



# SMALL SCALE IRRIGATION DEVELOPMENT LEVEL-I

## Model TTLM

### Learning Guide-11

**Unit of competency:** Develop Understanding of Basic Irrigation Extension

**Module Title:** Developing Understanding of Basic Irrigation Extension

**LG code:** AGR SSI1M 15 Lo1-Lo3

**TTLM Code:** AGR SSI1 TTLM 1218V2

**Nominal Duration:** 25 Hours

SSID TTLM, Version 2	Date: Dec 2018	Page 1 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

This learning guide is developed to provide you the necessary information regarding the following learning out comes, content coverage and topics:

1. Define the term extension
2. Understand Irrigation Extension Approaches
3. Identify irrigation extension models, methods and principles

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, upon completion of this Learning Guide, you will be able to:

- Identify History of extension in Ethiopia
- Introduce extension
- Explain objectives and goals of extension
- Explain role of Extension in Irrigation Agriculture
- Introduce participatory concept in irrigation development and management(PIDM)
- Understand irrigation based on PIDM approach
- Identify Irrigation Extension work approach for males and females
- Perform Irrigation Extension work methods by considering male and female
- Determine Irrigation extension work principles

### Learning Activities

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the “Information Sheets”
3. Accomplish the “Self-checks”
4. If you earned a **satisfactory** evaluation proceed to “the next information sheet However, if your rating is **unsatisfactory**, see your teacher for further instructions or go back to Learning Activity
5. Submit your accomplished Self-check. This will form part of your training portfolio (if necessary)

## INTRODUCTION

### What is Extension?

Extension has different definition some are the following:

- ❖ The word most often used to describe rural development fieldwork is ‘extension’; and it is concerned with methods and techniques used in rural development.
- ❖ Extension is an informal process directed toward the rural population. This process offers advice and information to help them to solve their problems. Extension also aims to increase the efficiency of the farm family.
- ❖ The objective of extension is to change farmer’s outlook toward their difficulties.
- ❖ Extension is not just concerned with physical and economic achievements but also with the development of rural people, themselves.
- ❖ Extension is a process of working with rural people in order to improve their livelihoods.
- ❖ This involves helping farmers to improve the productivity of their agriculture and also developing their abilities to direct their own future development.
- ❖ Extension is a means by which new knowledge and idea are introduced in to rural areas.
- ❖ For the need of services rather than those in the field of agriculture was realized. Extension is critically important in order to bring about change and improve the lives of farmers and their families.

There are other definitions given by different authors such as:

- ❖ P.Oakley and Cgarforth “Agricultural extension” offers technical advice on agriculture to farmers and also supplies them with the necessary inputs and services to support their agricultural production.
- ❖ John Russell“Agricultural extension can be defined as the provision of knowledge and skills necessary for farmers to be able to adopt and apply more efficient crop and animal production methods to improve their productivity and living standards.”
- ❖ B.E Swanson and J.B. Claar: “extension is an education process, which has as it goal the communication of useful information to people, then helping them to learn how to use it to build a better life for themselves, their families and their communities.”
- ❖ A.W.Van den Ban and H.S. Hawkins: “Extension is the conscious communication to help people form sound opinions and made goal decisions.”

### Alternatives for the term ‘extension.

SSID TTLM, Version 2	Date: Dec 2018	Page 3 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

- ❖ *Voorlichting (Dutch)* - lighting the pathway ahead to help people find their way
- ❖ *Beratury (Germany)* - an expert can give advice on the best way to reach a goal leaving responsibility to the individual.
- ❖ *Vulgarization* - Simplifying the message for the common man (French)
- ❖ *Capacitacion*- improving people’s skills (Spanish)

### 1.1 Identifying History of extension in Ethiopia and ways ofIntroducing extension

**Agricultural Extension in the World** The term extension was derived from the practice of British universities of having one educational program within the premises of the university and another away from the university buildings. The program conducted outside the university was described as ‘‘extension education’’. The expression connoted an extension of knowledge from the university to places and people far beyond.

**The term ‘‘Extension Education’’ was first introduced** in 1873 by Cambridge University in England to describe a particular system dedicated to the dissemination of knowledge to rural people where they lived and worked. Within a short time, the idea had spread to other parts of Britain, Europe and North America.

Extension work is an out of school system of education in which adults and young people learn by doing. It is a partnership between the government, the land-grant institutions, and the people, which provides services and education designed to meet the needs of the people (Kelsey and Hearne, 1966).

