to a battery of tests.

4. These tests measure ability, aptitudes, attitudes and interests and both the academic training and practical experience

5. The use of a battery of tests along with an interview provides a better basis for selection than using the interview alone

B. Performance Tests

1. These have been used in certain situations as a part of the basis for selection of professional leaders

2. One type of these is the '**Leaderless group tests'** in which seven or eight persons are given a common task to perform and it is left up to the persons involved to determine which person have become the leader

3. Another type of test is to appoint an individual as a **leader** and then observe how well he directs the activities of the members of the group

4. The big advantage of these performance tests is that one can observe the **potential leader** in a real life situation in which he is functioning as the leader of a group

Selection of lay leaders

A. Sociometry:

1. **Sociometry** is concerned primarily with obtaining **choices** in inter-personal relations,

such as with whom one would like to work, play etc. or to whom one would go for advice

on farming or other problems

2. It attempts to describe social phenomena in **quantitative** terms

3. It may be used in selecting professional leaders also, but of greater use in selection of

lay leaders

4. It is necessary that all the persons involved in a sociometric test **know** one another.

These tests are **not** designed to measure vague factor called **popularity**, but it is popularity of acceptance in terms of specific activities

5. Sociogram for the same individuals will manifest (bring out) **differences** when the choices are in relation to different activities. This method is very useful to the extension worker in finding out the natural or local or informal leaders in the villages
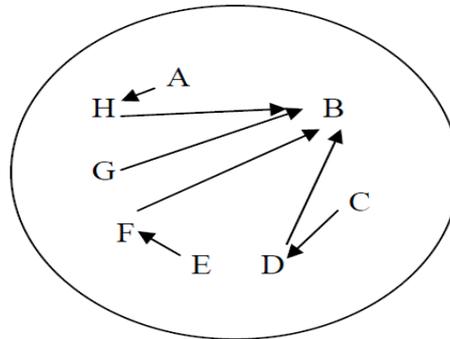
SOCIOGRAM

6. An extension worker goes into a given area and asks the farmers to indicate whom; they ordinarily consult for advice on farming, which the extension worker wants to introduce. Usually after a few interviews, it becomes apparent (clear) which farmer is the influential person on natural leader. The figure below illustrates the Sociometry test.

7. When farmer H is interviewed, he may indicate that generally he goes to B for advice on farming, farmers G, F, D may also say that they take advice from farmer B on farming.

The farmers A, E and C are depending on farmers H, F and D respectively. Then B is the operational or potential natural leader for these farmers and therefore if extension worker induces farmer B for the adoption of new improved practices it is quite likely that the other farmers will be influenced by his behaviour and adopt the same practices.

B. Election

1. Another method widely used in selecting leaders, consists simply of the members of the

group **electing** a leader through **voting** or any other method

2. The extension worker can guide or assist the local people in electing the right person for

the right job by explaining to the group, the functions of leader in relation to particular problem and outlining the qualifications of a good leader for the given purpose. Election can also be used for selecting persons to receive leadership training who later become the actual leaders

C. The Discussion Method

1. Through discussions (on any subject) the person with sound knowledge and ability is soon recognized and a mere talker easily spotted

2. Discussion gives encouragement and assurance to the potential leader to express himself, and over a period of time may make him more confident in accepting some position of leadership and he emerges as a valuable leader.

D. The Workshop Method

1. In this method a large group is broken in to **smaller groups** and the responsibility of the program and decision-making rests upon the smaller units

2. Leadership emerges in each small group. Over a period of time, the extension worker can spot certain leaders who come to the fore (front) in taking responsibilities

3. The extension worker or professional leader in the workshop has the position of consultant, observer, discussion group leader, etc.

E. The Group Observer

1. The extension worker should watch (observe) a community or group in action and then he will be able to spot potential leaders

2. He may observe the community in any type of situation. For obtaining the best results, the group should not be aware of that the extension worker is observing them

Rogers who designated the local leaders as **opinion leaders** mentioned the following two methods to locate these leaders in mass public.

F. Key informants

1. In a community, **key informants** or persons with important information about their community like teachers, VLWs, etc may be asked by the extension worker to indicate opinion leaders in that area. Based on their indications he will select the leader.

2. **Key informant method is cost saving and time saving** when compared to the sociometric method and other methods.

G. Self-designating technique

This consists of asking a respondent a series of questions to determine the degree to which he perceives **himself** to be an opinion leader based on the analysis of the answers obtained, the extension workers select a leader.

Lay leaders are otherwise called as local leaders or **informal leaders** or **volunteer leaders**. Professional leaders are otherwise called as **formal leaders.**

Lecture 11: Extension administration: meaning, definition and concept, principles and functions. Monitoring and Evaluation – definition and concept, principles. monitoring and evaluation of extension programmes

ADMINISTRATION is the guidance, leadership and control of the efforts of a group of persons towards common goals. Administration implies conscientious efforts directed towards organizing and controlling human activities in order to achieve agreed or desired goals. It involves, therefore, the organization, direction and control of persons and facilities in order to accomplish specified goals.

Administration involves essential activities of the people charged with ordering, forwarding and facilitating the efforts of individuals or groups brought together for desirable purposes. It involves efforts such as decision-making, programming, communicating relevant information, controlling and evaluating various actions.

Administration is used during policy formulation for developing staff, understanding the planning process, job description, training and evaluation processes.

Management Versus Administration

Management is a part of Administration. Management is an administrative technique in the conduct of public affairs. The traditional framework within which a civil service exercises its responsibilities is described as an administration.

Administration lays emphasis on proper procedure, regulation and control. It employs ease of communication to achieve unambiguity – interpreting words and issues to ease the operation of a system.

Administration takes place in the health sector, universities, army, church, agriculture, industries, business and social organizations such as the Agricultural Extension Service.

The Concept of Extension Administration

Agricultural extension involves various activities directed to improve food production and living standards of the people. Extension, therefore, requires direction and control of these activities in order to achieve the desired goals. Extension administrations depicts the effort of the administrator to direct, guide and integrate the activities of members of his staff in order to attain the goal of the extension service and help farmers realize their objectives. Thus, extension administration refers to the art of directing, guiding and controlling human and material resources in an extension system. It involves articulate joining of all aspects of agriculture such as animal and crops husbandry, soil management, technology design and supply services in order to increase food production and income levels of farmers.

Administration in extension is concerned mainly with bringing human beings together for the purpose of executing extension functions.

The administrator at the upper hierarchy should permit all members of the extension agency to participate in the efficient utilization of the available resources in order to achieve set goals. Members of an extension service are categorized into directive or executive cadre. Any staff in the directive cadre assumes responsibility for directing which indicates that there are people to direct. Similarly, the executive staff (also known as organizing staff) has the responsibility for organizing and executing issues, which indicates that there are people to organize. For a meaningful extension administration, mutual co-existence among members of an extension system is necessary.

Extension administration recognizes the existence of people with diverse interests, aptitudes, attitudes and social background. Therefore, extension is designed to serve farmers with differences in orientation. Extension has the task of limiting various interests and discouraging the uninteresting nature of farmers in order to salvage the whole agricultural system and achieve overall improvement in national economy. Extension administrators should focus efforts towards desired change. Change can be achieved through meaningful inter and intra-organisational relationships among extension workers and other development agencies.

Principles of Administration

1. **Organizational Structure:**
   An administrative organization should have a clear hierarchy, from higher to lower levels. Every worker should know who their supervisor is, and every supervisor should manage specific staff members. Each staff member should report to only one leader. This structure should be flexible so it can be adjusted when needed.

2. **Authority and Responsibility:**
   The authority given to a person should match the responsibility assigned to them. Responsibility means being accountable for completing a task. Responsibility cannot exist without authority, and while authority can be delegated, responsibility cannot. Authority is the main coordinating power in the organization.

3. **Clarity in Roles:**
   Administration works best when everyone clearly understands their responsibilities and the authority they have. **A job description** that clearly lists duties and authority is very important for effective management.

Job description is a statement describing the duties of a worker. **Job specification** is a statement that explains the minimum requirements of the staff qualification.

4. Two-Way Communication:

For effective administration of an extension system, communication must flow in **both directions**. Both vertical (between higher and lower levels) and horizontal (between peers) communication are important to develop positive staff attitudes and engagement. Communication is the process through which decisions and information are shared among members of the organization. Without it, the organization cannot function properly, and staff cannot guide farmers effectively.

5. Use of Expert Knowledge:

Effective extension administration depends on the **proper use of expert knowledge** in planning and implementing programs. A common problem worldwide is the underuse of expert knowledge in policy-making and program execution, leading to weak decisions and poor project outcomes. Extension administration needs expertise in various areas of agriculture and extension services. Efficiency improves when specialist recommendations are properly applied and managed.

