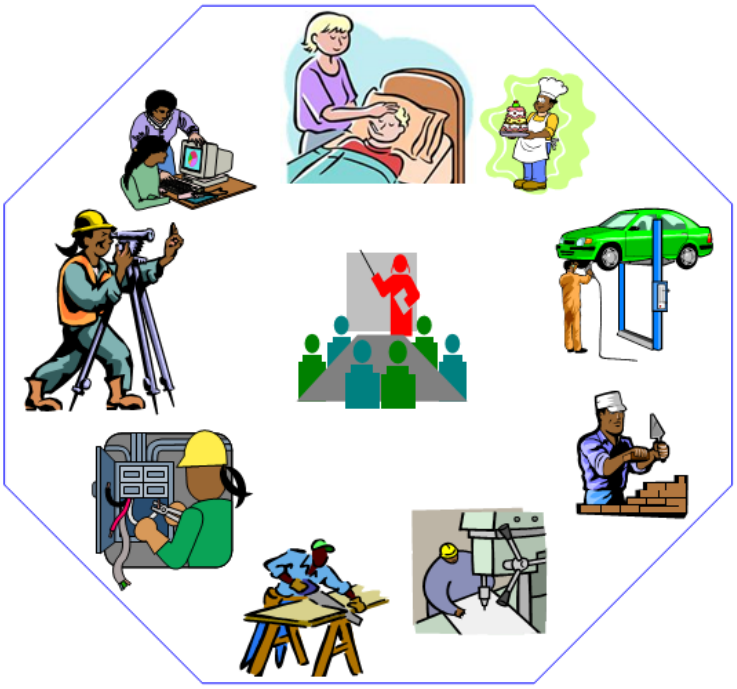
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Ministry of Labor and Skills

CROP PRODUCTION

Level-II

Based on November 2022, Version 4 Occupational standard



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Ministry of Labor and Skills

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Introduction to the Module

This unit covers the knowledge, skills and attitudes required to promote the use of digital technology in agricultural extension, understand adult learning, Integrate gender in agricultural extension and recognize Indigenous Knowledge.

LG #42 — LO #1- Promote the Use of Digital Technology in Agricultural Extension

Instruction sheet

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

- Introduction of the use of digital technology in Agricultural extension
- Building Skills in using digital technology
- The role of digital technologies in agricultural extension services

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

- Introduce the use of digital technology in Agricultural extension to familiarize its importance
- Build skills in using digital technology to strengthen agricultural extension services
- Understand the role of digital technologies in agricultural extension services to enhance agricultural development.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information Sheets
4. Accomplish the Self-checks

Information Sheet-1

1.1. The Use of Digital Technology in Agricultural Extension

1.1.1 Introduction

With the majority of extension personnel having access to computers, telephones and radio equipment, more farmers will be reached with agricultural information.

To further support extension practices with ICTs/Digital Technology, certain conditions need to be put in place. Provisions should be made for subsidies in phone recharge cards and internet subscriptions to increase affordability for farmers at all times to seek information on agricultural practices. More so, erratic power supplies and network fluctuations should be reduced through the development of necessary infrastructure to better serve rural farmers.

Focusing on agriculture, Ethiopia's ten-year Agriculture Sector Policy and Investment Framework among other things, aimed at achieving sustainable agriculture production as well as accelerating agricultural commercialization and agro-industrial development. The agriculture extension strategy, enacted in 2017, highlights **digital agriculture** as one of the pathways to ICT-based technology adoption in the sector. ICT-kiosks will be set up to offer technology-related advice and market information. As part of the strategy, the government will establish data and performance management systems as well knowledge resource centres at the Woreda administrative division levels. ICT enabled devices such as mobile phones, radio and television will be used to promote education and information exchange. This initiation will promote digital technology which in turn would increase agricultural productivity.

1.1.2 Defining Digital Technology

Digital technologies are **electronic tools, systems, devices and resources that generate, store or process data**. Well known examples include social media, multimedia and mobile phones

1.1.3 Evolution and Progress of Digital Technologies

Over the past few decades, we have seen the rise of the internet, mobile technology, and AI … among other things. Today, new technologies continue to emerge and transform the economy. Currently, AI (Artificial Intelligence) and automation are making their debut, promising new levels of efficiency and convenience. In the years to come, we will also see the spread of AR, VR (Virtual Reality), drone technology, and autonomous vehicles. These technologies will continue to revolutionize the way we live, work, and conduct business.

A total of **5.03 billion people around the world use the internet today** – equivalent to 63.1 percent of the world's total population. Internet users continue to grow too. In Ethiopia too users of digital technology is increasing from time to time. The country is a low-income country with a population of almost 115 million people, 78.3 percent of whom live in rural areas. Most people depend on agriculture for livelihood. There are 12 million smallholder farming households accounting for 95 percent of agricultural production and 85 percent of total employment. In 2020, agriculture contributed 35.5 percent to the country's GDP.

Ethiopia's ICT sector is state-run, but the government is supporting its development and liberalization. The state owned Ethio Telecom provides telecommunications services and maintains a monopoly on the market. However, the government is in the process of liberalizing the sector by offering two nationwide telecommunications service licenses to interested private players. The International Finance Corporation (IFC) is supporting the Ethiopian Communications Authority (ECA) with these license awards. The country's digital economy has untapped potential that can increase exports and create employment for youth and women, among other benefits.

1.1.4 Tools for Digital Technologies

ICTs/ Digital technologies generally refer to an expanding assembly of technologies (including digital technology tools like mobile phones, smart phones, computers, the internet, CDs/DVDs, email, radio, television, and cameras) used to handle information and aid communication.

In some countries extension personnel have access to **computers**, **radio**, **telephones**, **television** and **video recording equipment**, which they could put to use in the provision of all their activities if provided with the necessary training, infrastructure and funding. Indeed, positive changes have been recorded in the use of ICTs by extension officers, who acknowledge that the issue of farmer reach has been abridged to a large extent through the technologies. And, whilst the use of ICTs has not been totally adopted by extension officers in all of their activities, there is hope that, in the next few years, the technologies will be absorbed into the majority of extension duties on a large scale.

1.1.5 Utilization of Digital Technology

In the past few years we have witnessed a rapid increase in the number of users of digital technologies and the Internet, especially among children and youth. In addition to the fact that they offer numerous opportunities for learning and development, modern technologies also entail potential risks, including also the risk of digital violence. (P. Dragan and Dobrinka K. 2013)

ICTs/Digital technologies enable individuals to create, collect, process and manage information in different ways (voice, text or image). There is scarcely a field of human activity today that has not been touched by the dramatic changes in ICTs. The use of ICTs in agriculture in ACP regions, for instance, is progressing, with growing appreciation of the importance of increasing access to information.

When the situation of the users of digital technology in Ethiopia is seen it seems to be differing from the above mentioned situation. An estimated 15 million Ethiopians are out of reach of cellular network and 60 million without access to Internet. About 18.6 percent of Ethiopia's population has access to the Internet. This is partly due to the fact that 78.8 percent of the population live in rural areas (with no Internet access), the lack of infrastructure and the monopoly of Ethio Telecom in the telecommunications sector. State monopoly of the sector has traditionally generated revenue from cities to develop rural infrastructure. In 2017 the fixed

broadband subscriptions (per 100 people) were at 0.06 while mobile cellular subscriptions (per 100) were 37.

Until now, the rate of ICT use by rural women farmers has revealed the constraints they face when it comes to taking advantage of such technologies. A number of gender studies have shown that the main ICT users (especially of **computers**, the **internet** and **e-mail**) are young men, and that women are marginal users, suggesting a gap between discourse and the reality of women's empowerment through ICTs. However, more women have access to ICTs with their increasing availability, enabling extension officers to reach women directly without depending on the influence or ownership of ICTs by men/husbands. Despite this, women who are not financially independent of their husbands usually have to ask for help towards maintaining the ICTs in question, which could pose a threat to their effective use by women.

A GSMA consumer survey undertaken in 2015 and focusing on Internet inclusivity revealed that the gender gap in Internet usage in Ethiopia was high (60 percent) with women having less access to Internet than men. Low income, scattered settlements and low population densities have made it expensive to extend fiber and satellite services to rural areas due to the cost involved limiting Internet access by households in rural areas. Through the Digital Foundations Project, the government is expected to stimulate investment in rural Internet and broadband policies in support of prospective private sector investments.

In 2020, 21.4 million Ethiopians constituting 19 percent of the population were using the Internet. The year-on-year growth in the number of Internet users is about 2.6 percent. Mobile cellular subscription per 100 people was 37.2 in 2017. Also, 35.5 percent of the population owned mobile devices in 2019.

A number of initiatives have been undertaken by the government to expand digital services to rural farming communities. For example, the Ministry of Agriculture in partnership with Digital Green has built the capacities of subject-matter specialists to produce local videos, which are used by extension officers in farming communities. The Ethiopian Commodity Exchange Commission provides commodity price information to farmers in real time using electronic

boards in 31 centres across the country. The Ethiopian Soil Information System project (EthioSIS) focuses on digital mapping soil resources and the creation of a database smallholder farmers. Similarly, the Shallow Ground Water Mapping project collates data and maps out underground water to support irrigation decision-making. The Agriculture Commercialisation Clusters programme creates an e-marketing platform for consumers to buy directly from farmers in communities. The Agriculture Transformation Agency's National Market Information System gathers crop data for dissemination to farmers and other value chain actors.