The term ‘‘Agricultural Extension’’ was only adopted in 1914 when the United States Federal Smith-Lever Act of 1914 formalized a nationwide cooperative federal-state-county programed gave operational responsibility for this to the land grant colleges and Universities.

In the beginning, agricultural extension was concerned primarily with the improvement of agriculture, using conventional teaching methods. As time went on, home economics, youth programs and rural community resource development were included. Agricultural extension spread to tropical Africa, the Caribbean, Asia and Latin America following the involvement of the United States of America (USA) in bilateral AID programs after the Second World War. Agricultural extension now has three main facets:

1. As a discipline it deals with the behavior of people. It is educational in content and purposive in approach. Whether the content consists of agriculture, medicine (preventive and social medicine), public health, education, engineering, etc, extension is always

SSID TTLM, Version 2	Date: Dec 2018	Page 4 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

dependent on a firm knowledge and expertise in sociology, anthropology, psychology, administration, economics, communication arts, political science and so on.

2. As a process, agricultural extension seeks to influence the behavior of rural people through education and information exchange. The aim is to assist them in gaining a livelihood, improving the physical and psychological level of living of rural families, and fostering rural community welfare. The success of the extension process requires an atmosphere of mutual trust, helpfulness and respect on the part of both extension worker and rural people.
3. As a service, agricultural extension makes the government ministry, the university or voluntary agency as useful as possible to the people who support it through taxes and donations.

The concept that the broader function of extension work is to help people to solve their own problems through the application of scientific knowledge is now generally accepted.

**History of extension in Ethiopia:** In mid 1990s an agricultural extension package program was introduced as the main development strategy of the country and has become a pillar for government efforts to simultaneously develop the two economic twins – agriculture and industry – underpinning the government’s agriculture and industrial development policy, otherwise known as agriculture development-led industrialization. The extension package approach has been dubbed as “new agricultural extension package program” (though the word ‘new’ might not as such reflect a qualitatively different approach from its predecessors).

#### **Extension before 1991 and after 1991**

The examples given below are taken from a number of books on extension published over a period of more than 50 years:

- 1949: The central task of extension is to help rural families help themselves by applying science, whether physical or social, to the daily routines of farming, homemaking, and family and community living (Brunner.E and Husin.P, 1949).
- 1965: Agricultural extension has been described as a system of out-of-school education for rural people (Saville. A, 1965).

SSID TTLM, Version 2	Date: Dec 2018	Page 5 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

- 1966: Extension personnel have the task of bringing scientific knowledge to farm families in the farms and homes. The object of the task is to improve the efficiency of agriculture.
- 1973: Extension is a service or system which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their standard of living and lifting social and educational standards.
- 1974: Extension involves the conscious use of communication of information to help people form sound opinions and make good decisions.
- 1982: Agricultural Extension: Assistance to farmers to help them identify and analyze their production problems and become aware of the opportunities for improvement.
- 1988: Extension is a professional communication intervention deployed by an institution to induce change in voluntary behaviors with a presumed public or collective utility.
- 1997: Extension is the organized exchange of information and the deliberate transfer of skills.
- 1999: The essence of agricultural extension is to facilitate interplay and nurture synergies within a total information system involving agricultural research, agricultural education and a vast complex of information-providing businesses.
- 2004: Extension is a series of embedded communicative interventions that are meant, among other goals, to develop and/or induce innovations which help to resolve (usually multi-actor) problematic situations.
- 2006: Extension is the process of enabling change in individuals, communities and industries involved in the primary industry sector and in natural resource management (SELN, 2006).

## **1.2 Reason of explaining extension and role of agricultural irrigation extension**

➤ Reason why extension explained? To accomplish the objective and goal of extension.

Why Extension? In reality it is seen that what was applicable in the past is obsolete at present and likewise it can be said that techniques and methods prevalent at present cannot be applied in future. The nature of problem is changing day by day, therefore, in order to scientifically tackle new problems, it is necessary that there should be such an institution,

SSID TTLM, Version 2	Date: Dec 2018	Page 6 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

which should act as a bridge between scientists and farmers; it should introduce new techniques to the farmers and address the problems of farmers to the scientists.

### **Research Centre ◀▶ Extension Personnel ▶◀ Problems of People.**

Such an institution, which mediates between farmers and scientists was established and is called “Extension system”. The people working in this institution are called “Extension personnel”

#### **✚ The objective of agricultural irrigation extension are as follows**

- ✓ To provide knowledge and help for better management of irrigation farms and increase incomes.
- ✓ To encourage the farmers to grow his own food, eat well and live well.
- ✓ To promote better social, natural recreational intellectual and spiritual file among the people.
- ✓ To build rural citizens who are:
  - Proud of their occupation
  - Independent in thinking.
  - Constructive in outlook.
  - capable, efficient and self-reliant in character
  - having love of home and country m their heart

#### **✚ The goal of agricultural irrigation extension are as follows**

Most extension organizations try to achieve several goals. However, the emphasis on the various goals differs from country to country. An indication of this variation is the words used for extension in different languages.