Functions of an administrator in the administrative process are:

a) Planning

b) Organizing

c) Staffing

d) Directing

e) Coordinating

f) Reporting and

g) Budgeting

These are represented by the acronym POSDCoRB

a. **Planning** - Effective extension work results from planning. Any administrator that does not plan ahead, with specific aims and objectives to be realized within a specific time, is bound to inhibit performance. It is the function of the administrator to plan the programme of extension and such a programme will include:

1. the description of situation

2. problems or actions that need to be given attention

3. aims and objectives to be achieved

4. responsibilities of various officers, and

5. possible courses of action to achieve the stated objectives

Planning helps to (a) avoid waste of resources, (b) facilitate proper allocation and distribution of available resources, and (c) provide a guide to constructive action in the field.

b. **Organizing:** Organising refers to the arrangement of persons, ideas, materials and other facilities necessary for the performance of functions. Work is assigned to individuals, groups or departments.

c. **Staffing:** This involves the recruitment, selection, development, utilization and accommodation of human resources in the organization.

d. **Directing (Supervision)**

This involves direct face-to-face oversight of tasks assigned to individuals or small groups in order to ensure correct and adequate performance. It is the process of ensuring that policies, administrative procedures and programmes are carried out properly. The supervisor is a person who is responsible for overseeing the work of a given number of field officers in a given area.

The function of a supervisor is that of translating extension policies into action. Optimum performance is obtained under a supervised condition.

e. **Coordination**

The organisation's activities must be coordinated and correlated. Coordination is an essential element in administration and it involves adjustment of the parts to each other. The administrator should coordinate the human efforts and group staff activities in order to obtain the best results.

f. **Reporting (Evaluation)**

This function involves appraisal of activities or performance. From time to time, administrators must evaluate themselves, their staff and the system. Evaluation offers the opportunity to determine how well the goals of the extension service are being achieved and the overall performance of the organization. Information and data are gathered from the various units, departments and even individuals in the form of a report. Based on the report, adjustments could be made.

g. **Budgeting**

Budgeting is a process of optimal allocation of available resources to competing needs, so as to achieve set objectives. Some of the objectives are to:

a) plan the policy of an organization

b) coordinate the activities of an organization so that each is part of the integral whole

c) control each function so that the best possible result may be obtained, and

d) evaluate the activities of an organization.

The budgeting process creates a formal planning framework and gets people involved in deciding what is to be done in the future.

It fosters coordination and communication, and promotes efficiency in operating an organization. Budgeting makes people aware of the cost of undertaking a specific activity or project.

It aids in orienting organizational operation towards the goals of the organization.

Limited resources can be allocated to provide the greatest degree of benefits.

MONITORING

Process of assessing/analysing progress of an on-going project based on pre-determined indicators and objectives of programme.

Monitoring simply means to keep a watch on what is happening. Monitoring is generally done at the operational level and involves collection and analysis of information. To be effective, monitoring should be a continuous process.

The monitoring of extension activities consists of timely gathering and analysis of data on the organization of the extension service and its performance, as well as on farmers' acceptance of extension advice.

Monitoring reveals whether the components of the extension service are operating as intended. It is done through survey, baseline, meetings, discussions, reporting, structured interviews, questionnaire surveys etc.

For monitoring indicators are of 2 types – (1) Process indicators, (2) Impact indicators

There are qualitative / quantitative indicators. Qualitative indicators use proxy indicators

e.x. for measuring leadership ask 2-3 questions indirectly to assess it - like how many women can take decision, how many can lead a group on her own, how many women can handle crisis situation.

Quantitative indicators deal with numerical values. They are easy to measure. Qualitative indicators assess changes in knowledge, attitude, behaviour and practices at individual, family, community levels.

EVALUATION IN EXTENSION

Evaluation is an essential step in extension activities. It involves assessing how effective extension programs have been and what new agricultural knowledge farmers have gained from them. If farmers did not benefit, evaluation helps identify the reasons, including why farmers may not have shown interest. Studying these aspects allows the organization to improve future programs and make them more useful to farmers.

Definitions of Evaluation

1. Programme evaluation is the determination of extent to which the desired objectives have been attained or the amount of movement that has been made in the desired direction (Boyle and Johns, 1970)

2. Evaluation is the comparision of the situation before and after a development programme has operated with an area for a predetermined period (Metthew, 1956)

3. The process of assessing impact of project / programme *vis-à-vis* set goals / objectives

4. Evaluation in its broadest sense means **judging the value of something.**

5. Evaluation may be defined as a process of systematic appraisal by which we determine the worth, value or meaning of something. This something in extension may be a programme or part of a programme, a method used in carrying extension work, or a situation such as a community a block or even a larger area.

6. Extension evaluation is the process of determining how well the desired behavioural changes have taken place or taking place because of extension education effort.

On the basis of the above definitions, we can say that the study of causes of success or failure of the programme is called evaluation.

Objectives of Evaluation:

1. To know the causes for success or failure of the programme, along with identifying the obstacles for success in the programme

2. To inspire the workers for the evaluation of their objectives

3. To know the merits and demerits of the programme

4. To increase the self-confidence in both the rural people and extension worker

5. To unearth the expenses and achievements of a programme

6. To find out the usefulness of new experimental teaching methods

Types of evaluation:

I. **According to purpose for which we conduct evaluation- it is of two types**

☐**Formative evaluation**: gathers data for development of an effective extension programme.

☐**Summative evaluation**: tries to measure end results of a programme in order to decide whether or not it should be continued or discontinued.

II. **According to the stage of the programme-** when the evaluation is conducted. It is of two types

☐**Ongoing or process evaluation**: Ongoing or process evaluation means evaluation when the work is in progress, it enables the evaluator and the stakeholders to develop a better understanding of the functioning of the programmes.

▢**Outcome evaluation**: Outcome evaluation is done after completion of the work. It enables the participants to assess which of their goals are being achieved and how well this is being done.

III. According to the nature of evaluation- it is divided into 5 degrees as suggested by *Frutchey (1967)*

Casual every day evaluations	Self-checking evaluations	Do-it-yourself evaluations	Extension studies	Scientific research
1	2	3	4	5

Fig: Evaluation continuum of **DEGREES OF EVALUATION**

The first three degrees of evaluation are **informal in nature** and the next two degrees of evaluation are **formal in nature.**

1. Casual every-day evaluation: This is the initial part of evaluation we do every day. Eg- Good dress, best actor, worst speech etc. These simple observations are important but have their own limitations. We must be careful in analysing what is the truth and what is seen. It is most crude and subjective method of evaluation.

The following are some of the limitations of this type of evaluations:

▢ Personal ideas used instead of standard measurements.

▢ Intuition (guess) and personal bias cannot be eliminated

▢ No systematic plan for arriving at conclusion

▢ May have only part of the information.

2. Self-checking evaluation: This is the next higher degree of evaluation. It makes conscious attempt to apply principles of evaluation. Ex: checking on ordinary observations, talking with others, getting other people's judgments etc **Ex**: if person X comes to an extension officer and says that in Ramapur village, farmer Venkataiah got 100 bags/acre of yield with Tellahamsa variety, Extension worker instead of directly accepting this information, (s)he personally visits the field of the farmer Venkataiah and talks to the villagers and self-checks whether the information received was correct or not.

3. Do-it-yourself evaluation: This is still higher degree of evaluation. This involves more careful planning and applies principles of evaluation and are more systematically done. They usually require surveys or score cards. **Ex:** If A.O. gets an information that in an X village flood has damaged 100% of crops, he will not totally depend on this information. He visits the

village and with the help of surveys or score cards, he will evaluate the extent of damage to crops by himself and record observations.

4. Extension studies: This is the fourth level of evaluation continuum, complicated than the above three methods. Uses higher tools, techniques, and methods for evaluation purpose. Uses more scientific approach. Ex: Theses of M.Sc and Ph.D in extension studies come under this category.

5. Scientific research: last on evaluation continuum and most complex. Experimental studies scientifically carried out to determine cause and affect relationships. The scientific research must be

a. Factual (or Valid): Measure what you think you are measuring

b. Analytical: Analyse the relationships of various factors

c. Reliable: Sample representative of population consistency of results.

d. Objective: Free of bias- others get similar results.

e. Impartial: Approach with a open mind and spirit of enquiry

IV. According to the sources, evaluation is divided into 2 types

1. Internal evaluation: Internal evaluation can be done in different forms. Ex: performance appraisals, review committees in an organization, etc.

2. External evaluation: When an external person, institution or development agency has done an evaluation work, it is called external evaluation. **Ex:** Evaluation of ATMA project by EEI, Hyderabad.

Importance of evaluation in Agricultural Extension

1. Extension evaluation helps to determine the degree to which specific objectives are attained **Ex:** After conducting a training programme on SRI, extension worker can evaluate farmers and can understand whether they gained any knowledge on all principles and practices of SRI cultivation.