The budding tech space has seen private players organizing accelerator programmes for young start-ups such as xHub Addis, iCog Labs, iceaddis or the blueMoon lab, which organizes competitions twice a year to identify new startups that ultimately benefit from training and coaching programmes over the span of four months. Growth Africa lab organizes training workshops in finance and business development for start-ups with turnovers over USD 50 000 over a span of six months. Through such spaces new start-ups such as Yerras Gebeya, Yene-pay, Awesome Africa, and Mesafint Alebel currently provide relevant services ranging from disease management, mobile payments, training via mobile technology and livestock trading. (FAO and ITU., 2022)

1.2 Building Skills in using digital technology

1.2.1 Introduction

Digital skills are broadly defined as the skills needed to "use digital devices, communication applications, and networks to access and manage information," from basic online searching and emailing to specialist programming and development.

Following are the five main skills that all adults should have so that we can safely and effectively take part in digital life in every sector.

- Communicating. ...
- Handling Information & Content. ...
- Transacting. ...
- Problem Solving. ...
- Being Safe & Legal Online.

1.2.2 Demonstrate Digital Technology

Challenges exist to using ICTs in agriculture, such as: erratic power supplies; fluctuating networks; high costs of ICT infrastructure; low incomes of rural farmers; lack of policies to enhance ICT development in rural areas; and a **lack of necessary skills to use the technologies**. Despite such problems, opportunities abound in terms of adoption of novel agricultural practices promoted through ICTs, and more farmers in the ACP region have developed their ICT literacy via extension training, increasing the use of such technologies. Further, ICTs are considered to be transforming agricultural extension through enabling greater access to text, graphics, audio and video files in an integrated manner.

Despite the increase in the number of universities in Ethiopia the use of ICT for education remains low. However, efforts have been made by some educational institutions to provide on-campus digital training to **demonstrate** the use of digital technology. For example, in 2019, Nokia signed a partnership agreement with the Addis Ababa Science and Technology University and the Addis Ababa Institute of Technology to provide high-level technical skills to students.

1.2.3 Practicing Digital Technology

Digital technologies are electronic tools, systems, devices and resources that generate, store, or process data. To make appropriate use of digital technologies training and practicing same is necessary

The use of digital technology needs literate users. Adult literacy rate in Ethiopia is 51.8 percent. Literacy among the youth is higher at 72.8 percent. According to UNESCO, primary school enrolment was 10.1 percent in 2015. Secondary school enrolment was 35 percent in 2015. Enrolment at the secondary level was slightly higher among males (35.6 percent) than females (34.3 percent). Teaching faculties across the country are gaining traction as centres for the advancement of digital literacy skills. Training should be provided in e-learning through relevant devices and assistive technologies to improve the teaching and practicing environment in schools.

The Ministry of Science and Higher Education with support from the World Bank has drafted a National Digital Skills Country Action Plan, which for the next 10 years seeks to equip students in higher educational institutions with the relevant digital skills to improve their employability. Digital skills courses will be introduced at the intermediate and advanced levels in all technical and vocational education and training (TVET) programmes. Computer engineering, computer science, information systems and related programmes will be supported in about 33 public universities across the country. The action plan will also provide supportive ICT infrastructure, smart classrooms and virtual laboratories. Microsoft through the Education Transformation

Agreement has also collaborated with the Ministry of Education to improve ICT related competencies in Schools.

1.2.4 Apply Digital Technology

Digital Technology can help with the day-to-day management of farms and improve traceability, security and automation. Its application in the agricultural sector facilitates information exchange, monitoring and evaluation of different activities.

It is necessary to develop a National ICT policy to promote and facilitate extensive use of ICT in key sectors including agriculture. One of its key strategies is to design and implement computerized information systems and applications for the agriculture sector; an essential driver of anticipated growth in digital agriculture.

To unleash value from agriculture, mapping out existing digital technologies in agriculture and opportunities to accelerate a digitally enabled agriculture transformation is important.

Application of digital technology in mobile money services should emerge with new regulations to allow new players to enter the market.

1.2.5 Maintain and Manage Digital Technology

Support programmes have to be initiated to improve digital skills and employment of labour. To maintain and mange the use of digital technology concerned individuals and organizations should collaborate with each other. For example, Microsoft Afrika has collaborated with Gebeya Inc., a Pan-African EdTech company, to launch a virtual skills lab to build digital skills capacities and to increase the employability of youth. This is expected to provide apprenticeship-based training to 200 African software engineers over a period of six months. The government

also partnered with the Netherlands through the ongoing CASCAPE project to build youth capacity to scale up evidence-based best practices for agricultural production in Ethiopia.

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Furthermore, the government launched "Digital Ethiopia 2025", a digital strategy that aims at ensuring the country's readiness for the development of a digital technology based economy. The strategy identifies four pathways in transforming its economy through digitalization, namely: (i) unleashing value from agriculture (ii) achieving global value chains in manufacturing (iii) building IT enabled services (iv) leveraging 'digital' as the driver of competitiveness in the tourism sector.

1.3. The role of digital technology in agricultural extension services

1.3.1 Provide Diverse Knowledge to Beneficiaries

Over time, the permeation of ICTs into agricultural extension practices has provided a platform for extension workers and farmers to communicate from afar, and to enhance the provision of information which in turn enhances farmers' knowledge and new technologies. With greater access to such information, farmers are able to improve their production, incomes and standards of living.

1.3.2 Supply Efficient Information Products

Delivering government-subsidized farm inputs directly to farmers via Global System for Mobile Communication (GSM) phones is required to be enhanced. The GES scheme is powered by e-Wallet (an electronic distribution channel), which provides an efficient and transparent system for the purchase and distribution of agricultural inputs based on a voucher system implemented by public extension services. The scheme provides registered farmers e-Wallet vouchers with which they can purchase fertilizers, seeds and other agricultural inputs from agro-dealers at half the usual cost – the remainder being covered by the federal and state governments in equal proportions. About 20 million people have benefitted from this scheme, and while awareness is

increasing, teaching in the use of the technology, through extension, is still required to harness the rewards

Considering the urgent need for continuous and up-to-date agricultural information by farmers, the use of conventional communication channels as entrenched in the training and visit (T&V) extension approach, such as farm/home visits, personal letters, and use of contact farmers for disseminating agricultural information, is becoming less effective. This has prompted the use of ICTs/digital technology as a faster medium for communicating agricultural information.

In cases where the T&V approach is still being used, ICTs serve a complimentary role. Extension officers can, for instance, use ICTs to propagate agricultural techniques taught during T&V. ICTs can also be used by extension officers to monitor farmers' progress in terms of adopting such techniques, and serve as a channel for farmers to seek advice when they encounter problems.

The Ethiopian Communication Authority is the regulator for the telecommunications sector. The government is prioritizing the improvement of Internet and broadband services. In 2016, a Broadband Plan was drafted to streamline state investment in broadband for the period 2016–2021. The strategy aims at extending mobile broadband coverage to all rural areas and to support agriculture service delivery. It also aims at setting up 16000 rural communication centres across all districts.

The Growth and Transformation Plan II is expected to transform Ethiopia into a low middle-income country by 2025. For agriculture growth, the plan will push through five key directions, namely: (i) development of smallholder crop and enhancement of pastoral agriculture; (ii) provision of all rounded support to educated youth to enable them to engage in agriculture; (iii) provision of support to domestic and foreign investment in subsectors such as crop, flower, vegetables, fruits and livestock; (iv) implementation of holistic measures to address challenges in the supply of agricultural inputs; and (v) implementation of a scaling up strategy where suitable in various agro-ecological zones.

1.3.3 Provide Technology-related Advice

A significant number of private start-ups are rendering information services in rural areas. Digital Green also launched FarmStack, an agricultural **advisory service** platform that captures data on weather, soil types, market information and agriculture practice content. This data is then made available to farmers through multiple channels. Yerras Gebeya runs an e-marketing platform for livestock trading with e-payment systems. Debo Engineering focuses on plant disease management using image detection algorithms via mobile phones. Awesome Africa provides the platform for training of farmers on permaculture using local languages. M-Birr has made mobile money services available to over 1.2 million Ethiopians enabling subscribers to shop and pay for other basic utility services.

1.3.4 Provide Location-specific Market Information

Digital technology makes exchange and delivery of client-required information easy. The information to be delivered will be relevant and location-specific. Governments focus on revitalizing agricultural extension services by empowering and equipping extension workers with IT skills to support farmers in the areas of: digital farm mapping; soil type identification; meteorology; and agricultural records. The establishment of farmer helplines by the National Agricultural Extension and Research Liaison Services to provide support for planning, production, storage and distribution of crops, livestock, and fisheries products is also changing extension practices in the country in terms of service delivery.

1.3.5 Enhance Technology Adoption in Agriculture

Technology adoption refers to **the process of accepting, integrating, and using repeatedly new technology in society**. **Adoption** is a process of deciding to apply an innovation and continue to use it. The process follows several stages, usually categorized by the groups of people who use that technology.

The adoption of novel technologies and techniques is a major concern in agricultural extension and development work. It is a common experience that the adoption of an apparently useful agricultural technology is slower than predicted, or desired, by extension agents (Röling, 1988). One of the reasons behind this delay is the continuing pro-innovation bias of much extension research. That is, the implication that an innovation should be diffused rapidly, and that innovations should neither be re-invented, nor rejected.