The goals of agriculture irrigation extension include:

- ✓ The transfer of knowledge from agricultural research to the fanners. This is stressed in the French word vulgarization and in the term 'extension';
- ✓ Advising farmers on the decisions they have to make, sometimes by recommending a certain decision to be taken, sometimes by helping them to acquire sufficient insight

SSID TTLM, Version 2	Date: Dec 2018	Page 7 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

into the consequences of the alternatives from among which they can choose in order that they can make their own decision.

- ✓ Education, helping farmers to make a decision in such a way that they are able to make similar decisions themselves in the future. This is implied in the US term 'extension education';
- ✓ Enabling farmers to find their own way by helping them to clarify their goals and the possibilities which they have, together with other farmers, to realize these goals.
- ✓ Stimulating desirable agricultural developments as is implied by the Austrian word Forde rung (furthering) and the Korean expression 'rural guidance'.

**✚ The role of agricultural irrigation extension are as follows**

- ✓ Increasing efficiency in agricultural production.
- ✓ Disseminating technology
- ✓ Creating awareness
- ✓ Participating member and target group
- ✓ Increasing efficiency in marketing, distribution and utilization of agricultural inputs and outputs
- ✓ Conservation, development and use of natural resources.
- ✓ Proper farm and home management
- ✓ Better family living.
- ✓ Community and rural development.
- ✓ Improving public affairs for all round development

<b>Self-Check 1</b>	<b>Written Test</b>
---------------------	---------------------

**Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Directions:** Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. What is extension education? (5)
2. List the main facets of agricultural extension? (5)
3. List the objective and roles of agricultural irrigation extension? (10)
4. What are the goal of agricultural irrigation extension? (5)

SSID TTLM, Version 2	Date: Dec 2018	<b>Page 8 of 24</b>
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	



**Note: Satisfactory rating –12.5 points and above**

**Unsatisfactory - below 12.5 points**

You can ask your teacher for the copy of the correct answer.

<b>Information Sheet 2</b>	<b>Understand Irrigation Extension Approaches</b>
----------------------------	---

## **2.1. PIDM (Participatory Irrigation Development and Management Approach) is introduced**

**Participatory irrigation development program (PID):** The program's goal is to improve the food security, nutrition and incomes of poor rural households by developing irrigation schemes for small-scale farmers in four states of Ethiopia. The program targets poor rural households in high-density, drought-prone and food-insecure districts of the highlands. Many of the households cultivate plots of less than 1 hectare. Specific targets include households headed by women, unemployed youth and landless people.

The program represents an important opportunity to reform small-scale irrigation development approaches and practices in Ethiopia. The schemes it developed provide a model to be scaled up and replicated throughout the country. To ensure sustainability and the full participation of local community members, farmers own and manage the irrigation systems through their own water users' associations. The program also trains participants to take charge of the development process and encourages women to join the decision-making bodies of water users' associations. Other objectives are to improve access roads in areas where there are irrigation systems, and to raise agricultural productivity by improving farming practices, supporting the establishment of home vegetable gardens and strengthening agricultural support services.

The initial objectives of the Participatory Irrigation Development Program were to:

- (i) increase the availability and reliability of water through improved low-cost systems of water control;
- (ii) raise agricultural productivity through better extension services; and
- (iii) **Build** institutional capacity with the long-term vision of realizing the potential of smallholder irrigation development.

SSID TTLM, Version 2	Date: Dec 2018	Page 9 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

**Participatory irrigation management (PIM):** refers to the participation of irrigation users - the farmers - in the management of the irrigation system. It does not refer only to the tertiary level of management, nor does it refer to merely consulting with farmers. The concept of PIM refers to management by irrigation users at all levels of the system and in all aspects of management. This is the simplicity of PIM, and also its flexibility. We are not suggesting that one style of PIM is appropriate for every situation. But we are suggesting that management by the irrigation users, rather than by a government agency, is often the best solution. Instead of an initial assumption that irrigation management requires a strong public sector role, the PIM approach starts with the assumption that the irrigation users themselves are best suited to manage their own water. “user“

We may distinguish three basic types of irrigation management. One type is by the public sector, such as an irrigation department. Another type is by a private entity, such as a water company selling water from a tube well. A third type is through a user's organization, such as a water user association. Management control by the users can be called "users'" - a particular form of privatization where the private "owner" is not an individual but a group of irrigation users who share a common interest in the management of their irrigation resource. In the cases of irrigation users' with which we are familiar, this user group is established as a not-for-profit entity. "User" is the process whereby management is transferred from a public sector agency to an association of users. A new role for Irrigation Agencies When irrigation management is in the hands of the users, the government continues to play a vital role in regulating the irrigation sector, and providing management support services. The division of management responsibilities between government and the water users can be visualized as a continuum. In some countries, the government agency manages the irrigation distribution system down to the very smallest canals.