2. It also helps to provide periodic tests which gives direction for continuous improvement of work. **Ex:** If extension worker has delivered lecture on new concept cluster bean cultivation for its gum extraction, which is followed by evaluation of training. If majority of the farmers have not understood the concept or technology, 'lecture' method has to be changed. Lecture should be followed by a method demonstration / result demonstration /exposure visit.

3. It helps to serve as a check on extension teaching methods

4. It helps to furnish data regarding the rural situation to extension programme planning

5. To provide evidence of the value of the programme and a basis for adjusting a programme

Ex: If a particular training programme is felt to be of good value by the participants, the same thing can be documented and kept as evidence.

6. To give satisfaction to leaders and cooperators through an understanding of what is accomplished

Ex: Following a method demonstration, if majority of trainee farmers were able to run Cono-weeder for weeding in SRI paddy, this gives leaders / cooperatives a satisfaction. Good oral or written performance of farmers for a lecture on marigold cultivation practices, gives a satisfaction not only to extension worker but also for leaders and cooperatives

7. To help in locating strong or weak points in any programme or plan

Ex: Method demonstration on vermi-compost preparation in village could have the following strong and weak points

Strong points and Weak points

☐*Collection of good quality of semi rotten material*

☐*Poor gathering*

☐*Demonstration done under shade* ☐*No wide publicity*

☐*Good interaction between farmers and extension worker*

☐*Literature not distributed*

8. To ascertain the result of organization and administrative procedures of the programme

9. It also helps to establish a bench mark

10. It provides the information with whom we work i.e. people

Ex: Evaluation helps to assess certain information about the villagers like their cooperativeness, sincerity, hospitality, hardworking nature, litigant nature, women participation, enthusiasm, risk proneness, impact of various political groups, etc.

Lecture 12: Extension Teaching Methods- meaning, classification, individual, group and mass contact methods

MEANING & DEFINITION

Extension teaching methods may be defined as the devices used to create situations in which communication can take place between the instructor and the learner.

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

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 a according to use.

1. According to Use:

(a) **Individual contacts**

    1. Farm and home visit

    2. Farmer's call

    3. Personal letter

    4. Adaptive or mini-kit trial

    5. Result Demonstrations

(b) **Group contacts**

    1. Method demonstrations

    2. Group Meetings

    3. Small group trainings

    4. Farmers Day/ Field Day

    5. Field trips

    6. Study Tours

    7. Group discussion

(c) **Mass contacts**

    1. Campaign

    2. Exhibition

    3. Mass meeting

    4. Kisan Melas

    5. Bulletins,

    6. Leaflets

    7. News stories;

8. Circular letter;

9. Radio

10. Television;

11. Exhibits;

12. Posters.

Classification of extension teaching methods according to use is more widely used

2.   According to Form

(a)   Written

i. Bulletins; ii. Leaflets; iii. News articles;

iv. Personal letter; v. Circular letters.

(b)   Spoken

i. General and special meetings of all kinds;

ii. Farm and home visits; iii. Office calls;

iv. Telephone calls; v. Radio

(c)   Visual or Objective

i. Result demonstrations, ii. Exhibits,

iii. Posters; iv. Motion pictures, charts, slides

and other visual aids.

(d)   Spoken and visual

i) Method demonstration meetings;

ii) Meetings at result demonstrations;

iii. Meetings involving motion pictures, charts and other visual aids; iv. Television.

INDIVIDUAL CONTACT METHODS

Individual contact is a direct, face to face contact by an extension worker with farmer individuality for a specific purpose, in his office or on the farm or at home.

STRONG POINTS

1. Useful in contacting the "stay-at-home" type of people.
2. For teaching complex practices.
3. For selecting local leaders, co-operators, demonstrators.
4. To increase confidence of farmers in Extension.
5. To gain first-hand knowledge of farm and home conditions.
6. The farmer feels a sense of personal importance which is conducive to bring about the desired changes.
7. Enhance effectiveness of group methods and mass media. Effectiveness of group responsibility depends on willingness of individuals to share in it.
8. It is individuals, not groups, who learn, who make choices and accept responsibilities.

1.   Relatively expensive, because time-consuming.
2.   Low coverage of farmers.
3.   Possibility of extension worker being charged with favouritism.

GROUP CONTACT METHODS

A group may be defined as an aggregate of small number of people in reciprocal communication and interaction around some common interest. In this method the extension agent communicates with the people in groups and not as individual persons.

STRONG POINTS

1. Enable face-to-face contacts with large numbers at a time.
2. Facilitate sharing of knowledge and experience, and thereby strengthen learning.
3. Meetings are adaptable to almost all lines of subject matter.
4. Satisfy basic urge of people for social contacts.
5. Less expensive than individual contacts, due to saving of time.
6. More effective in stimulating action than mass contacts.
7. Group influence facilitates individuals to accept changes.

WEAK POINTS

1.   Wide diversity in interests of audience creates a difficult learning situation.
2.   Holding meetings may become "real objective".
3.   Pitfall of working with caste groups or groups with vested interests should be avoided.

MASS CONTACT METHODS

Mass contact methods refer to those which enable development agents or agencies to reach a large number of persons, directly or indirectly with one exposure or a single source.

STRONG POINTS

1.   They reinforce individual and group contacts by complementing or supplementing them.
2.   They reach much larger and different audiences.
3.   They save time and expenditure in reaching large numbers.

WEAK POINTS

1.   Less intensive and less effective than individual and group contacts in bringing about changes in practices.
2.   Lack the advantages of "social contacts" or "personal touch".
3.   Recommendations being general may not apply to special situations or individual needs.
4.   Difficult to evaluate the results.

No Single Extension Teaching Method Is Suitable To All Situations

INDIVIDUAL CONTACT METHODS

In this method, the extension agent communicates with the people individually maintaining a separate identity of each person. This method is followed when the number of people to be contacted are few, are conveniently located close to the communicator and sufficient time is available for communication.

Individual methods
1. Farm and home visit
2. Farmer's call
3. Personal letter
4. Adaptive or mini-kit trial
5. Result Demonstrations

Advantages
1. Helps the extension agent in building rapport.
2. Facilitates gaining first -hand knowledge of farm and home.
3. Helps in selecting demonstrators and local leaders.
4. Helps in changing attitude of the people.
5. Helps in teaching complex practices.
6. Facilitates transfer of technology.
7. Enhances effectiveness of group and mass methods.
8. Facilitates getting feedback information.

Limitations
1. This method is time consuming and relatively expensive.
2. Has low coverage of audience.
3. Extension agent may develop favoritism or bias towards some persons.

Farm & Home Visits: It is a face-to-face type of individual contact by the extension worker with the farmer and/or the members of his family on the latter's farm or at his home for one or more specific purposes connected with extension.
- Provides extension worker with first-hand knowledge of farm and home conditions
- **The ratio of "takes" (acceptance) to "exposures" (efforts) is high**

Farmer's call: Farmer's call is a call made by a farmer or homemaker at the working place of the extension agent for obtaining information and assistance.

Objectives:
1. To get quick solution of problems relating to farm and home.
2. To enable the farmer and homemaker to bring specimens for proper identification of the problem.
3. To ensure timely supply of inputs and services.
4. To act as a reminder to the extension agent.

Limitations:
Being away from the situation, it may be difficult for the extension agent to understand the problem in its proper perspective. Extension agent may not be available all the time.

Personal letter: Personal letter is written by the extension agent to particular farmer or homemaker in connection with the extension work.

Objectives:

1. To answer to queries relating to problems of farm and home.

2. To send information or seek cooperation on important extension activities.

Techniques

- Send the letter in time or if a letter has already been received send a prompt reply.
- Content should be clear, complete to the point and applicable to the farmer's own situation.
- Use simple and courteous language.

Adaptive and mini-kit trial: It is a method of determining the suitability or otherwise of a new practice in farmer's situation. Small sized observation plots are laid out simultaneously in a wide geographical area comprised of several agro climatic zones. These are called MINIKIT TRIALS.

Objectives:

- To test a new and promising practice under the resources, constraints and abilities of the farmer. To find out the benefits of the new practice in comparison to the existing one.
- To buildup confidence of the extension agents, research workers and farmers.
- To act as a precaution against insignificant, faulty or hasty recommendations.

Limitations:

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

Result Demonstration: Result demonstration is a method of motivating the people for adoption of a new practice by showing its distinctly superior result. This is a very effective method for the transfer of technology in a community. A great advantage of demonstration is seeing how an innovation works in practice.

Objective:

1. To show the advantages and applicability of a newly recommended practice in farmer's own situation.

2. To motivate groups of people in a community to adopt a new practice by showing its result.

3. To build up confidence of the farmers and extension agents.

4. To develop innovation leadership.

Technique:

Planning and preparation

Analyse farmer's situations and select relevant practices.

Select a responsible and co- operating farmers.

Select representative locations for conducting demonstration.

Prepare a calendar of operations.