The technology adoption lifecycle is a description of customer behavior related to the acceptance of a new product or feature, which is often broken into **innovators, early adopters, early majority, late majority and laggards**.

There is time gap or difference between farmers for the first time become aware of innovation and make a decision to adopt it. Along the time gap farmers are expected to pass through some steps and stages.

Steps of the adoption process

Awareness: Is the stage where farmers for the first time become aware of the existence of the innovation. It is important to give information for the farmers about the existence of something. In this case public extension method has vital importance with least cost and high coverage.

Interest The individual develop the interest to know more about the innovation. Farmers like to hear and read more about the innovation; hence development workers try to provide more information to the farmers. Group and individual extension methods can be use at this stage.

Evaluation: Is the stage where farmers stats to evaluate the innovation based on the information they gathered inters of hi/her own situation. Therefore they separate the advantages and disadvantage of the innovation.

Trial: Is the stage where farmers try or observe the result of the innovation on a small scale or others fields.

Adoption/Rejection: If trial is positive the farmers will accept it and if it is negative they will reject it.

When the above mentioned process is expected to take place conventionally by using development professionals, it takes a longer time to bring the required result. For the adoption process to take place in shorter time and achieve the required goal the use of digital technology is important.

Self-Check 1	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided below.

I. Write 'True' if the statement is correct, if not write 'false'

_____ 1. Digital technology makes things impossible to reach farmers

_____ 2. Digital technology transfers economy

_____ 3. In the past few years users of digital technology has decreased

_____ 4. Digital technologies are electronic tools

_____ 5. The use of digital technology doesn't need the use of literacy

II. Match the items in column A wit the proper items in column B

A	**B**
___ 1. CD/DVD	A. Communicating
___ 2. Skills to use Digital technology	B. Challenge for using digital technology
___ 3. Erratic power supply	C. Digital technology
	D. Demonstration

III. Define Digital Technology: _____

Note: Satisfactory rating - 10 points **Unsatisfactory - below 10 points**

You can ask you teacher for the copy of the correct answers.

Name: _____ Date: _____

LG #43 LO #2- Understand Adult Learning

Instruction sheet

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

- The concept of adult learning
- Determining principles of Adult learning
- The importance of Adult learning in Agricultural
- Adult learning methods
- Understanding the role of adult learning

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

- The concept of adult learning is understood to bring behavioural changes
- Principles of Adult learning is determined for the implementation of extension services
- The importance of Adult learning in Agricultural Extension is understood to enhance agricultural extension services
- Adult learning methods are understood to enhance the knowledge and skills of extension beneficiaries

• The role of adult learning is understood to allow farmers develop knowledge and skills
Learning Instructions:
5. Read the specific objectives of this Learning Guide. 6. Follow the instructions described below. 7. Read the information written in the information Sheets 8. Accomplish the Self-checks

Information Sheet-2

2.1. The concept of adult learning

2.1.1 Teaching and learning

2.1.1.1 Teaching

Teaching can be defined in many in many ways according to the context we are referring. Some of them are described below.

- "Teaching is imparting knowledge or skill"
- "The action of a person who teaches; the profession of a teacher"

Teaching as intentional activity

- "Teaching is undertaking certain tasks or activities the intention of which is to induce learning"
- A teacher can anticipate that certain activities will result in learning, but not guarantee it.

In short, successful teaching cannot be reduced to a set of general rules, or a prescribed pattern of behaviour.

Teaching as Normative Activity

- "Normative teaching requires that the activities of teaching conform to certain ethical conditions"

- Conditioning (stimulus-obeying behaviour)
- Brainwashing (conditioned behaviour/uninformed belief)
- Informing (information with explanation or evidence, no experience provided)
- Training (rule-obeying behaviour)
- Instructing (training and informing)

- Teaching (process of verification, concern for what student thinks, preparing them for independent action)

Scientific definition of Teaching

- Teaching is the process of caring out those activities that experience has shown to be effective in getting students to learn",

A working definition of teaching

- "Teaching is undertaking certain ethical tasks or activities the intention of which is to induce learning"

We can also describe teaching as the interaction of student, teacher, subject matter and the overall environment under which teaching learning process takes place. … (p. 4)

2.1.1.2 Learning

Learning can be defined as follows,

- Acquiring and mastering knowledge and skill to make transformations and solve social evils.
- A relatively permanent change in behaviour resulting from experience or practice.

2.1.1.3 Learning defined

The target groups for training in precursor control would necessarily be adults, with varying degree of experience in law enforcement. It would be worthwhile for a precursor control trainer, therefore, to possess conceptual clarity about learning, particularly adult learning, for it is recognised that training encompasses learning. The Glossary of Training Terms defines learning as:

"The process whereby individuals acquire knowledge, skills and attitudes through experience, reflection, study or instruction."

Learning has also been defined as a relatively permanent change in behaviour resulting from instruction or stimulation from external sources, from one's own practical experiences and from insight arising from reflection.

Training is, therefore, nothing but organised learning, with a well-defined purpose. Formal educational institutions in modern society when initially established, were governed only by one model of assumption about learners and learning - the pedagogical model (derived from the Greek words "paidos", meaning "child" and "agogos", meaning "leader". So, pedagogy literally means "the art and science of teaching children".)

Such a model assigned full responsibility for making all decisions about what should be learned, how it should be learned, when it should be learned, and if it had been learnt, to the teacher. Students were submissive recipients. It assumed that they were dependent personalities and were motivated by extrinsic pressures or rewards.

2.1.1.4 Teaching and learning

Teaching and learning are processes that are important for generation and dissemination of knowledge. Through these processes societies acquire past experience, add up on it, and pass it down to the next generation. Usually teaching should occur after learning. This is because we have to know what we should teach, how to teach, when to teach, all of which are known after we learn about them. Also a person who is familiar with the concept could be able to teach it. Therefore, we can conclude that teaching occur after or prior leaning.

Relationship between Teaching and Learning

- Teaching is what teachers do
- Learning is what students do

2.1.1.5 Education

a. Defining Education

"The aim of education should be to teach us rather how to think, than what to think – rather to improve our minds, so as to enable us to think for ourselves, than to load the memory with the thoughts of other men." – Bill Beattie

The word education comes from the Latin word "e-ducere" meaning "to lead out." From this we can understand that the main role of a teacher in the teaching-learning process is facilitating condition for learners to learn through taking the prime responsibility for their own learning.

Education can be defined as

- a planned learning and it is done intentionally;
- the act or process of educating or being educated;
- the knowledge or skill obtained or developed by a learning process
- a program of instruction of a specified kind or level and
- the field of study that is concerned with the pedagogy of teaching and learning

Webster defines education as the process of educating or teaching. Educate is further defined as "to develop the knowledge, skill, or character of an individual!" Thus, from these definitions, we might assume that the purpose of education is to develop the knowledge, skill, or character of students.

Two parties are involved in education

Teacher: plans learning opportunities and outcomes,

Learner: student and participants must be willing and motivated to learn.

b. Purpose and functions of education

To make matters more complicated, theorists have made a distinction between the purpose of education and the function of education.

A **purpose** is the fundamental goal of the process – an end to be achieved. **Functions** are other outcomes that may occur as a natural result of the process – byproducts or consequences of schooling. For example, some teachers believe that the transmission of knowledge is the primary **purpose** of education, while the transfer of knowledge from school to the real world is something that happens naturally as a consequence of possessing that knowledge – a **function** of education. Because a **purpose** is an expressed goal, more effort is put into attaining it. **Functions** are assumed to occur without directed effort.

2.1.1.6 Types of Learning

Learning can be classified into many ways. Some of them are Formal, Informal, Intentional and unexpected types of learning.

Most learning does not occur during formal training programs. It happens rather through processes not structured or sponsored by an employer or a school. Informal learning is the term we use to describe what happens the rest of the time. In order to truly differentiate between formal and informal, we also find it valuable to examine what is learned intentionally or accidentally.

Formal Learning includes the hierarchically structured School system that runs from primary school through the university and organized school-like programs created in business for technical and professional training.

Informal Learning describes a lifelong process whereby individuals acquire attitudes, values, skills and knowledge from daily experience and the educative influences and resources in his or her environment, from family and neighbors, from work and play, from the market place, the library and the mass media.

Intentional Learning is the process whereby an individual aims to learn something and goes about achieving that objective.

Accidental Learning happens when in everyday activities an individual learns something that he or she had not intended or expected.

It is also possible to refer to one more categories: **Non-formal Learning**. It is defined as any organized educational activity outside the established formal system whether operating separately or as an important feature of some broader activity intended to serve identifiable learning objectives.

2.1.2 Adult Learning

2.1.2.1 Introduction

Having looked into the major theories/perspectives of learning above, we are now in a position to discuss adult learning. The major emphasis of this discussion is on adult learners, characteristics of adult learners, principles of adult learning, motivation and adult learning, and planning adult learning activities.

We will begin by clarifying what we mean by 'adult.' As the use of this term varies from country to country, we will have a detailed discussion on it. Adult learners differ from children and other lower level learners in that they do have their own characteristics. We will discuss these characteristics. Following characteristics of adult learning is principles of adult learning, where we will be discussing the major principles which govern the learning of adults. We will also have discussions on the role of motivations on adult learning, and learning environments for adults.