➤ **What kind of PIM**

Participation refers to a continuum of involvement in management decisions. One meaning of "PIM" is that the irrigation users have total control and responsibility over the operations and maintenance of part or all of the irrigation system. Another meaning of PIM may be that a farmer council plays an advisory role, with real power remaining in the hands of the irrigation agency.

➤ **The rationale for participation**

SSID TTLM, Version 2	Date: Dec 2018	Page 10 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

Why participation? Another question might also be asked: "Why should the government involved in irrigation? "Clearly, there are investments that only the government can make, or where the government has a definite advantage wise farmers, even very well organized associations of farmers.

- **Farmers have some *comparative advantages*.** They have direct incentives to manage irrigation water in a productive and sustainable manner; they offer an on-the-ground presence that even the most dedicated offsite agency staff cannot equal, and they have an intimate knowledge about their fellow irrigators. The logic of the PIM approach is that both governments and farmers have separate comparative advantages.
- **Improved design, construction, and O&M.** When farmers are directly involved in the design process, whether for new systems or rehabilitation of old ones, they will provide useful design input and they will come away with an understanding of the design logic of the system they will be managing. During construction, farmer input has the functions of quality control (ensuring design standards are met) cost savings (through guarding against needless spending, and substituting some costs with farmers' own labor), and construction knowledge. Knowing how the system is constructed will help in repairs later on. The advantage of farmer inputs into O&M, either as direct managers or as the overseers of technical managers, has been discussed.
- **Lower costs to government.** Cost savings to the government irrigation agency is often the driving force behind irrigation policy reforms. Government run systems are chronically short of maintenance funds leading to deteriorating systems and more difficult operation. Management transfer of major levels of the system to users offers government agencies an escape from this vicious cycle. While some critics see this as merely passing the costs on to farmers, the picture is not usually so bleak. Evidence from Mexico and Turkey suggest that farmers can manage better and more cheaply than their government predecessors. Thus, both farmers and government can benefit from these cost savings; farmers can enjoy better service, and cost savings; the government incurs less management cost and can then afford to improve service in the main system.
- **Social capital.** The organizations that farmers establish for managing their irrigation systems constitute a form of social capital that can have spin-off effects in other aspects

SSID TTLM, Version 2	Date: Dec 2018	Page 11 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

of social and economic life. The network of contacts among agency staff and the water user organization leadership, for example, can bring the farming community into closer touch with related services, e.g. credit, educational opportunities, or even political access. And the skills that farmers learn through their experience with their water user organization - accounting, budgeting, planning, and organizing - constitute a set of knowledge that can be used in many other productive endeavors.

➤ **How to implement PIM**

The opportunities for participation are different in each phase of the project cycle. Much of the emphasis on PIM has focused on participation in O&M, and particularly in the recovery of O&M service fees on behalf of the irrigation agency. While this aspect of participation is of great practical importance, there are many ways other aspects of irrigation management where participation can be incorporated. These include:

- participation in irrigation project identification, planning, and design;
- participation in system layout and construction; and
- Participation in project monitoring and evaluation.

In short, any aspect of irrigation management can have a participatory dimension. We had discussed

*Why* participation is important. In this section we will consider how to achieve it: *how* to implement

Participatory irrigation management. There is no recipe for this; indeed, the process of formulating a strategy that fits the specific features of any given country is the first - and ongoing - step. There are some common issues to consider, however, of which we will discuss two:

- creating an enabling environment, and
- Organizing methods.