Implementation

Explain the objectives and steps.

Organize materials and equipment.

Give adequate publicity.

Start the demonstration on the scheduled date and time.

Put up suitable sign board to be colourful, visible with local language.

Take photographs.

Analyse and interpret the results.

Emphasize applicability of the new practice in farmer's situation.

Follow- Up

Use the results of demonstration in future and disseminate through media.

Utilize demonstrating farmers in meetings and training.

Prepare visual aids for future use.

Avoid conducting demonstration with the same farmers.

Limitations:

Need more time, energy and funds.

Unsuccessful demonstration may cause setback.

Group Contact Methods

A group may be defined as an aggregate of small number of people in reciprocal communication and interaction around some common interest. In this method the extension agent communicates with the people in groups and not as individual persons.

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.

Objectives

1. **To teach skills and stimulate people to action.**

2. To get rid of inefficient or ineffective movements.

3. To improve upon the result by doing a job in a better way.

4. To build up learner's confidence and satisfaction on the practice.

Technique

Planning and preparation

Decide on the topic, audience and venue.

Select most important topic for immediate use.

Contact subject matter specialist.

Collect relevant information, materials and equipments.

Practice the demonstration stepwise.

Decide on the time and date in consultation with the local leaders.

Complete all arrangements.

Display diagrams, charts, graphs at demonstration site.

Implementation

Start the demonstration on the scheduled date and time.

Show each operation step by step and explain clearly why and how it is being done.

Ensure that all the participants have seen and understood. Repeat difficult steps.

Invite the participants to practice the skill and clarify their doubts.

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 equipments.

Limitations

Suitable mainly for practices involving skills.

Needs good deal of preparation, equipments and skill of the extension agent.

Group Meeting: Group Meeting is a method of democratically arriving at certain decisions by a group of people by taking into consideration the members point of view. Group discussion is a very important extension method to influence participant's behaviour. It plays an important role in increasing knowledge and changing attitude.

Objective

To prepare a favourable climate for discussion, pooling the knowledge and experience of a number of persons.

To facilitate in- depth discussion.

To generate new ideas and methods.

To develop a favourable attitude and commitment.

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.

Field day/ Farmer's day: Field day/ Farmer's day is a method of motivating the people to adopt a new practice by showing what has actually been achieved by applying the practice under field condition. It is a method in which a group of interested farmers accompanied and guided by an extension worker, goes on a tour to see and gain first-hand knowledge of improved practices in their natural setting (whether on research farms, demonstration farms, institutions or farmers fields). It is a series of field and demonstration meetings arranged in a sequence.

Study Tour: In study tour a group of interested persons accompanied and guided by one or more extension agents moves out of their neighborhood to study and learn significant improvements in farm and home elsewhere. The main purpose is to motivate the visitors by showing what others have been able to achieve.

Objectives

To expose the visitors to a new and different situation this shall help in changing their outlook and extend their mental horizon.

To understand the gap in technology adoption.

To explore the feasibility of adopting new practices in visitor's own situations.

To induce a spirit of competition amongst the participants by showing what others have been able to achieve.

MASS CONTACT METHODS

In this method the extension agent communicates with a vast and heterogeneous mass of people, without taking into consideration their individual or group identity. 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 campaign, exhibition and mass meeting.

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 is 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.

1) CAMPAIGNS

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

Objectives

To create mass awareness about an important problem and encourage them to solve it.

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

2) EXHIBITIONS:

An Exhibition is a systematic display of models, charts, photographs, pictures, posters, information etc. in a sequence around a theme to create awareness and interest in the community.

Exhibition is a planned display of models, specimens, charts, posters etc. presented to public view for instruction, judging in a competition, advertising or entertainment.

Objectives

To acquaint people with the better standards.

To create interest in a wide range of people.

To motivate people to adopt better practices.

3) KISAN MELAS:

Kisan mela is an organized educational activity for involving and educating farmers by bringing together the farmers, scientists, extension workers, input agencies, developmental departments and non-governmental agencies on agriculture or allied aspects at a Research Station or an agriculturally important educational center, where the farmers can see, interact and gain first hand knowledge about the latest technologies and developments in agriculture and allied aspects.

Lecture 13: ICT Applications in TOT (New and Social Media), media mix strategies

Definition of ICT

FAO (Food and Agriculture Organization, 2000):

"Information and Communication Technology (ICT) in agriculture refers to the use of modern digital tools and communication systems to collect, process, and disseminate agricultural information to farmers and stakeholders for improved decision-making and productivity."

World Bank (2008):
"ICT encompasses a broad set of technological tools that facilitate information exchange, knowledge sharing, and capacity building in rural development and agricultural extension services."

How ICT and New & Social Media Help in Transfer of Technology (ToT):

1. **Rapid Dissemination:** Digital platforms like mobile apps, e-portals, and websites provide timely crop advisories, weather updates, and market information.

2. **Interactive Learning:** Farmers can ask questions, share problems, and receive expert solutions, unlike traditional one-way methods.

3. **Location-Specific Guidance:** GIS-based tools and apps give personalized recommendations for sowing, irrigation, pest control, and fertilization.

4. **Social Media Networks:** Platforms like WhatsApp, Facebook, and YouTube enable peer learning, multimedia tutorials, and awareness campaigns.

5. **Cost-Effective & Efficient:** Reduces travel and repeated field visits for extension workers while reaching large numbers of farmers.

6. **Data-Driven Decisions:** Collects feedback and farm data, helping extension professionals plan better interventions.

Few Mobile Phone based Platforms used in Transfer of Technology

1) Kisan Suvidha (https://kisansuvidha.gov.in)

  Developer: Government of India, Ministry of Agriculture & Farmers' Welfare.

  Purpose: Provides farmers with comprehensive agricultural information to make informed decisions.

  Key Features:

o Weather Forecasts: Localized updates including temperature, rainfall, and humidity.

o Market Prices: Real-time prices from various mandis to help farmers plan crop sales.

o Crop Advisories: Guidance on sowing, irrigation, pest and disease management.

o Plant Protection Measures: Step-by-step recommendations for controlling pests and diseases.

Benefits:

o Farmers receive timely and location-specific information.

o Reduces dependence on extension workers for routine advisories.

2) Plantix (https://plantix.net)

Developer: PEAT GmbH (Germany).

Purpose: Diagnose crop diseases and pests using digital technology.

Key Features:

o Image Recognition: Farmers can upload pictures of affected crops to identify diseases.

o Treatment Recommendations: Provides actionable solutions including fertilizers, pesticides, and cultural practices.

o Community Forum: Farmers can share experiences and solutions.

Benefits:

o Quick identification of problems, reducing crop losses.

o Enables farmers to take informed decisions without waiting for expert visits.

3) e-Krishi

Developer: Various state agricultural departments in collaboration with ICAR.

Purpose: To link farmers with markets and extension knowledge.

Key Features:

o Market Information: Real-time mandi prices, online trading updates.

o Crop Management Guidance: Tips on nutrient management, irrigation, and crop protection.

o Government Schemes: Information on subsidies, insurance, and support programs.

Benefits:

o Helps farmers maximize profit by choosing the best-selling time and market.

o Provides holistic advisory covering crop, market, and policy information.

4) mKisan (https://www.mkisan.gov.in)

Developer: Government of India

Purpose: Provides SMS-based agricultural advisory services to farmers, especially in areas with low internet penetration.

Key Features:

o Short messages (SMS) in local languages covering crop management, weather, and market updates.

o Voice-based Interactive Services (IVR): For illiterate farmers to access information.

Benefits:

o Accessible to all farmers, including those without smartphones.

o Timely advisories reach farmers even in remote areas.

5) Kisan Call Centre (KCC)

Purpose: Provides farmers with instant, expert, and localized agricultural advice through a toll-free call service.

Key Features

Toll-Free Helpline: Farmers can call 1800-180-1551 (or state-specific numbers) for guidance.

Expert Assistance: Queries answered by agriculture graduates, specialists, and extension officers.

Local Language Support: Advisories provided in regional languages.

24×7 Accessibility: Available round-the-clock in some centres.

Database & FAQs: Frequently asked questions stored for faster responses.

Benefits

- Provides timely and reliable expert advice to farmers.

- Enhances adoption of new technologies and improved practices.

- Accessible to farmers in remote areas, reducing the need to travel.

- Supports interactive learning, allowing farmers to clarify doubts directly with experts.

- Cost-effective, reducing consultation and extension costs.

7) e-NAM

Purpose:
A pan-India electronic trading platform that connects existing APMC mandis to create a unified national market for agricultural commodities.

Key Features:

• **Online Trading:** Farmers and traders can sell and buy produce online, increasing

transparency and competition.

• **Real-Time Price Discovery:** Provides live updates on commodity prices across markets,

helping farmers get better rates.

• **Unified Licensing:** Single license valid across all e-NAM integrated markets.