The free encyclopedia, Wikipedia, defines the term 'adult' as:

- Grown man or woman, mature person.
- Plant or animal that has reached full growth.
- One who is legally of age. Opposed to minor.

Adulthood can be defined in terms of

- biology
- psychological adult development
- law, and personal character, or social status.

These different aspects of adulthood are often inconsistent and contradictory. A person may be biologically an adult and have adult behavioural characteristics, but still be treated as a child if he/she is under the legal age of majority. Conversely, one may legally be an adult but possess none of the maturity and responsibility that define adult character.

Most modern societies determine legal adulthood based on reaching a legally-specified age without requiring a demonstration of physical maturity or preparation for adulthood. Although adult education simply means education for adults, not particularly sex education, 'adult' also means 'not considered suitable for children' in particular as a euphemism for being related to sexual behaviour.

Now let us look at the components in the above definition given to 'adult'

A. Biological Adulthood

Adulthood is generally understood as the time when physical maturation is complete. One reaches their maximum height and secondary sex characteristics form such as body hair and facial hair, voice lowers in peach (especially noticeable in men), and menses begin (women). Natural sleep patterns change in adulthood, as adults typically require less sleep than during adolescence. One thing people don't specify is what (psychologically) an adult is. A common theory is that adulthood is the real test of life, to experience the world from a first-person standpoint instead of through the parents. Then the parent can pass those experiences down to younger people and they can experience them when they grow up.

B. Legal Adulthood

Legally it means that one can engage in a contract. The same or a different minimum age may be applicable to, for example, parents losing parenting rights and duties regarding the person concerned, parents losing financial responsibility, marriage, voting, having a job, being a soldier, buying/possessing firearms (if legal at all), driving, traveling abroad, involvement with alcoholic beverages (if legal at all), smoking, sex, gambling (both lottery and casino), being a prostitute or a client of a prostitute (if legal at all), being a model or actor in pornography, etc. Admission of a young person to a place may be restricted because of danger for that person, and/or because of the risk that the young person causes damage (for example, at an exhibition of fragile item).

The legal definition of entering adulthood usually varies between ages 15 – 21, depending on the region in question.

C. Personal Characteristics

There are some qualities that symbolize adultness in most cultures. Not always is there a concordance between the qualities and the physical age of the person.

The adult character comprises:

- **Self-control** – restraint, emotional control.
- **Stability** – stable personality, strength.
- **Independence** – ability to self-regulate.
- **Seriousness** – ability to deal with life in a serious manner.
- **Responsibility** – accountability, commitment and reliability.
- **Method/Tact** – ability to think ahead and plan for the future, patience.
- **Endurance** – ability and willingness to cope with difficulties that present themselves.
- **Experience** – breadth of mind, understanding.
- **Objectivity** – perspective and realism.
- **Decision making capability** – as all of the above correspond to making proper decisions.

2.1.2.2 Adult learning

The first inkling that the pedagogical model may not be appropriate for adults appeared in a book by Eduard C. Lindeman, "The Meaning of Adult Education", in 1926. According to Lindeman adults were not just grown-up children, that they learned best when they were actively involved in determining what, how, and when they learned. This growing body of knowledge about adult learners was labeled Andragogy. It was initially used to mean "the art and science of helping adults learn". It is a term that is now widely used around the world as an alternative to pedagogy

The pedagogy and Andragogy models have a number of implications for trainers. One basic implication is the importance of making a clear distinction between a content plan and a process design. What does this distinction signify? It highlights that the process is more important than the content. Thus, how it is taught is relatively more important than what is being taught.

2.1.2.3 Characteristics of Adult Learners

Adult learners have characteristics that set them apart from traditional school or college learners. All adults come to courses with a variety and range of experiences, both in terms of their working life and educational back grounds. This impacts on how and why they participate in learning.

While each student has individual learning needs, there are some characteristics that are common to adult learners:

A. Adults have accumulated life experience.

Adults come to courses with experiences and knowledge in diverse areas. They tend to favour practical learning activities that enable them to draw on their prior skills and knowledge. Adults are realistic and have insights about what is likely to work and what is not. They are readily able to relate new facts to past experiences and enjoy having their talents and knowledge explore in a teaching situation.

B. Adults have established Behaviour

Adults have established opinions, values and beliefs which have been built up over time and arrived at following experience of families, relationships, colleagues, work community, politics, etc. These views cannot be dismissed and must be respected.

C. Adults are intrinsically motivated.

Learners increase their effort when motivated by a need, an interest, or a desire to learn. They are also motivated by the relevance of the material to be addressed and learn better when material is related to their own needs and interests. For learners to be fully engaged in learning their attention must be fully focused on the material presented.

D. Individual differences.

Adults learn at various rates and in different ways according to their intellectual ability, educational level, personality and cognitive learning styles. Teaching strategies must anticipate and accommodate differing comprehensive rates of learners.

E. Adults learn best in a democratic, participatory and collaborative environment.

Adults need to be actively involved in determining how and what they will learn, and they need active, not passive, learning experiences.

F. Adult students are mature people and prefer to be treated as such.

Being ‘lectured at’ causes resentment and frustration.

G. Adults are goal oriented/relevancy oriented.

Adults need to know why they are learning something. Adults have needs that are concrete and immediate. They can be impatient with long discussions on theory and like to see theory applied to practical problems. They are task or problem-oriented rather than subject-centered. Adults tend to be more interested in theory when it is linked to practical application.

Considering the abovementioned characteristics of adult learners, we have to treat them differently from the other types of learners. Teaching methodologies and the curriculum of adult learners should be targeting their specific characteristics, needs and wants

H. Adults are autonomous and self-directed.

They are self-reliant learners and prefer to work at their own pace. Individuals learn best when they are ready to learn and when they have identified their own learning needs. Where a student is directed by someone else to attend a course e.g. by an employer, then that individual may not be ready to learn or may not see the value in participating on that course. This can lead to a mismatch of goals between all parties – student, employer and trainer.

I. Adults are practical and problem-solvers.

Adults are more impatient in the pursuit of learning objectives. They are less tolerant of work that does not have immediate and direct application to their objectives. Problem based learning exercises are welcomed as they build on prior experience and provide opportunity for practical application of materials/theories covered.

J. Adults are sometimes tired when they attend classes.

Many students are juggling classes with work, family, etc. They, therefore, appreciate varied teaching methods that add interest and a sense of liveliness to the class.

K. Adults may have logistical considerations, including:

- Family and caring responsibilities including childcare and/or eldercare
- Careers
- Social commitment
- Time
- Money
- Schedule
- Transportation

L. Ageing concerns.

Adults frequently worry about being the oldest person in a class and are concerned about the impact this may have on their ability to participate with younger students. Creating an environment where all participants feel they have a valuable contribution can work to allay such concerns

M. Adults may have insufficient confidence.

Students come to class with varying levels of confidence. Some may have had poor prior experiences of education leading to feelings of inadequacy and fear of study and failure.

Part of being an effective instructor involves understanding how adults learn best. Compared to children and teens, adults have special needs and requirements as learners. Despite the apparent truth, adult learning is a relatively new area of study. The field of adult learning was pioneered by Malcolm Knowles. He identified the following characteristics of adult learners;

i. Adults are autonomous and self-directed
ii. They have accumulated a foundation of life experiences and knowledge
iii. Adults are goal-oriented
iv. They are relevancy-oriented
v. They are practical.

2.1.2.4 Tips on learning situations for adults

Adult learners prefer learning situations which:

A. are practical and problem-centered, so

- Give overviews, summaries, examples, & use stories to link theory to practice
- Discuss and help them plan for direct application of the new information
- Use collaborative, authentic problem-solving activities
- Anticipate problems applying the new ideas to their setting so, offer suggestions
- **CAUTION** – guard against becoming too theoretical

B. promote their positive self-esteem. Towards this end:

- Provide low-risk activities in small group settings
- Plan for building individual success incrementally
- Help them become more effective and confident through guided practice and establishing routines
- **CAUTION** – readiness to learn depends on self-esteem

C. integrate new ideas with existing knowledge. Towards this end:

- Help them recall what they already know from prior experience that relates to the topic of learning
- Share your agenda and assumptions and ask for input. Adjust time for topics to fit their needs
- Use a continuum that describes a range of skill & knowledge. Ask them to apply stickers or marks showing what their current level of knowledge/skill is in the topic(s)
- Ask what they would like to know about the topic
- Build in options within your plan so you can easily shift to address needs
- Suggest follow up ideas and next steps for support and implementation after the session
- **CAUTION** – collect needs data & match the degree of choice to their level of development

D. show respect for the individual learner, so …

- Provide for their physical needs through breaks, snacks, coffee, comfort
- Provide a quality, well organized, differentiated experience that uses time effectively and efficiently
- Avoid jargon and don't "talk down" to participants
- Validate and affirm their knowledge, contributions and successes
- Ask for feedback on your work or ideas, provide input opportunities

- **CAUTIONS** – Watch your choice of words to avoid creating negative perceptions

E. capitalize on their experience, so …

- Don't ignore what they already know, it's a resource for you
- Plan alternative activities and choice so they can adjust the process to fit their experience level
- Create activities that use their experience and knowledge
- Listen and collect data about participant needs before, during and after the event
- **CAUTION** – Provide for the possibility of a need to unlearn old habits or confront inaccurate beliefs

F. allow choice and self-direction, so …

- Build your plans around their needs, compare desired behaviours (goals) & actual behaviours
- Share your agenda and assumptions and ask for input on them
- Ask what they know already about the topic (their perception)
- Ask what they would like to know about the topic
- Build in options within your plan so you can easily shift if needed
- Allow time for planning their next steps
- **CAUTION** – Match the degree of choice to their level of development. Also, since there may be things that they don't know, use a mix of their perception of needs AND research on needs and organizational needs and calendar to guide your planning

2.1.3 Adult Learning

2.1.3.1 Malcolm Knowles: Andragogy versus Adult Learning

In the mid-1960s Malcolm Knowles first used the term “Andragogy” to describe adult learning. Whilst pedagogy is generally used to describe, “the science of teaching children” Andragogy relates to, “the art and science of helping adults learn” (Knowles, 1970).