**Creating an enabling environment** for participation to work, the government, which is the incumbent power broker in most national irrigation sectors, must be willing, and preferably eager, to make it work. Participation is really a political issue; it involves giving up power to local entities (e.g. water user organizations), and dealing with those farmer-controlled entities in a cooperative, rather than bureaucratic manner. These features of participation are normally considered as a "cost" from the perspective of vested interests in the government irrigation

SSID TTLM, Version 2	Date: Dec 2018	Page <b>12</b> of <b>24</b>
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

bureaucracy. But there are also some attractive benefits from this same perspective: The financial burden on the government agency is reduced, political pressures on technical staff are often reduced, and greater management attention can be given to the large infrastructure without the distraction of operating and maintaining the lower ends of the irrigation network. The first step towards creating an enabling environment is *political will*. Once the government is willing, what next? Some of the factors to consider are:

- (a) Is the physical design "user friendly" and if not, cannot be enhanced to render it more manageable?
- (b) Are the policies in the irrigation sector conducive to user management? Are there incentives to the agency staff to work with farmers, and are there incentives to farmers to accept the investments of time and energy that management entails?
- (c) Do the irrigation staff have the skills and understanding needed for dealing cooperatively with farmers in a management role? Do farmers have the skills for handling their own affairs?

**2.2. Understand irrigation based on PIDM approach**

- Participatory irrigation development and management approach
- ✓ the participatory irrigation development and management (PIDM) approach", is as follows:
  - ✓ Integrated Approach: Overall objective is the development of sustainable and profitable irrigated agriculture by male and female farmers within the command area of SSI schemes. In addition to the construction of irrigation and drainage structures, it is also required to:
    - ✓ a) establish and develop capacity of water users' organization (WUO) for the operation and maintenance (O&M) of SSI scheme in an adequate, effective and timely manner;
    - ✓ b) provide appropriate irrigation extension and support services to support male and female farmers to develop their irrigated agriculture successfully within the command area of SSI schemes; and
    - ✓ c) improve soil and water management. Need for close coordination and collaboration as different public and private
  - ✓ institutions are involved in:
    - ✓ a) design and construction of SSI schemes;

SSID TTLM, Version 2	Date: Dec 2018	Page 13 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

- ✓ b) establishment and capacity development of WUO for the O&M of the SSI schemes;
- ✓ c) development of irrigated agriculture within the command area of SSI schemes; and
- ✓ d) planning and execution of soil and water management interventions in and around the command area of the SSI schemes
  - Watershed-based Approach:
    - ✓ Many SSI schemes in Ethiopia face problems caused by deforestation,
    - ✓ overgrazing and/or inappropriate crop husbandry practices in areas upstream of SSI scheme as well as lack of water use planning and monitoring within watershed Reduce the impact of siltation problem, unreliable water supply and (more)
    - ✓ frequent floods on the performance and sustainability of SSI schemes within the watershed by improving soil and water management in and around the command area of the SSI schemes Avoid/minimize any (potential) negative impact of SSI development on
    - ✓ downstream users and support and facilitate the multiple use of water within the watershed by improved water balance study and planning within the watershed, including licensing of water use (i.e. water extraction permits) Participatory Approach: Most SSI schemes in Ethiopia have been developed with no or limited
    - ✓ participation of concerned farmers Ensure that all male and female farmers are fully involved, informed and
    - ✓ consulted during all stages of the SSI development process Ensure that male and female farmers are fully involved in decision-making
    - ✓ during all stage of the SSI development process Ensure that male and female farmers through their WUO take over the full
    - ✓ O&M responsibility for their SSI schemes SMIS Project Introduction
      - Gender-Responsive Approach:
        - ✓ No or limited involvement of female farmers in decision making related to O&M of SSI schemes and management of WUO Ensure effective participation of all female farmers in the management of their WUO and decisions related to the O&M of their SSI schemes Ensure full access of all female farmers to irrigation water as well as the

SSID TTLM, Version 2	Date: Dec 2018	Page 14 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

- ✓ provision of training, extension and support services Avoid/minimize any (potential) negative impact of the development of
- ✓ irrigated agriculture on female household members (i.e., increased workload) Facilitate the safe use of irrigation canal for non-irrigation purposes, such as fetching water for domestic use, washing clothes and watering livestock, by providing social structures in scheme design Phases of
  - PIDM Approach The PIDM approach is sub-divided in the following 4 phases:
    - ✓ Assessment Phase;
    - ✓ Preparatory Phase;
    - ✓ Implementation Phase; and
      - Operation and Maintenance Phase.
      - Steps of PIDM Approach Each phase of the PIDM approach comprise a number of steps.
- ✓ The proposed steps of the four phases of the PIDM approach are:
  - Assessment Phase
    - Step 1: Registration of application for SSI scheme development
    - Step 2: Pre-feasibility studies
    - Step 3: Community awareness campaign
    - Step 4: Feasibility studies
  - Step 5: Preparation and approval of feasibility report (Milestone 1) Preparatory Phase
  - Step 6: Participatory scheme design
  - Step7:Establishment of water users' groups (WUGs) and Irrigation Cooperative/Irrigation Water Users' Association (IWUA)
  - Step 8: Preparation of Agriculture Development Plan
  - Step 9: Preparation of IWUA Capacity Development Plan
  - Step 10: Preparation of Soil and Water Conservation Plan
  - Step 11: Preparation and signing of Scheme Development Agreement (Milestone 2) Implementation Phase
    - Step 12: Land acquisition and reallocation
    - Step 13: Tendering and execution of construction works