• Quality Testing: Facilities for assaying to ensure fair trade based on quality parameters.

• **Payment Integration**: Direct online payment to farmers' bank accounts, reducing middlemen

intervention.

Benefits:

• **Better Price Realization:** Farmers can choose the most profitable market to sell their

produce.

• **Reduced Transaction Costs:** Eliminates multiple intermediaries and reduces commission

charges.

• **Transparency in Trade:** Digital auctioning ensures fair and open price discovery.

• **Market Access Expansion:** Farmers get access to buyers beyond their local mandis, including across states.

• **Faster Payments:** Direct online transfers ensure timely and secure payment.

• **Improved Quality Standards:** Assaying encourages quality-based trading and better grading of produce.

New and Social Media Platforms in Transfer of Technology

1) WhatsApp and Telegram App

Purpose: Instant messaging platforms for farmer groups, expert consultation, and advisory sharing.

Uses in ToT:

o   Sharing pest/disease alerts, weather updates, and crop management tips.

o   Two-way communication: farmers can ask questions and share local experiences.

o   Forming farmer clusters for collaborative learning.

2) Facebook

Purpose: Social networking platform to create communities and awareness campaigns.

Uses in ToT:

o   Groups for farmers to share success stories and techniques.

o   Live sessions and webinars by agricultural experts.

o   Posting infographics, videos, and updates on modern practices.

3) YouTube

Purpose: Video-sharing platform for visual learning and demonstrations.

Uses in ToT:

o   Uploading tutorial videos on crop management, organic farming, irrigation techniques, etc.

o   Live demonstrations of new technologies for farmer training.

o   Reaches illiterate or semi-literate farmers through visual content.

4) Twitter

Purpose: Microblogging platform for rapid updates and information dissemination.

Uses in ToT:

o   Government agencies and agricultural organizations post weather alerts, market prices, and advisory updates.

o   Farmers can share local experiences or innovations with a wider audience.

5) Instagram

Purpose: Multimedia platform for photo and short-video content.

Uses in ToT:

o Sharing step-by-step visual guidance for farm operations.

o Promoting best practices and success stories among farmers.

o Engaging youth and digital-savvy farmers in learning and adoption.

6) Kisan GPT
Purpose: AI-powered chatbot platform designed to provide instant, personalized agricultural advisory to farmers in their preferred language.

Uses in ToT:

o Answering farmer queries related to crop management, pest control, and weather in real-time.

o Offering region-specific recommendations on seeds, fertilizers, and irrigation.

o Helping farmers make quick, data-driven decisions by simplifying technical information.

o Reducing dependence on physical visits by extension officers, enabling faster knowledge transfer.

7) AgriBazaar

Purpose: Platforms providing market access and advisory services for farmers.

Uses in ToT:

o Sharing crop management tips, pest alerts, and input recommendations.

o Integrates knowledge transfer with economic benefits.

o Supports both learning and marketing needs.

Media Mix Strategies for Effective Agricultural Extension

Agricultural extension is about sharing useful information with farmers so they can improve farming practices and increase their income. But sharing information is not enough—the message should be delivered in a way that farmers can understand, trust, and use**.** For this reason, the media mix becomes important.

Media mix means using a planned combination of different media—both traditional and digital—to spread agricultural information. When the right mix is used, extension workers can reach more farmers, increase awareness, and encourage adoption of new practices.

Understanding Media Mix in Agricultural Extension

The media mix helps decide **which media to use** and **how to use them.** By combining different media, extension professionals can reach a wider audience and make their messages stronger.

The choice of media depends on:

- the objective of the programme,
- the type of farmers (age, education, location), and
- the local environment (infrastructure, culture, literacy)

Types of Media

1. Traditional Media

Traditional media continue to play an important role in agricultural communication.

- **Print (magazines, newspapers, Pamphlets, Folders):** Useful for detailed information about crops, pests, and government schemes. Limitation: less effective if literacy is low.
- **Radio:** Cheap, easy to use, and popular in rural areas. Farm talks, interviews, and advisories build a personal connection.
- **Television:** Combines sound and visuals, making it effective for showing demonstrations of improved practices and technologies.

2. Digital Media

With the spread of internet and mobile phones, digital media has become a powerful tool in agricultural extension.

- **Social media** (Facebook, YouTube, WhatsApp, Instagram, Telegram): Quick sharing, interactive, and allows farmer-to-farmer exchange.
- **Websites and blogs:** Provide detailed information, research updates, and official announcements.
- **Podcasts:** Easy to access on mobiles; explain complex topics in a simple, conversational way.
- **Mobile apps:** Provide information on crop management, weather alerts, market prices, and government schemes directly on farmers' phones.
- **Chatbots:** Automated chat services on apps or websites that answer farmers' queries quickly, anytime.

Digital media complements traditional media by offering speed, interactivity 24X7, and personalized content**.**

3. Community Radio

Community radio is especially useful for local farmers. It broadcasts in local languages and includes farmers' own voices, stories, and experiences. This participatory approach **builds trust** and creates stronger impact. In India, community radio has been effective for promoting organic farming, climate-smart agriculture, and government schemes.

Strategies for Media Mix

1. **Objectives of the Programme**

   The choice of media should match the purpose of communication.

   Example: During a pest outbreak, radio can be used for quick alerts, television for showing demonstrations of control measures, and WhatsApp or social media for sharing real-time updates among farmers.

2. **Audience Characteristics**

   Different groups prefer different media.

   Example: Young farmers are more comfortable using digital platforms such as WhatsApp, YouTube, or mobile apps, while older farmers often depend on traditional media like radio, newspapers, or community meetings.

3. **Local Environment**

   The physical and social conditions of the area influence media choice.

   Example: In low-literacy areas, visual and audio media such as videos, posters, and radio programmes are more effective. In remote areas with weak internet connectivity, radio, SMS, or mobile-based voice messages are more practical.

4. **Budget and Resources**

   The cost of each medium should be considered along with its reach and impact.

   Example: Digital media is relatively low-cost and can reach a large audience quickly, whereas television and radio programmes require higher investment. Therefore, a balanced media mix should aim for cost-effectiveness and wide coverage.

Lecture 14: Communication: meaning and definition; Principles and functions of Communication, Models and barriers in Communication

Communication meaning and definition

What is communication? It is the process of transferring an idea, skill or attitude from one person to another accurately and satisfactorily. In other words, it is the sharing of ideas, attitudes or skills, between two or more persons. The main purpose of communication is to influence the behaviour of people exposed to the communication. Needless to say, a good extension worker should be a good communicator.

Definitions

Hovland defines Communication is the process by which an individual - - the communicator - - transmits stimuli to modify the behavior of other individuals - - communicatees. In other words, the communicator's expression should make the intended impression on the communicatee.

According to *Leagans,* Communication is the process by which two or more people exchange ideas, facts, feelings or impressions in ways that each gains a common understanding of the meaning, intent and use of messages.

The word communication is derived from **Latin** word *'Communis'* which means establishing **'commonness'**. Communication therefore, is a conscious effort to share information, ideas, attitudes, skills etc., with others.

The success of extension worker depends largely on his ability in effective communication. He should, therefore, be familiar with the key elements of the communication process to be fulfilled by each of the elements if the communication is to be successful.

PRINCIPLES OF COMMUNICATION

1. **Clarity**
- o The message should be clear and easily understandable.
- o Example: Use simple language instead of technical jargon.
2. **Conciseness**
- o Communicate only necessary information without unnecessary words.
- o Example: Say "Please submit by tomorrow" instead of "I request you to kindly make the submission by tomorrow if possible."
3. **Completeness**
- o The message should include all relevant facts and details.
- o Example: Mention date, time, and place while giving instructions.

4. **Correctness**

o The message should be factually and grammatically accurate.

o Example: Avoid spelling errors or wrong data.

5. **Courtesy**

o Be polite, respectful, and considerate in your tone.

o Example: Use words like "please" and "thank you."

6. **Consideration (Empathy)**

o Understand the receiver's feelings, background, and point of view.

o Example: Adjust your tone when communicating with subordinates vs. seniors.

7. **Concreteness**

o The message should be specific, definite, and supported with facts.

o Example: Say "Sales increased by 15%" instead of "Sales improved."

8. **Feedback**

o Ensure that the receiver has understood the message correctly.

o Example: Ask for confirmation or response.

9. **Timeliness**

o Communication should take place at the right time.

o Example: Giving instructions before the task begins, not after.

10. **Two-way Process**

Effective communication requires both sending and receiving feedback.

Example: Encourage questions and discussion.

FUNCTIONS OF COMMUNICATION:

Communication has four basic functions-

1. **Information function:** The basic requirement of adapting and adjusting oneself to the environment is information. There must be some information about what is going on in the environment which concerns the people. The getting or giving of information underlies all communication functions, either directly or indirectly.