Knowles is the first to clearly theorize how adults learn and describe adult learning as a process of self directed inquiry. Knowles argued that:

- Adults have a need to know why they should learn something. The adult has to consider it important to acquire the new skill, knowledge or attitude
- Adults have a need to be self-directing and decide for themselves what they want to learn
- Adults have a far greater volume and different quality of experiences than young people so that connecting learning experiences to past experiences can make the learning experience more meaningful and assist the participant to acquire the new knowledge
- Adults become ready to learn when they experience a life situation where they need to know
- Adults enter into the learning process with a task centered orientation to learning
- Adults are motivated to learn by both extrinsic and intrinsic and intrinsic motivation

As an educator you can provide real or simulated experiences through which the learner can experience the positive benefits of knowing and the negative of not knowing. Teaching should be commenced by creating a climate of mutual trust and clarification of mutual expectations with the learner: In other words a cooperative learning climate.

Allow for as much choice as possible in making decisions during the learning experience. The teacher needs to create a mechanism for mutual planning to help adults diagnose their needs. The objectives and the learning activities can be designed specifically to suit their needs.

Encourage participants to recount workplace experiences. Try to link new learning activities to previous experiences of participants. Positive reinforcement enhances learning. Training can be linked with promotion, added responsibility, power and esteem.

Whereas Andragogy refers to teaching adults, pedagogy refers to teaching children. (Andragogy – from the Greek “aner”, means adult; pedagogy – from the Greek “paid”, means child). Let us have a look at the quick comparison between Andragogy and pedagogy.

Table 2.1 ‘Pedagogy’ and ‘Andragogy’ Compared

Assumption about	Pedagogy	Andragogy
Concept of the learner	Dependent on teacher (passive)	Increasingly self-directed (active)
Role of teacher	Authority figure	Guide and facilitator
Role of learners’ prior experiences	To be added to more than used as a resource	A rich resource for learning by self and others
Readiness to learn	Uniform by age level and curriculum	Develops from life tasks and problems
Orientation to learn	Subject centered	Task or problem-centered to meet life needs
Motivation	By external rewards and punishments (“credit”)	By internal incentives and curiosity

2.1.3.2 Carl Rogers and Adult Learning

In his book “Freedom to Learn” Carl Rogers (1969), another educational pioneer, distinguished two types of learning: cognitive (meaningless) and experiential (significant). Cognitive is seen as academic knowledge while the experiential equates to the learning by doing.

Rogers saw the qualities of experiential learning as personal involvement, self initiated, evaluated by the learner and having pervasive effects on the learner.

To Rogers, experiential learning is equivalent to personal change and growth. Rogers feels that all human beings have a natural propensity to learn; the role of the teacher or facilitator is to facilitate such learning. This includes:

- setting a positive climate fir learning,
- clarifying the purposes of the learner(s),
- organizing and making available learning resources,
- balancing intellectual and emotional components of learning, and
- sharing feelings and thoughts with learners but not dominating.

According to Rogers, the adult learning process is facilitated when:

- the student participates completely in the learning process and has control over its nature and direction,
- it is primarily based upon direct confrontation with practical, social, personal or research problems, and self-evaluation is the principal method of assessing progress or success.

2.2 Principles of Adult Learning

2.2.1 Principles of Adult Learning

Malcolm Knowles, the founding father of andragogy, has developed six principles of Andragogy. These principles are described in terms of their usability in designing a training programme for adults. (Knowles, M. 1983)

2.2.1.1 The need to know:

Adults are internally motivated and self-directed. Therefore, they need to know why they need to learn something before undertaking to learn it. In adult education, the task of the facilitator of learning is to help the learners. Facilitators can make an intellectual case in improving the effectiveness of the learners' performance or the quality of their lives. Even more effective tools are exercised in which the learners discover the gaps between where they are now and where they want to be.

2.2.1.2 The learners' self-concept:

Adults are responsible for their own decisions and for their own lives. They show antipathy and refuse to accept the situations in which they feel others are imposing their wills on them. Adult educators make efforts to create learning experiences in which adults are helped to make the transition from dependent to self-directing learners.

2.2.1.3 The role of the learners' experiences:

Adults are experienced by virtue of simply having lived longer in a greater volume than that of youths. They accumulate different kind of experience which has several consequences for adult education. It assures that in any group of adults there will be a wider range of individual differences and will be more heterogeneous in terms of background, learning style, motivation, needs, interests, and goals. Therefore, greater emphasis in adult education is placed on individualization of teaching and learning strategies.

Many kinds of learning resources exist within the adult learners themselves. Thus, the emphasis in adult education is on experiential techniques—techniques that tap into the experience of the learners, such as group discussions, simulation exercises, problem solving activities, case methods, and laboratory methods instead of transmittal techniques. Also, greater emphasis is placed on peer-helping activities.

2.2.1.4 Readiness to learn:

Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations. The critical implication of this assumption is that the importance of timing learning experiences to match with developmental tasks. For example, high school students are not ready to learn about infant nutrition or marital relations but let them get engaged after graduation and they will be very ready for more responsibility. There are ways to

encourage readiness through exposure to models of superior performance, career counseling, simulation exercises, and other techniques.

2.2.1.5 Orientation to learning:

Adults are life-centered in their orientation to learning. They are motivated to learn to the extent that they perceive that learning will help them perform tasks or deal with problems that they confront in their life situations. Furthermore, they learn new knowledge, understandings, skills, values, and attitudes most effectively when they are presented in the context of application to real-life situations.

2.2.1.6 Motivation:

Adults are responsive to some external motivators (e.g. better jobs, promotions, higher salaries, and the like), but the most potent motivators are internal pressures (e.g. the desire for increased job satisfaction, self-esteem, quality of life, and the like). Tough (1979) locates in his research that all normal adults are motivated to keep growing and developing, but this motivation is frequently blocked by such barriers as negative self concept as a student, inaccessibility of opportunities or resources, time constraints, and programs that violate principles of adult learning.

2.2.2 Characteristics of adult learners:

The discussion above indicates that compared to children and teens, adults have special needs and requirements as learners. Malcolm Knowles identifies the following characteristics of adult learners:

2.2.2.1 Adults are autonomous and self-directed.

Adult learners are able to make their own decisions and to manage their own life. They are responsible for their own learning. They need to be free to direct themselves. They tend to be self-directed and want control over their own learning. They are mature people and prefer to be

treated as such. They learn best in a democratic, participatory, and collaborative environment. They need to be actively involved in determining how and what they learn and they need active rather than passive learning experiences. They are self-reliant learners and prefer to work at their own pace.

Therefore, teachers of adult learning programmes must actively involve adult participants in the learning process and serve as facilitators for them. Specifically, they must get participants' perspectives about what topics to cover and let them work on projects that reflect their interests. They should allow the participants to assume responsibility for presentations and group leadership. They have to be sure to act as facilitators, guiding participants to their own knowledge rather than supplying them with facts. They must show participants how the class will help them reach their goals.

2.2.2.2 Adults Have Life Experience and Knowledge

Adults have accumulated a foundation of life experiences and knowledge that may include work-related activities, family responsibilities, and previous education. They need to connect learning to this knowledge/experience base. To help them do so, they should draw out participants' experience and knowledge which is relevant to the topic. They must relate theories and concepts to the participants and recognize the value of experience in learning. Adults have useful past experience. They are more realistic and have insights about what is likely to work and what is not. They are more readily able to relate new facts to past experiences. They bring their own experiences and knowledge into the classroom. They like the type of learning that gives them practical activities that build on their prior skills and knowledge.

One of the universal initial needs of adults is to learn how to take responsibility for their own learning through self directed inquiry which include how to learn collaboratively with the help of colleagues rather than to compete with them and how to learn by analyzing their own experience.

2.2.2.3 Adults are goal-oriented.

They know what goal they want to attain. Therefore, they appreciate an educational program that is organized and has clearly defined elements. Instructors must show participants how this class will help them attain their goals. This classification of goals and course objectives must be done early in the course. Adults are more impatient in the pursuit of learning objectives.

2.2.2.4 Adults are relevancy-oriented.

They must see a reason for learning something. Learning has to be applicable to their work or other responsibilities to be of value to them. Therefore, instructors must identify objectives for adult participants before the course begins. Adults are intrinsically motivated. They are motivated by internal incentives and curiosity rather than external rewards. They are also motivated by the usefulness of the material to be learned and learn better when material is related to their own needs and interests.