SSID TTLM, Version 2	Date: Dec 2018	Page 15 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

- Step 14: IWUA capacity development in governance, administrative and financial management
- Step 15: Execution of Agriculture Development Plan
- Step 16: Execution of Soil and Water Conservation Plan
- Step 17: Capacity development of WUGs and IWUA in O&M and water management
- Step 18: Preparation and signing of irrigation management transfer (IMT) Agreement (Milestone)
- Step 19: IWUA-managed O&M of SSI scheme
- Step 20: Monitoring and evaluation of IWUA performance
- Step 21: Monitoring and evaluation of environmental, socio- and agro-economic impact PIDM
- ✓ The PIDM process covers the implementation activities required for irrigation scheme development; starting from scheme identification to finally full management control by the Water Users Association (WUA). WUAs are formed and assume full responsibility for the operation and maintenance (O&M) of their scheme, including the head works.
- ✓ This is a major departure from conventional irrigation development practice in Maharashtra, where the Government retains responsibility for head works O&M. To facilitate the implementation of the participatory process in the field
- ✓ Another departure from convention is the inclusion of equitable water allocation in the design I.e. water allocation is based on an agreed land area ceiling (or agreed supply volume) rather than “water rights” being automatically tied to “land ownership”.
- ✓ In other words, the community decides the maximum land area to be irrigated per landowner and the available water is distributed to as many farmer households as practicable.
- ✓ The conventional approach is that the larger the farmers’ landholding, the greater the amount of water automatically received, whereas under PIDM, a ceiling of 2 ha per landowner is suggested; 2 ha being the upper limit for being classified as a “small farmer”. This is in accordance with the National Water Policy.

SSID TTLM, Version 2	Date: Dec 2018	Page 16 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	



Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Directions:** Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. What is Participatory irrigation development program? (5)
2. What is Participatory irrigation management? (5)
3. List the steps of PIDM approach? (5)

**Note:** Satisfactory rating – 7.5 points and above      Unsatisfactory - below 7.5 points

You can ask your teacher for the copy of the correct answers

**Information Sheet 3****Identify irrigation extension models, methods and principles****3.1 Identifying Irrigation Extension work approach**

There are eight different approaches to extension work are Identified. These are briefly summarized below:

**I. The general agricultural extension approach:** The purpose is to help farmers increase their production. Planning is done on a national basis by the central government "which knows better than farmers". This is a typical case of top-down planning.. This approach does provide farmers with information on a number of production alternatives from one single source.

**II. The commodity specialized approach:** All functions related to a particular commodity are grouped together, including extension, research, input supply, output marketing, and prices. Planning is controlled by a commodity organization for the purpose of increasing production of a particular commodity. Highly trained scientific personnel equipped with expensive vehicles and field scientific apparatus are employed. Techniques recommended must produce financial benefits for farmers, and be demonstrable on a farmer's own field. New inputs must be accessible, a credit scheme established, and the ratio between farm-gate inputs and commodity prices considered. Technology tends to be appropriate and distributed in a timely manner because it focuses on a narrow range of technical concerns. Interests of farmers, however, may have less priority than those of commodity production organizations.

**III. The training and visit approach:** The purpose of the training and visit approach is to induce farmers to increase production of specified crops. Planning is controlled centrally and field personnel tend to be numerous and dependent on central resources. Success is measured in terms of production increases of the particular crops covered by the programmer.

**IV. The agricultural extension participatory approach:** This approach assumes that farmers are skilled in food production from their land, but their levels of living could be improved by additional knowledge. Active participation by farmers themselves is necessary and produces a reinforcing effect in group learning and group action. Much of the work is through group meetings, demonstrations, individual and group travel, and local sharing of appropriate technologies. The agricultural extension participatory approach costs less, fits needs well, and is more efficient. However, it is more work for extension agents to organize and motivate farmers. It requires agents to live and to socialize with farmers. Where a government job is seen as a reward for good friends, the "hardship" implied by this approach dooms it to failure.