2**. Command or instructive function:** Those who are hierarchically superior, in the family, society or organization, often initiate communication either for the purpose of informing their subordinates or for the purpose of telling them, what to do, how to do, when to do etc. The command and instructive functions of communication are more observable in formal organizations than in informal organizations.

3. **Influence or persuasive function:** According to Berlo (1960), the sole purpose of communication is to influence people. Persuasive function of communication i.e. to induce people is extremely important for extension in changing their behaviour in the desirable direction.

4. **Integrative function:** A major function of communication is integration or of continuously offsetting any disintegration at the interpersonal or at the organizational level. This helps to maintain individual, societal or organizational stability and identity.

MODELS OF COMMUNICATION

Different models have been developed by writers on communication to illustrate the key elements of the communication process.

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.

 A few important models are illustrated as follows:

 I. ARISTOTLE MODEL: According to Aristotle Model, communication process has three elements

 1. Speaker – Person who speaks

 2. Speech – The speech that the individual produces

3. Audience – The person who listens

```
┌──────────┐       ┌──────────┐       ┌──────────┐
│ Speaker  │ ────▶ │  Speech  │ ────▶ │ Audience │
└──────────┘       └──────────┘       └──────────┘
```

II. SHANNON-WEAVER MODEL (1949): model is consistent with Aristotle's proposition. According to them, the ingredients of communication are-

```
┌────────┐    ┌─────────────┐    ┌────────┐    ┌──────────┐    ┌─────────────┐
│ Source │ ─▶ │ Transmitter │ ─▶ │ Signal │ ─▶ │ Receiver │ ─▶ │ Destination │
└────────┘    └─────────────┘    └────────┘    └──────────┘    └─────────────┘
```

 Compared with the Aristotelian model, the source is the speaker, the signal is the speech and the destination is the audience, plus two added ingredients, a transmitter which sends out the source's message and a receiver which catches the message for the destination.

III. BERLO'S MODEL (1960) OF COMMUNICATION PROCESS CONSISTS OF :

```
┌──────────────┐      ┌─────────┐      ┌─────────┐      ┌─────────┐      ┌─────────┐
│Communication │ ───► │ Encoder │ ───► │ Message │ ───► │ Channel │ ───► │ Decoder │
│source        │      └─────────┘      └─────────┘      └─────────┘      └─────────┘
└──────────────┘                                                              │
                                                                              ▼
                                                                 ┌──────────────┐
                                                                 │Communication │
                                                                 │receiver      │
                                                                 └──────────────┘
```
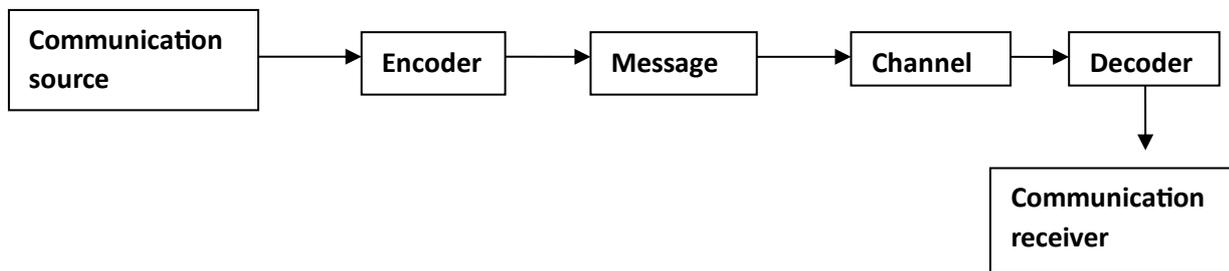
Code is a system of signals for communication. Encode means to put the message into code or cipher. Channel means the medium through which the signals move, the decoder means which converts the message in the code into ordinary language which may be easily understood.
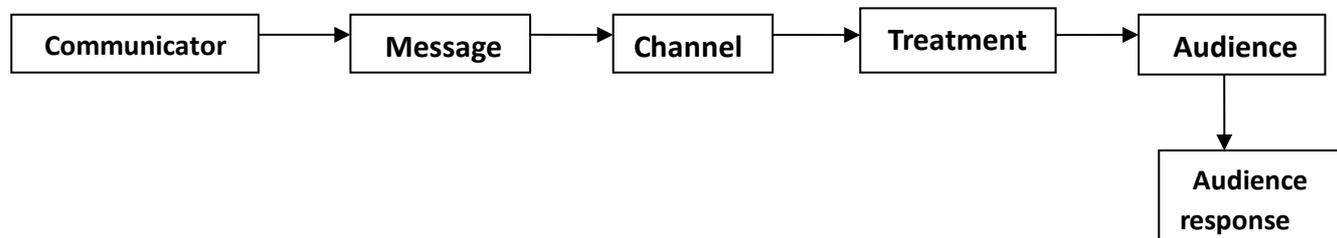
He further elaborated that all human communication has some source, some person or group of persons with a purpose. The purpose of the source has to be expressed in the form of message. The communication encoder is responsible for taking the ideas of the source and putting them in a code, expressing the source's purpose in the form of a message. A channel is a medium, a carrier of message. For communication to occur there must be somebody at the other end, who can be called the communication receiver, the target of the communication.

IV. SCHRAMM (1961), MODEL OF COMMUNICATION PROCESS INVOLVES

```
┌─────────┐    ┌─────────┐    ┌────────┐    ┌─────────┐    ┌────────────┐
│ Source  │──► │ Encoder │──► │ Signal │──► │ Decoder │──► │ Destination│
└─────────┘    └─────────┘    └────────┘    └─────────┘    └────────────┘
```

This model of communication is particularly relevant for the mass media. In human communication it is most important whether the people can properly encode or decode the signal i.e., message and how they interpret it in their own situations.

V. LEAGANS (1963) OF COMMUNICATION PROCESS has the following elements

```
┌─────────────┐    ┌─────────┐    ┌─────────┐    ┌───────────┐    ┌──────────┐
│ Communicator│──► │ Message │──► │ Channel │──► │ Treatment │──► │ Audience │
└─────────────┘    └─────────┘    └─────────┘    └───────────┘    └──────────┘
                                                                       │
                                                                       ▼
                                                                 ┌──────────┐
                                                                 │ Audience │
                                                                 │ response │
                                                                 └──────────┘
```

The task of communication, according to him, is to provide powerful incentives for change. Success at this task requires thorough understanding of the six elements of communication, a skilful communicator sending useful message through proper channel, effectively treated, to an appropriate audience that responds as desired.

Telegram - https://t.me/AgroMind

VI. ROGERS AND SHOEMAKER (1971) THOUGHT OF COMMUNICATION PROCESS IN TERMS OF S-M-C-R-E MODEL, THE COMPONENTS OF WHICH ARE

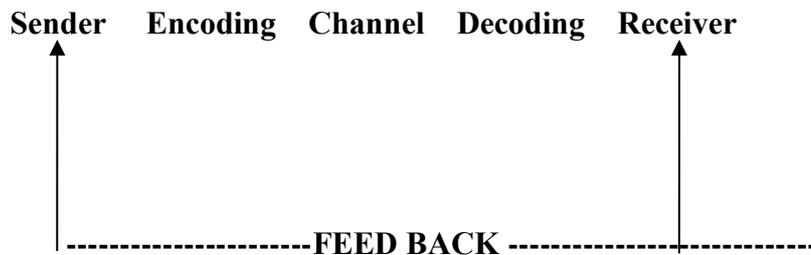Source → Message → Channel → Receiver → Effects

According to them a source (S) sends a message (M) via certain channels (C) to the receiving individual (R), which cause some effects (E) i.e. changing the existing behavior pattern of the receiver.

Communication in extension may also be thought of as two-way stimulus-response situation in which the necessary stimulus is provided by the communicator, the extension agent, in the form of a message, which produces certain response on the audience, the farmers and vice-versa. A favourable response by the audience reinforces learning.

VII. LITTERER'S MODEL OF COMMUNICATION PROCESS

Noise

| Source-Encoding-Transmission | Detection- decoding- Selection |

Channel
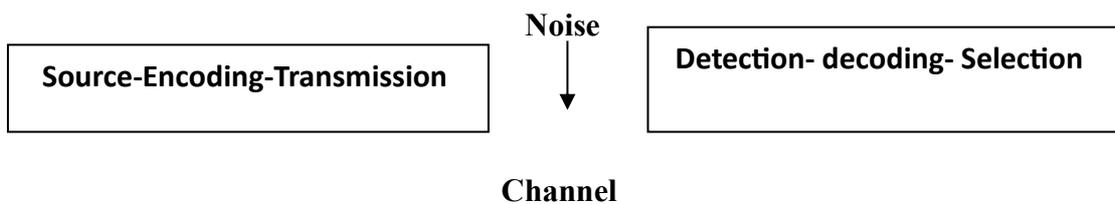
VIII.WESTLEY-MACLEAN'S MODEL OF COMMUNICATION PROCESS:

Sender   Encoding   Channel   Decoding   Receiver

----------------------FEED BACK ----------------------------

BARRIERS/ PROBLEMS IN COMMUNICATION

1. **Individual Level**

   Problems may arise when a person cannot fulfill their own goals or needs. These difficulties often come from the adequacy and appropriateness of their own strategies or technical communication skills.