2.2.2.5 Adults are practical,

Adults are practical, focusing on the aspects of a lesson most useful to them in their work. Instructors must tell participants explicitly how the lesson will be useful to them on the job. In adult education, educators should be person-centered who help persons to learn how to cope with the problems they face in their career. The organization of curriculum should be treated in the context of the practical concerns of the learners. Adults have needs which are concrete and immediate.

2.2.2.6 Adults need to be Shown Respect

As do all learners, adults need to be shown respect. Instructors must acknowledge the wealth of experiences that adult participants bring to the classroom. These adults should be treated as equals in experience and knowledge and allowed to voice their opinions freely in class.

2.3. The importance of Adult learning in Agricultural Extension

2.3.1 Introduction

The key role of adult education is to allow adults to develop their skills and acquire new ones. This helps them to perform their activities effectively and efficiently to achieve their objectives. Being able to access further education is particularly important for adults in disadvantaged groups, such as poor people or women.

With respect to farmers adult learning will make exchange of information and technology adoption easy which is the need and objective of extension programs. Farmer training is education that most often takes place outside formal learning institutions. It differs from education in schools because it is geared towards adult learning.

One of the aspects of adult education that pertains to agricultural training deals with motivation to learn. In pedagogical learning, teachers decide the content to be delivered to students as well as how and when the teaching is to take place. Adults on the other hand, begin new learning ventures with some ideas of what they will gain from doing so. It is necessary, then, that extension agents discover what it is a farmer wants to learn. This may seem like a natural step

and perhaps not worth much emphasis. Nonetheless, failure to accommodate a farmer's interests is a common pitfall. Extension agents often assume the teacher's role and decide for the farmer what he/she needs to know. The drawback to this approach is that the farmer is apt to resist. Decisions on the content and method of training must be the shared responsibility of farmers and extensionists. The common purpose which emerges from such choices leads to sense of cooperation necessary for learning to take place. A cooperative spirit in adult learning is important because it allows for the sharing of useful knowledge and skills adults bring with them to a new learning situation. Children have less experience to offer. Their classroom activities are characterized by modes of one-way communication, lectures, assigned readings and audio-visual presentations. By contrast, the past experience of adult learners is central to adult learning, so activities such as discussion, role playing, and skills-practice are designed which use that experience as a foundation for further learning.

2.3. 2. The importance of Adult Learning

Adult learning has many advantages to the learners including:

2.3.2.1 Effective Participation in Decision making

Adult learning enhances the ability of learners to analyze current situation, identify problems and find solutions. This in turn makes adults decisive in making relevant decision.

2.3.2.2. Improved technology Utilization

Learned individuals are easily exposed to new and improved technology through reading and information exchange. Once they are exposed to the available technology they will be willing to use it. Adult learning improves learners' utilization of technology.

2.3.2.3. Enhanced Working Efficiency

Work efficiency is the greatest amount of tasks and labor accomplished with the least amount of time and effort. Excellent work efficiency can lead to high levels of productivity. Organizations might often encourage employees to improve their work efficiency because this can promote success in the business. Working efficiency will be enhanced through learning.

2.3.2.4. High Competency in Economic Competition

Economic competition is a scenario where individuals are in contention to obtain goods that are limited by varying the elements of the marketing mix: price, product, promotion and place. Adult learning enables individuals keep up in a growing economic competition

2.3.2.5. Self Employment

Adult learning is self-directed learning. Self Directed Learning, (SDL), recognizes the significant role of motivation and volition in initiating and maintaining learner's efforts. SDL is an immensely useful concept for orienting oneself to education at all level. It will make people decide for themselves. Self employment emerges from this. Adult learning is important in making individuals decide to be engaged in self employment.

2.3.2.6 Financial Growth and Benefit

Making use of the above described points Adult learning enables adults to benefit from what they do and financially grow.

2.4. Adult Learning Method

2.4.1 Introduction

Adult learning methods should depend on the learning style of adults. To understand adult learning method it is important to see what learning style means.

2.4.2 Learning Style

A learning style is the method of learning particular to an individual that is presumed to allow that individual to learn best. It is the way individuals think, perceive and remember information, or their preferred approach to using such information to solve problems.

2.4.2.1 Dimensions of Learning Styles

Dimensions or characteristics of learning style represent preferred ways individuals have for engaging in the learning process. Some learners are **quick** to respond when presented a problem to solve or question to answer. Others are more **reflective** despite being as informed and expert as the more impulsive group.

2.4.2.2 Types of Learning Styles (Learning Methods)

The types of style of learning vary based on the context. Some may see it from behavioural point while the other sees from mentality and personality. Some of them are presented here.

- **Visual (Spatial):** you prefer using pictures, images, and spatial understanding
- **Aural (auditory)**: you prefer using sound and music
- **Verbal**: you prefer using words, both in speech and writing
- **Physical (kinesthetic)**: you prefer using your body, hands and sense of touch
- **Logical**: you prefer using logic, reasoning and systems

- **Social**: you prefer to learn in groups or with other people
- **Solitary**: you prefer to work alone and use self-study

Your learning styles have more influences on your learning than you may realize. Your preferred styles guide the way you learn. They also change the way you intentionally represent experiences, the way you recall information, and even the words you choose. The following table depicts the rational differences between Auditory, Visual and Physical styles of learning with understandable examples.

Table 2.2 Understanding and identifying Auditory, Visual and Kinesthetic learning styles

Auditory	Visual	Kinesthetic
Identify sounds related to experience	Have a sharp, clear picture of an experiences	Develop a strong feeling towards an experience
I **hear** you clearly	Do you **make pictures** in your head	Do you **feel** what you are saying
I want you to **listen** … This **sounds** good	Do you have visual images in your head as you are talking and listening to me? Can you **see** what I'm saying?	Are you in **touch** with what I am saying?
How do you **hear** this situation going? What do you **hear** that is stopping you? **Sounds** heavy	How do you **see** the situation? What do you **see** stopping you? This **looks** good Do you **see** what I am **showing** you?	How do you **feel** about this situation? I'm **getting a handle** on this material Let's **move** together Does what I'm putting you in **touch** with **feel** right? Sounds **heavy**
Word selections	**Word selections**	**Word selections**
tinkling silent squeal blast screaming chocking	color clear spiral showed vivid notice	felt body sensations feel pain touch
Lecture Do you love me? Auditories complain: Kinesthetic don't listen	Fantasies Visuals complain: Auditories don't pay attention to them because they don't make eye contact	 Kinesthetics complain: "Auditory and visual people are insensitive"

2.5. Understanding the role of adult learning

2.5.1 The Role of Adult Learning

2.5.1.1 Change in Behaviour of the Individuals

Adult education is an instrument for change. It helps to modify the behaviour of individuals in the community in many ways. It helps to improve the critical thinking quality of the individuals. It modifies behaviours of people towards production through acquisition of knowledge and skills in relevant occupations. It develops individuals respect for standard. It modifies individuals moral quality to an acceptable level by community members. It helps to reduce the menace or criminal behaviour of individuals resulting from ignorance and illiteracy. It also helps to develop individuals creativity and independent living. It makes individual to become an acceptable member of his community through systematic adjustment.

2.5.1.2 Development of Economic Activities in the Community

Economic activities in certain communities are pluralistic and require certain level of knowledge and skill development for success. Pluralistic economic activities in a community involves many diverse skilled jobs for deriving wealth for living by individuals. Some of these are in form of business interest, that is, movement of goods and services from one community to another which involves mobility of people from one community to another for exchange of goods and services to sustain life. This mobility may involve clear understanding of needs of customers, pricing of commodities, effective bargaining to make profit, understanding of language of others, respect for others culture, traditions , privacy and other behaviour typical of community members. Ability to achieve success in business through overcoming difficulties in the above diversities require certain level of civilization resulting from education.

2.5.1.3 Effective Participation in Political and Economic Matters Affecting the Community

An educated individual is expected to exhibit the thinking habit, acceptable attitude, developed initiative, management skills towards **decision-making** in economic and political matters affecting his community and beyond (Oreh, 2001). The individual should be able to manage his own economy to reduce wastage and help to direct the thinking and behaviours of others towards political benefits of the community. He should be able to assist the community in planning for economic and political gains beyond his immediate environment. Adult education should be able to develop him to be sensitive to the economic needs of others and to help reduce poverty among the less privilege in his environment.

2.5.1.4 Maintenance of Good Understanding and Healthy Relationship with other Communities

Many communities are unique while some others are diverse in relation to language, culture, political interest, economic development, social and religious interest, members of a community, in most cases, interact with members of other communities in many diverse ideas, policies and cultures. In order to maintain these understandings and relationship among diverse groups of specific interest between one community and the relationships among diverse groups of specific interest between one community and the others, members of these communities must be provided with that level of education that could help foster cordial relationships, peace, unity and progress without much bias to diversity in principles and beliefs.

2.5.1.5 Recognition of Community Rights

Certain rural/suburb community members are deeply entrenched in their community culture to the extent that they believe that cultural rights are the only legacies they have. They guide jealously these cultural rights and behaviour and cannot develop interest in participating in

anything else in the community (Olaitan, 2006). Such communities appear to be primitive and are left behind in development. Majority of their cultures and beliefs are relatively primitive and conservative. That is, they do not change and members of the community will resist any change in the culture and practices of their ancestral parents handed over to them and through many generation.