**V. The project approach:** This approach uses large infusions of outside resources for a few years to demonstrate the potential of new technologies. Control is at the central government level and there are often considerable financial and technical inputs from an international development agency. Short-term change is the measure of success. In the aquaculture project in Nepal, for example, a loan from the Asian Development Bank was used by the Ministry of Agriculture to support extension work by fisheries officers in many different locations throughout the country. They were able to introduce pond fisheries through an effort which combined the project approach with the specialized commodity approach. One problem with this approach, however, is that a flow of ideas outside the project rarely occurs.

**VI. The farming systems development approach:** This approach assumes that technology which fits the needs of farmers, particularly small-scale farmers, is not available and needs to be generated locally. Planning evolves slowly and may be different for each agro climatic farm ecosystem. This approach is implemented through a partnership of research and extension personnel using a systems approach. Analyses and field trials are carried out on farmers' fields and in homes. The measure of success is the extent to which farm people adopt technologies

SSID TTLM, Version 2	Date: Dec 2018	Page 18 of 24
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

developed by the programmer and continue to use them over time. Control of the program is shared jointly by local farm families, extension officers, and researchers. Advantages of this system include strong linkages between extension and research personnel, and the commitment of farmers to using technologies they helped to develop. Costs can be high, and results can be slow in coming.

**VII. The cost sharing approach:** This approach is based on local people sharing part of the cost of the extension program. Control and planning is shared by various entities and is responsive to local interests. Success is measured by farmers' willingness and ability to provide some share of the cost, be it individually or through local government units. Problems may arise if local farmers are pressured into investing in unproven enterprises.

**VIII. The educational institution approach:** In the educational institution approach, planning is controlled by those determining the curriculum of the educational institution. Implementation is through non formal instruction in groups or individuals through a college or university. Attendance and the extent of participation by farmers in agricultural extension activities are the measures of success. Ideally researchers learn from extension personnel who, in turn, learn from farmers. However, this rarely occurs in practice. The advantage of this approach is the relationship of specialized scientists to field extension personnel.

**a. Performing Irrigation Extension work methods**

Extension work Methods in general are systemic ways of reaching objectives. Extension methods consist of techniques of communication between extension workers and client groups with the aim of motivating and enabling them to find ways of solving their problems

- Methods relate to influencing processes, and thus, determining methods means thinking in terms of phases and sequences and of how it might be best to proceed.
- Methods used must be specifically adapted to circumstances, because the use of any communication technique depends on; -
  - the number of people to be addressed,
  - the problem to solved, and

SSID TTLM, Version 2	Date: Dec 2018	Page <b>19</b> of <b>24</b>
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

- the capacity of the extension service

Types of extension methods these are broadly categorized into three:

- individual methods
- group methods
- mass methods

**Individual methods** that entail farm and home visits, office calls, personal letters, phone calls, e-mails and its related means like Skype /messenger/face book. It is not an effective way of promoting the well-being of the mass of small-holder famers or reaching large numbers of clients, but as the most intensive form of communication between farmers and extension workers. It plays role in private extension as well as in complementing group and mass extension methods if the outreach of extension is defined geographically.

**Group methods** focus on discussion will only be productive if there is a common way of looking at a problem. The adviser must not be tempted to impose a solution on the farmer even though s/he might be in a position to do so on account of his superior knowledge and power of expression. Understanding problems becomes easier when the person to be advised is respected as an individual

Guidelines to conduct a problem-solving individual extension talk

- Make sure that the extension agent and the client have the same perception of the overall problem situation
- Conduct a situation analysis of the problem together- to make sure they both see the problem in the same way
- Reflect together on the possible causes of the problem- what explanation does the farmer give? Is s/he aware of other possible causes? Are there more relevant causes that the extension agent could add?
- Find together feasible solutions to address the most important problem
- Help the client to opt for the correct option by giving relevant information about the solutions discussed. For example; - what is needed, what are the costs involved and what are the side effects etc.
- offer your ongoing assistance in the process of implementation of the solutions

SSID TTLM, Version 2	Date: Dec 2018	Page <b>20</b> of <b>24</b>
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

Individual extension farm/field visit the extent to which discussions can take place on the farm depends on local conditions, the farmer's routines, the time of the day or year, and the content of the session a discussion at the farm offers the following advantages compared to other methods of individual extension

### 3.3 Determining Irrigation extension work principles

Certain basic principles underline the conduct of agricultural extension work. These principles differ with respect to the kind of community in which extension education is carried on. Extension principles may be defined as guidelines for the conduct of extension work and these principles are the bedrock upon which extension service rests. The basic principles are:

- Extension should start where the people are.
- Extension should be based on the needs and interests of the people
- Extension should assist farmers to determine their own problems,
- Program must start with the felt needs
- The principle of co-operative work must be pursued to logical conclusion.
- Extension workers should work with all members of the family.
- The principle of the use of variety of teaching methods is another basic principle.
- Extension workers should provide maximum opportunity for the people to work on program that have been determined by them and the extension agent working together.
- Extension workers should take advantage of any existing local groups to involve the people in extension program.
- Subject matter covered in extension must have definite purpose and must be specific so that program would be able to achieve the purpose for which it was established.
- The principle of constant evaluation must be followed.
- The principle of professionalism should be followed.
- Learning is a gradual process and therefore results must not be expected too soon.
- Adult learning remains high throughout life.
- Extension is educational in function through assisting people to make their own decisions among various alternatives put before them.
- Extension workers should promote the use and development of volunteer leaders.
- Extension should be based on facts and knowledge.

SSID TTLM, Version 2	Date: Dec 2018	Page <b>21</b> of <b>24</b>
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

## I. Guiding principles of extension

Extension activities are widespread throughout the developing world and most governments have set up formally structured extension services to implement extension program and projects. The practice of extension is supported by budget, offices, personnel and other resources. Before examining extension in detail in later chapters, however, it will be useful to consider the principles which should guide it. The major guiding principles are the following:

- Extension works with people, not for them
- Extension is accountable to its clients
- Extension is a two-way link
- Extension cooperates with other rural development organizations
- Extension works with different target groups

Extension authors and professionals strongly support planning. Forest and Baker (1994, p. 87), for instance, underline that "program planning helps justify budget appropriations and brings understanding among the public," adding that "the planning process offers opportunity to people who participate in it to learn, thus building leaders-hip skills in the community that will likely contribute to self-help, independence, and positive end results." In general, adequate planning and evaluation do the following:

- Involve an integrated analysis of needs and interests, opening up new horizons for action
- Promote a concentration of efforts, channeling energies and resources in appropriate directions, and helping accomplish complementarities and synergies
- Strengthen program resources and attract funds, thus allowing the sustainability or expansion of activities
- Improve team and community capacities, motivations, performance, and autonomy
- Show commitment to address and solve problems
- Strengthen the quality of projects and staff performance
- Serve as a means to open dialogue with other organizations involved in development

SSID TTLM, Version 2	Date: Dec 2018	Page <b>22</b> of <b>24</b>
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	

Self-Check 3	Written Test
--------------	--------------

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Directions:** Answer all the questions listed below. Illustrations may be necessary to aid some explanations/answers.

1. Briefly explain the ways we can identify irrigation extension approaches? (10pts)
2. What are the irrigation extension work methods? How can we perform them, explain? (5pts)
3. List the ways how we can determining irrigation extension work principles, what are the guiding principles (10pts)

**Note:** Satisfactory rating – 12.5 points and above      Unsatisfactory - below 12.5 points

You can ask your teacher for the copy of the correct answers

## REFERENCE

1. Brunner, E. and HsinPao Yang, E. (1949) Rural America and the Extension Service, Columbia University
  2. Saville, A. H. (1965) Extension in Rural Communities: A Manual for Agricultural and Home Extension technician Workers. Oxford University Press.
  3. State Extension Leaders Network (SELN) 2006 'Enabling Change in Rural and Regional Australia: The role of extension in achieving sustainable and productive futures', online resource: [www.seln.org.au](http://www.seln.org.au).
- Uwakah CT (1984). Programmes and opportunities in agricultural Extension Education. A paper presented to students of Agriculture Extension Department UNN.
  - Uwakah CT (1989). Summaries/Abstract of Agricultural Extension, Adult Education and Rural Development Studies UNN.
  - Vanden Ban AW, Hawkins HS (1988). Agricultural Extension Bath press Avon Great Britain.
  - Asiabaka CC (2002). Agricultural Extension. A handbook for Development Practitioners. Molsyfem United Services, Omoku, Rivers state, 1-2: 148 152.
  - Prospects, Problems and Solutions. The Nigerian Academic forum: 4(2): 121- 130.
  - Anaeto CF (2005). Need to strengthen supervision in Agricultural Extension service in Nigeria. J. Pure and Appl. Sci., 5(1): 1-7.

SSID TTLM, Version 2	Date: Dec 2018	Page <b>24</b> of <b>24</b>
	Prepared by: Alage, welyta sodo, O-Kombolcha, A-Kombolcha and Wekro Atvet collage Instructors.	