2. **Interpersonal Level**

   Communication problems can occur due to the relative inadequacy or inappropriateness of the communication skills of one or more participants. In a two-person interaction, a problem may be caused by either person or by both.

3. **Situational or Contextual Level**

    Sometimes, a sender or receiver may fail to achieve their intended outcomes for reasons beyond skill or clarity. Even if the communication itself is successful, the consequences experienced by the receiver may be negative, preventing the sender from achieving their intended effect.

4. **System or Organizational Level**

    A communication system linking two or more people may vary in efficiency, cost, or both. Problems often arise because the criteria used to assess the system's performance are inappropriate. At the organizational level, problems may result from incompatibilities between different communication systems, especially at their interfaces. These incompatibilities can appear between different levels within the organization or system.

These problems of communication process can be classified by various methods. Some of these methods are:

I. According to phases of communication:

II. According to various types of problems.

III. According to nature of problems

IV. Other classified problems

I a) RELATING TO THE COMMUNICATOR:

1) Ineffective environment: The environment created by the communicator (Extension worker) influences his effectiveness. The physical facilities, air of friendliness, respect of other's point of view, recognition of accomplishments of other, permissiveness and rapport in general, are all important ingredients of a climate which is conducive to effective communication.

2) Disorganized efforts to communicate: to make sense, the communication effort must be organized according to some specific form or pattern.

3) Standard of correctness: This involves the use of correct words or other symbols, correct logic and correct content or facts.

4) Standard of social responsibilities: This infers that when one communicates, one assumes responsibility for effect of ones communication on the respondents and the society.

5) Cultural values and social organization: Cultural values and social organization are determinants of communication. For effective communication, the communicator must possess knowledge of the cultural values of his listeners.

6) Inaccurate symbols: The system of symbols used to represent ideas, objects, or concepts must be accurate and used skillfully. The crucial point in the use of symbols to convey ideas is

to select those that accurately represent the idea to be conveyed and are understood by the audience. Symbols are meaningful to a person only when he understands what they stand for.

7) Wrong concept of the communication process: A common mistake communicated by the communicator is the identification of the part with the whole or the parts fallacy. A successful communication programme of rural development is not a single unit. It requires a series of unit acts. The way one thinks about communication will influence its quality.

b) RELATING TO TRANSMISSION OF MESSAGE: Many obstructions can enter at the interpretation level. These are often referred to as, 'noise', that is, some obstruction that prevents the message from being heard by or carried over clearly to, the audience. 'Noise' emerges from a wide range of sources and causes which effect the interpretation of the message.

1) Wrong handling of the channel: It can be a meeting, tour, radio programme, or one of the other channels, if is not used according to the correct procedure and techniques, its potential for carrying a message is dissipated.

2) Wrong selection of channels: All channels are not equally useful in attaining a specific objective. Failure to select channels appropriate to the objective of a communicator will interrupt the interpretation of the message, in the manner in which it is desired, by the intended audience.

3) Physical distraction: Failure to avoid physical distraction often obstructs successful message sending.

4) Use of inadequate channels in parallel: The more channels a communicator uses in parallel, or at about the same time, the more chances he has of the message getting through and being properly received.

c) RELATING TO THE RECEIVER:

1) Attention of the listeners: There is an unfortunate tendency not to give undivided attention to the communicator. This is a powerful obstruction that prevents the message from reaching its desired destination.

2) Problem of cooperation, participation and involvement: Both the communicator and the receiver must be brought into the act. Hence, the listener must work a little hard. Learning is an active process on the part of the listener and unless the respondent is on the same wave length, the character of what is sent out hardly governs the communication process. Thus, it takes two to make communication.

3) Problem of Homogeneity: The more homogeneous an audience, the greater the chances of successful communication. Likewise, the more a communicator knows about his audience and can pin-point its characteristics the more likely he is to make an impact.

4) Attitude of the audience towards the communicator: An important factor in the effectiveness of communication is the attitude of the audience towards the communicator. It is a function of the communicator to make their attitude favourable. Indirect data on this problem comes from studies of 'prestige' in which subjects are asked to indicate their agreement or disagreement with statements which are attributed to different individuals.

II. According to various types of problems:

These are (1) Technical problems; (2) Semantic problems; and (3) Influential problems. 1) Technical problems: These are problems concerned with the accuracy of the transference of information from sender to receiver. Certain things that are not intended by the information source are added to the signal. These unwanted additions may be distortions in the shape or shading of a picture or errors in transmission. All these changes in the signal are called 'noise'.

2) Semantic problems: Problems regarding the interpretation of meaning by the receiver as compared to the intended meaning of the sender. This is a very deep and involved situation even if one is dealing only with the relatively simple problems of communication through speech.

3) Influential problems: The problems of influence or effectiveness are concerned with the success with which the meaning is conveyed to the receiver leads to the desired conduct on his part. It may seem, at first glance, undesirably narrow to imply that the purpose of all communication is to influence the conduct of the receiver.

III. According to nature of problems:

1) **Physical problems:** The possible disorders affecting communication fall generally into the following categories.   Speech and voice defects; anxiety-tension reaction such as those involved in stage fright, or feeling of inferiority, which noticeably affect speech, paralysis, disease or characteristics of physical appearance which interfere with expressive bodily action or which tend to call forth unfavourable reactions on the part of the listeners; lack of skill in the use of background or staging techniques, together with defects, such as radio station in the means and conditions of transmission.

2) **Psychological:** These psychological difficulties are, in part, a function of the very nature of language; in part, they are due to the emotional characteristics, and mental limitations of human beings. These general considerations concerning the psychological nature of language are the background against which more specific difficulties in communication can be understood. These specific obstacles merit special attention: (i) the failure to refer language to experience

and reality, (ii) the inability to transcend personal experience in inter-group communication, (iii) stereotypes, the assimilation of material to familiar frames of reference, (iv) the confusion of precept and concept, ramification and personification.

3) **Cultural:** Cultural differences pose serious barriers in the communication process. Within this expanding field of activity, we may distinguish three small questions: (i) the way in which communication systems are related in given cultural values, (ii) the particular ethical problems of responsibility raised by our current use of communication systems and (iii) problems of communication when cultural boundaries have to be transcended.

IV. **Other classified problems:** 1) **Entropy and redundancy:** Information is defined in terms of its ability to reduce the uncertainty or disorganization of a communication situation at the receiving end. **Entropy simply means the uncertainty or disorganization of a system,** redundancy is the opposite.

2) The idea of noise is another information theory concept which intuitively makes sense in the study of communication. **Noise is anything in the channel other than what the communicator puts there.**

3) Error can be reduced as much as desired by keeping the rate of transmission below the total capacity of the channel. If the channel is overloaded, errors increase very swiftly.

4) One of the major problems of communication is to find way of controlling the interpretation which an audience will place upon events and notions.

Coupling: Is another point at which information theory comes very close to our way of thinking about human communication. We are accustomed to think of gate keepers. Every system that couple two other systems is a gate-keeper. How likely are they to pass on the information that comes to them? How faithfully are they likely to reproduce it? This all depends upon their gatekeeper.

Message Distortion: When the transmitted message by the communicator is not reproduced by the receiver in a pattern that corresponds to its original form, it is distortion.

According to Kirk (1963), the distortion of information may be of three fundamentally different kinds. 1)Systematic or stretch distortion, 2) Fog distortion and 3) Mirage distortion.

1)SYSTEMATIC or STRETCH - Some part of information will be given too much importance. No information is lost rather it is changed or recorded.

2) FOG - Some part of the information (information is lost) will be masked away.

3) MIRAGE - Some part of information (extra and unwanted) will be added as an extinct.

INNOVATION: It is an idea, practice or object that is perceived as new by an individual or other unit of adoption.

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

"Diffusion process is the spread of a new idea from its source of invention or creation to its ultimate users or adopters". These definitions indicate that "diffusion is a process related to adoption of an innovation in an entire social system such as a village or block etc., while adoption is a sequence of thoughts and actions which an individual goes through, before he finally adopts a new idea". Hence Diffusion is **SOCIAL PROCESS**

ADOPTION: It is a decision to make full use of an innovation as a best course of action available. According to Rogers, "**adoption process is the mental process** through which an individual passes from hearing about an innovation to final adoption"

Hence adoption is **INDIVIDUAL PROCESS** and also **MENTAL PROCESS**

CONCEPTS RELATED 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.x.: 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. ADOPTION PERIOD: The period that takes from awareness stage to the adoption stage by the individual.