With increase in Adult Education of members of the community, some of these practices are now giving way to better understanding of relationships with other communities and benefits that should accrue to them from the government to which they belong. With education, members are more competitive in development, they are more jealous about what other communities possessed but they are denied. They now learn how to demand for their right from government. With education, they know how to communicate directly with their government for provision of basic needs. Educated adult members of the community are interested in demanding from the government either through individuals or delegation of members to government officials for provision of electricity, water, good roads, security, markets, housing, communication equipment, higher education, agricultural technologies among others as their right from government.

2.5.1.6 Moral and Spiritual development of Community Members

In many communities in the past, traditional religion was in vogue. This religion was associated with secret rituals and cultism. People's freedoms were restricted at specific period of the year and time of the day when these rituals were to take place. Many people were afraid and fearful of ritual site. Some of which were desolate and decorated with embarrassing materials. In some places, traditional worshippers made people to take oath and upon the death of oath takers all their belongings including their wealth become the properties of the gods and goddesses (Olaitan, 2006). Such communities can become impoverished, underdeveloped and retrogressive in amenities. Visitors fear living in such places. The market places, roadsides are never spared as fearful ritual sites. Only members of that community that is traditionally involved that can stay near these ritual sites during market days or at festival

Morally, in some traditional communities, it is a taboo for matured men to limit themselves to just one wife. The ideas of free friendship are very frequent. It is not regard as a moral problem to engage in illegal friendship with women that are married close to relations. With Education and Adult Education particularly in the community, these practices are influenced to produce more acceptable spiritual and moral behaviour. For instance, religious institutions develop their own education through the support of community facilities either through the church or the mosque. Young men and women started divorcing their traditional spiritual beliefs and becoming engaged in civilized religious faith and practices. Today, may community members have accepted good moral standards and are involved in domesticating them for the benefits of their families.

2.5.1.7 Economic Benefits

Adult learning can improve employability and income, which is a key pathway to realizing a range of other benefits. For example, it enables people to some extent, choose and shape the context in which they live and work and even increase their social status.

2.5.1.8 Acquiring New Skills and Knowledge

Adult learning enhances acquiring of new skills and knowledge. Adult learning helps people to meet with others, having different skills in different occasions. When people meet for training purpose they take time to share their knowledge and skill with others.

2.5.1.9 Increases Experiences Sharing

Adult learning facilitates experience sharing. Adults have various experiences accumulated from different exposure. This accumulated knowledge will be shared with colleagues, friends and others when things are facilitated

Self-Check 2	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided below.

I. Choose the best Answer from the given alternatives and write the letter of your choice on the space provided

___ 1. Teaching can be defined as:

A. Imparting Knowledge B. The profession of a leader C. Imparting skill

D. A and B E. A and C

___ 2. Learning can be defined as

A. Acquiring Knowledge B. Acquiring C. Giving information

D. A and B E. A and C

II. Write 'True' if the statement is correct and 'False' if it not correct

_____ 3. A purpose is the fundamental goal of education

_____ 4. Most learning occurs during formal training

_____ 5. Informal learning is a lifelong process

III. Define "Andragogy: _____

Note: Satisfactory rating - 10 points **Unsatisfactory - below 10 points**

You can ask you teacher for the copy of the correct answers.

Name: _____ Date: _____

LG #44	LO #3- Integrate Gender in Agricultural Extension

Instruction sheet

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

- The concept of gender
- Creating gender awareness and sensitization
- The role of gender in agriculture
- Implementation of gender mainstreaming

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

- The concept of gender is understood to provide inclusive agricultural extension services
- Gender awareness and sensitization is created to increase the contribution of gender in agricultural development
- The role of gender in agriculture is determined to enhance agricultural development.
- Gender mainstreaming is implemented for effective outcome of extension services

Learning Instructions:

9. Read the specific objectives of this Learning Guide.
10. Follow the instructions described below.
11. Read the information written in the information Sheets
12. Accomplish the Self-checks

Information Sheet-3

3.1 The Concept of Gender

3.1.1. Definition of Gender

The term Gender has become a word of the day and it is used by different kinds of people all over the world. Giving different definitions depends on the condition that they exist. But what does it usually means?

Gender is learnt through a process of socialization and through the culture of the particular society concerned. In short, gender refers to the roles, behaviour, attitudes and activities that society assigns to men and women. It refers to the power relations between men and women in a given society. Gender refers to the "socially determined ideas and practices of what it is to be female and male", (Reeves and Baden, 2000). These ideas and practices are sanctioned and reinforced by a host of cultural, political, and economic institutions, including the household, legal and government structures, markets and religions.

Gender refers to socially constructed identity of a person and the socially learned behaviour and expectations that are assigned to a person based on one's sex. Gender is a dynamic concept, and how it plays out in any one culture varies across time and across regions. Like the categories of race, ethnicity, and class, gender assigns people to social categories that determine our social relation with others and our environment. These gender roles and responsibilities create that a social structure that affects our daily lives.

The gender of a person shaped by the society and by its ways of upbringing children. Gender is therefore the result of the interplay of cultural, religious and similar factors of a society. Gender starts in childhood in the household. Gender relations are justified and normalized in different

ways. They are transmitted to or internalized by children via action or role demonstration by those who assume the roles, proverbs and sayings, songs, etc. e.g. among the proverbs are: "Woman's saliva is thick"; "Men for court, and women for kitchen". According to the culture and norms of the society there exist different kinds of proverbs and songs that show the dominancy of men and the inferiority of women in different regions.

The kinds of games girls and boys play vary among each other. Girls are not encouraged to play games like football, which involve vigorous physical activity and physical contact with each other; boys are often not allowed to play with dolls or play as homemakers. Boys who do not engage in rough physical games are thought to be "sissies".

Emotional responses of girls and boys are expected to respond differently to the same stimulus: while it is acceptable for girls to cry, it is seen as a weakness in boys.

In many cultures boys are encouraged in the acts considered to display male traits (and girls vice-versa) through the toys given to children (guns for boys, dolls for girls), the kind of discipline meted out, the jobs or careers to which they might aspire, and the portrayal of men and women in the media.

Children learn their gender from birth. They learn how they should behave in order to be perceived by others, and themselves, as either masculine or feminine. Throughout their life this is reinforced by parents, teachers, peers, their culture and society. To determine gender however, social and cultural perceptions of masculine and feminine traits and roles must be taken into account.

Gender has become an important factor since the 1970s and the term is widely used to explain the position of women **with respect to men** in different aspects of life. In sum, though sex plays a significant part in the way a human's gender is defined, gender is also a result of social and ideological experiences mediated by socialization.

Gender is, therefore, very much focused on empowering women in their relationship with men. It emphasizes a bottom up rather than a top down approach to management. It seeks to facilitate women becoming more self-reliant, through changing and transforming practices and structures such as labour codes, civil codes, neighbours and cultural customs and property right that have been disadvantageous to them, (Mosse, 1993).

3.1.2 Gender Division of Labor(GDoL)

3.1.2.1 Triple roles of gender

In all societies men and women play different roles, have different needs, and face different constraints. Gender roles differ from the biological roles of men and women, although they may overlap in nearly all societies. Gender roles are socially constructed, learned, & dynamic. They demarcate responsibilities between men and women in social and economic activities, access to resources and decision-making authority. Society assigns different roles to men and women. These gender-differentiated roles are moreover shaped by ideological, historical, religious, ethnic, economic and cultural determinants. These roles may show similarities and differences between societies within a country and between countries. Yet, the different roles can generally be categorized in to three. These are:

A. Productive

B. Reproductive and

C. Community management**.**

Productive role: work done to obtain payment in cash or kind. Includes marketable goods that have exchange value and consumable goods (at home) which have use value. Both women and men undertake this role. Yet, the role is mainly considered to be men's role and even if women undertake the role it is mostly unrecognized. e.g. Wage workers, farming activity.

Reproductive role: There are three levels at which the term is used. These are biological reproduction, labour reproduction and social reproduction. Biological reproduction comprises child birth and lactation while labour reproduction involves the daily regeneration of the labour force through cooking, cleaning, washing, nursing and so on. Social reproduction on the other

hand is an all embracing category that is maintenance of ideological conditions which reproduce class relations and uphold the social and economic states quo. In most societies, reproductive role mostly tend to fall upon the shoulders of women. Since they work to transform goods and services for household use and welfare; women remain outside the domain of public life and politics. Moreover, if one looks at the condition how they are performing their task (energy and time requirement as well as valuation), it is tedious, and non-remunerative.

Community management: These are activities undertaken at local community level. Includes voluntary, unpaid, or paid work undertaken in "free & volunteer time". It is important for the spiritual and cultural development of communities and as a vehicle for community organisation and self determination. It is the role of both women & men. Nevertheless, in most cases men's participation is paid in cash or kind (status & leading position). e.g. Idir, Ekub, Debo, wedding, funeral, security….

Mostly the triple role of women is not recognized. Productive work is considered as work while reproductive and community activities are not. These two are seen as natural and non productive. They are not valued as well. This has a negative consequence. Majority of the work done by women becomes invisible and has a contribution for not properly understanding the needs of women which arises from their different role that they play in the society. According to conventional feminism, the GDoL in many societies is unequal or favors men over women. Women are made responsible for repetitive, time consuming and not economically rewarding activities of maintaining the labour force. Such activities tie the women in the HH, while men predominate in the public sphere performing activities that are rewarding.

This is not to argue that there is no difference in physical strength between men and women. Rather natural difference between men and women can not be the justification for the gender based division of labour.