7**. 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.

8. PERSONAL LOCALITE: The person who is directly influencing the farmers decisions within the system i.e. neighbourers, friends, local leaders, peers etc.

9**. PERSONAL COSMOPOLITE:** The persons who are directly influencing the farmers decisions and belong to outside the system e.g. Extension agents

10. IMPERSONAL COSMOPOLITE: Indirectly Influencing the farmers decisions e.g Mass media

FIVE Stage Model of Adoption Process

1.Awareness: The individual learns of the existence of the new idea but lacks information about it. At this stage an individual becomes aware of some new idea such as hybrid maize seed or new pesticide. For instance, he may know only the name and may not know what the idea or product is ,what it will do or how it will work.

2. Interest: The individual develops interest in the innovation and seeks additional information about it. At the interest stage, a person wants more information about the idea or product. He wants to know what it is, how it works and what its potentialities are. He may say to himself that this might help him increase his income, or help him control insects or diseases or improve farming or home life in some other way.

3. **Evaluation**: The individual makes mental application of the new idea to the present and anticipated future situations and decides whether or not to try it. He applies the information obtained in the previous stages to his own situation. At this stage, the individual judges the worth of the innovation. The person makes an assessment whether the idea is applicable to own situation, and if applied what would be the result.

4. Trial: The individual actually applies the new idea on a small scale in order to determine its utility in own situation. If he decides that the idea has possibilities for him he will try it. The trial stage is characterized by small-scale experimental use.

Trial may be considered as the practical evaluation of the innovation. It provides evidence of the advantages of the innovation. Being satisfied with the trial and considering the pros and

cons of the situation , the individual takes a decision and applies the innovation in a scale appropriate to own situation on a continued basis.

5. Adoption: The individual uses the new idea continuously on a full scale. This final stage in the process is characterized by large-scale, continued use of the idea, and most of all, by satisfaction with the idea.

These five stages are not necessarily a rigid pattern which people follow. These stages are influenced by cultural differences and social factors as well as by the kind of practice, place and person. At any stage the recommendation can be thrown off. There can be jumping from one stage to another. If the farmers have confidence in the extension worker, and his recommendations, they may jump from "evaluation" to "adoption" stage.

Further, it should be remembered that there is no complete agreement as to the number of stages in the adoption process, although there is general consensus on the existence of stages and that adoption is seldom an impulse decision.

Singh and Pareek have developed a seven stage model of the adoption process –need, awareness, interest, deliberation, trial, evaluation and adoption.

SEVEN STAGE ADOPTION MODEL: (SINGH & PAREEK)

Adoption Stages and Information Sources (in India)

Adoption Stages	Important media or sources
1. Need: This is a stage when an individual wishes to change his existing practices, Express dissatisfaction and develops a compromise.	Village level change agent and to some extent mass media.
2. Awareness: The individual just comes to know about an innovation which is related to his need or arouses need without knowing the details of it. The person becomes acquainted with broad features of innovation and knows the source of availability.	Village level change agent, mass media and other farmers.
3. Interest: **He makes an attempt to knowmore about the innovation**. Asks extension agents / friends and seeks information and sees the innovation.	Formal sources as extension agency, and other farmers.
4. Deliberation: This is a stage of deliberation and mental evaluation. The individual mentally examines the possibility of application of the innovation under one condition. He seeks advice of opinion leaders, observes the performance at different places and discusses with family members. The individual then takes a decision to try out or reject the idea.	Informal personal sources including family members.

5. Trial: An individual uses an innovation in part or sometimes in full. The individual applies the practice on a limited scale to observe the performance under own conditions.	No communication for simple substitutive practices. For complex or new practices, change agent and fellow farmers.
6. Evaluation: The individual evaluates the performance of the innovation. The individual observes the performance of an innovation on various dimensions. Collects data on the performance of an innovation on other's situations. Compares the performance of the new with the old one and figures out changes which will be necessary if innovation is to be adopted. Calculates input output, risks, uncertainties etc.,	Fellow farmers and neighbours.
7. Adoption: It is a decision to use the practices on continued basis. The individual extends use of innovation in terms of time and extent.	Self – experience gained at the trial stage.

INNOVATION: It is an idea, practice or object that is perceived as new by an individual or other unit of adoption.

INNOVATIVENESS: It is the degree to which an individual is relatively earlier in adopting new ideas than other members of a system.

Perceived Attributes or Characteristics of Innovation

Attributes are qualities, characteristics or traits possessed by an object. An innovation has some qualities or characteristics. 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

a.**Situational compatibility :** When a new crop variety suits the agro-climatic condition of the farmer, it indicates situational compatibility. and

b.**Cultural 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, cross breed 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 a farm machinery, requires large investment and can not be tried in parts. The minikit 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 & the leaves turn green, whereas, the effects of phosphate and potash fertilizers are not so evident. Understanding the soil test based fertilizers application by the farmers, which is more profitable in the long run, requires high level comprehension, which may 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). **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 output due to failure of agricultural innovations to achieve expected production goals, can result in loss of meagre 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 that the attributes - relative advantage, compatibility, trialability, observability 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.**
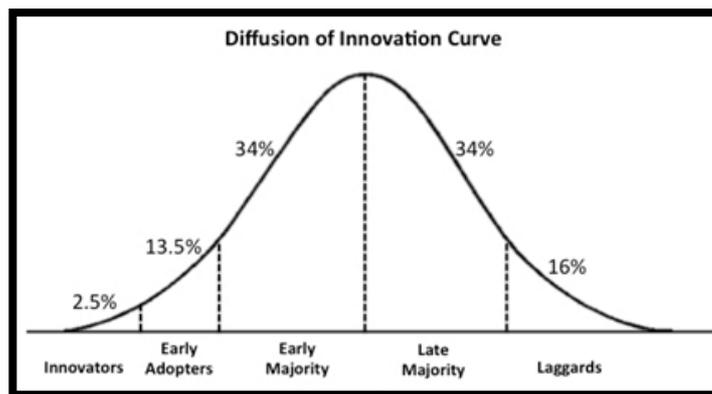
Adopter categories and their characteristics

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. Adoption behaviour is ability of the farmers to adopt a new technology.

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. 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 percent of the individuals who are the first to adopt an innovation and are known as **innovators**. The next 13.5 percent 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 percent 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 percent 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 the Figure given below.

Fig 1: Adopter categories on the basis of Innovation

Classification of adopter categories & their characteristics

FIVE ADOPTER CATEGORIES: basis is "innovativeness"

1. INNOVATORS.
- They are **venturesome** and first to adopt a new idea, much ahead of other members in the community.
- They are generally very few in number.
- They may deviate from the social norm and may be viewed as deviants by others.
- They are cosmopolite and their sphere of influence and activity may go beyond the community boundaries.
- They are mentally alert, have good contact with cosmopolite sources of information and actively seek new ideas.
- They are oriented to take risk, have large size enterprise and have the financial resource to absorb any possible loss due to adoption of the innovation.
- They are generally literate and have more prestige in the community.

- The innovators have friendship networks that extend outside their local system.
- They are oriented to develop good contact with the research station and high level extension functionaries.

2. **EARLY ADOPTERS—(ROLE MODELS)**
   - They are **localities and respectful** are a more integrated part of the community.
   - 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.
   - Early adopters are literate,
   - Have large size enterprise,
   - High income,
   - More participative and maintain good contact with cosmopolite sources of information.
   - They do not test untried ideas, but quickest to use tried ideas in their own situations.

3. **EARLY MAJORITY (DELIBERATE)**
   - 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.
   - They do not hold leadership position in adoption, but actively participate in extension programmes like training, demonstration, farmers' day, study tour etc.
   - They are slightly above average in education, social and economic status, and experience about the enterprise.
   - Because of their limited resources, they cannot take hasty or poor decisions.
   - They have less contact with the cosmopolite sources of information.
   - They are active localities and associate mainly with the people of their own community.
   - They are the **'neighbours and friends'** from whom majority of the members of the community seek information about innovations.

4. **LATE MAJORITY**
   - They are **cautious and sceptical**, 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.
   - They have low level of education,
   - Low level of participation and depend mostly on localite sources of information.

5. **LAGGARDS**

- They are **traditional** and the last to adopt an innovation. 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.

- They are mostly **localities a**nd primarily interact with those who have traditional values.

- They tend to be frankly suspicious of innovations, innovators and change agents.

- A fast moving world is shocking to them and they find it difficult to adjust with it.

- They do not have opinion leadership and is almost a forgotten mass of people in the community.

- They have little or no education, least participation and hardly have any contact with the outside world.

- These people are likely to belong to the backward classes, may be working as share-croppers 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 16: Agriculture Journalism

AGRICULTURAL JOURNALISM

According to Webster's Dictionary, Journalism means "the collection and editing of material of current interest for presentation, publication or broadcast".

According to Chamber's 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: `

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 value

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