3.1.2.2 Practical & Strategic Gender Needs/ Interests

Men and women in a given society have different needs and interests. These needs and interests, with respect to their gender relations could be summarized as: a) Practical gender needs and, b) Strategic gender interests

A. Practical Gender Needs (PGN)

- These needs tend to be responses to immediate & short-term necessity. They relate to daily needs: food, housing, health, employs.
- Are easily identified by women
- Addressing practical needs of women can improve the condition of their lives but does not change (alter) traditional roles and relationships of gender.
- The needs are socially accepted and do not challenges the existing gender relations (division of labour).
- They are practical in nature and are identified in a specific context (unique to particular women or men)
- The WID approach to development mainly focuses on this need of women.

B. Strategic Gender Needs (SGN)

Also, known as strategic interests referring to needs of power or capacity to have 'control over one self'

- They tend to be responses to long-term necessity
- They relate to disadvantaged position: subordination, lack of resources & education, vulnerability to violence, burden of domestic labour and child care etc. Hence they focus on equal wages, legal rights, and so on both at household and community (state) level and so on.
- Addressing SGN can improve the position of women in society and empower them and change (transform) the existing gender relations to achieve greater equality.
- The needs vary depending on the particular cultural and socio-political context within which they are formulated
- The GAD approach to development focuses on both the practical and the strategic needs of women.

PGN & SGN cannot be defined in absolute terms since they may differ for different societies depending upon the difference in the standard of living.

3.1.3 Historical Development of Gender (Policy Approaches to Women)

History has known a number of approaches to development to solve the economic ills of the third world. In the 1950s development was seen as the process of rising per-capita income. This approach was based on the assumption that economic growth is the solution for all social evils of underdeveloped nations. However this approach proved to be inadequate. On the contrary, the gap between the rich and the poor became ever wider and wider. These approaches failed to achieve their goals partly because they completely ignore women and their contributions to the efforts of development. The approaches are leveled as a top-down approach. The approaches during this time ignored women and their contribution to the efforts of development. The development efforts experienced exacerbate the condition of the third world women favoring men at the expense of women. Activities of women were not valued in the accounting of the GDP. The activities women are, in most cases, involved in include unpaid activities which are not valued or taken into the accounting of the GNP. Irene Tinker, while explaining the reason why development disadvantaged women, emphasized on the failures of planning. That is, the absence of proper planning as the cause of the adverse effects of development on women. First, planners fail to recognize women's traditional productive roles. Secondly, such development efforts reinforced the already prevailing values that relegate women to the reproductive activities.

In the mid 1970s, it was widely recognized that alternative strategies that focus on people both as subject and objects of development was needed. Hence came the client- oriented/people centered participatory development approach. The approach was a response to improve the basic needs of third world countries. Unlike the previous approaches, this one seemed to have room for women. However it does not take the facts of women's lives into consideration.

This shift in approach coincided with additional women movement and research. The realization that men and women are situated and impacted by development differently has led for the attention of women's issue which developed into gender issues.

Since the late 1970's many approaches in women issues in relation to development have been coined. **WID** and **GAD** are two approaches that **take into account the difference between men and women**. However, they do have some conceptual and strategic difference between them in the way they address the problems of women.

3.1.3.1 WID – Women in Development approach/movement

Is an approach to development that was originated in the late 1970's during which time the UN brought women's issues into its agenda. Though it was only much later that women's concern surfaced in the global development agenda, women's movement has a much earlier origin as far back as the 1940s. Therefore, WID is a result of women's movement and more importantly, the publication of Easter Boserup's book: 'Women's role in economic development' where she exposed haw development marginalized women. Such pressure made it impossible for the UN to ignore the issue. The approach is still used by some development agents.

The rational argument of this approach is that women are unused resources who can provide economic contributions to development. The approach stimulates networking among women and has been successful in increasing development workers awareness of women's distinct priorities, situations and concerns. With the realization of women's contribution to development, it was advanced that their efforts should be enhanced through necessary material and technical support. The approach designed strategies to integrate women into the development process and ensure efficiency focused on improving their situation through the provision of basic necessities. It treats women as special beneficiaries in development programs. The approach perceives problems of women in terms of their 'sex' – their biological differences from men. Nutrition, health, education, child care, family planning and skills training were some of the major components of the WID programs.

However, in the 1980's it became evident that targeting women as a group with special needs in isolation from men had some limitations. This is because it is the overall structural factors in society. That is, the rules & practices of the household, community, school, market and State which sustains women's systematic subordination. These needs to be addressed understood & effectively changed. Hence, this led to the need to deal with women in terms of their gender relations. Since then "gender" became an important development variable.

3.1.3.2 GAD – Gender and Development approach/movement

A more recent approach (since mid 80s), which perceives the problem of women in terms of their 'gender'. That is their social relationship with men in which they have been systematically subordinated. It believes that focusing only on women is ignoring the real problem i.e. their position to men.

The approach places emphasis on analyzing the incentives and constraints under which women & men work, in order to "make visible" the difference between them in terms of work loads, the impact of interventions, and their access & control to resources & decision making. It also allows women to participate at all stages of development process. It believes that the use of a participatory approach helps to empower women by raising their consciousness, as well as their voices about their needs and rights. However, we sometimes find this movement coexisting in aid work. GAD starts with satisfaction of PGNs, yet at the same time it focuses on mobilization of community which is needed to overcome structural inequalities. The approach is not concerned with women per se, but with social construction. It seeks to understand the root cause of gender inequality. The approach is based on two strategies: considering the interests of both men & women in general programs and special support for women because women often begin from a relatively disadvantaged position.

3.1.4 The concept of sex

"Sex" refers to the permanent and immutable biological characteristics common to individual in all societies and cultures. It is also connected with biology, i.e. fixed, unchangeable qualities and universal to all human beings throughout the world. People are born biologically female or male that is given from GOD. The sex of an individual can be changed through medical treatment through surgery in developed countries, if it is needed.

Sex refers to biological identity of a person. A person is born either male or female, determined by their sexual organs. Sexual differences are the same throughout the world, across culture, and time.

Sex, as defined by Susan Basow, is a biological term referring to people, animals, etc., being either **female** or **male** depending on their sex organs or genes. Sex also refers to the differences between individuals that make them male or female. These differences are biologically determined.

Box 3.1: The sex difference between Men and Women

MEN	WOMEN
Have no developed uterus	Have a developed uterus
Have a penis	Have a vagina
Have underdeveloped breast	Have developed breast
Grow a beard	Do not grow a beard

Sex is therefore biologically determined. According to Stoller;

"… to determine sex one must assay the following physical conditions: chromosomes, external genitalia, internal genitalia, hormonal states and secondary sex characteristics … One's sex then is determined by an algebraic status of all these qualities, and as is obvious, most people fall under one of two separate bell curves, the one of which is called 'male' and the other 'female'."

3.1.5 “Gender” and its differences with “Sex”

‘Gender’ is different from ‘sex’ in that sex refers to the biological difference between male and female while gender is **socially constructed**. People are born biologically female or male, but they learn femminity and masculinity. That is, they are brought up to act and behave to be girls, and boys who grow into women and men. They are, therefore, **shaped by the society to learn the socially accepted behaviour, attitude, roles** etc. These learned characteristics are what make up gender identity and determine or govern gender roles in a given societal context. On the other hand, people are born biologically female or male. As such they are essentially unchangeable and universal throughout all human societies.

Biological and physical conditions (chromosomes, external and internal genitalia, hormonal states and secondary sex characteristics), lead to the determination of male or female sex. To determine gender however, social and cultural perceptions of masculine and feminine traits and roles must be taken into account.

Sometimes there is a tendency to refer to women when dealing with gender without looking at their relationship with their male counterparts. Many mistake the differences among the different gender groups brought about by socio-cultural factors, for natural sex differences and consider it as GOD given phenomena. We should therefore, take care not to refer to women or men per see, but to the **relationship between them**.

It is generally acknowledged that “gender” is not a substitute term for “Sex”, as we are born into fairly unambiguous sexual categories (female and female). Our gender (feminine and masculine) is usually ascribed by society on the basis of our sex (Collard and Joyce, 1991).

Every society uses biological sex as one criterion for describing gender but, beyond that simple starting point, no two cultures would completely agree on what distinguishes one gender from another. Therefore, there is considerable variation in gender roles between cultures.

Some people claim that gender issues are not important since they don't differentiate between women and men but work with 'all'; however such a claim is not valid. If we want equally positive results for all, we have to **make a difference** in how we approach the different groups of people co-existing in the community. This is due to the fact that the social starting position of men and women differ. For instance, women are not supposed to travel far and cannot do it easily, they are taught to keep quiet in meetings and so on while it is vice versa for their men counterparts.

It is that in all societies, social factors underlie and support gender based disparities through: institutional arrangement, the formal legal system, socio-cultural attitudes and religious practices. Such differences between men and women and disparities should, therefore, be part of the "baseline" situation in which you should plan your intervention

Box 3.2 Differences between Sex and Gender

Gender	Sex
• Socially constructed • Dynamic concept • Determined by culture, societies, norms etc. • Varies across time and regions	• Biologically constructed • Static concept • Determined by GOD • Same around the world

3.1.6 The Importance of Gender

All conscientious extension workers should like to see there works benefit each & every farmer (including women, poor, young) not just the easier to-reach subgroups like rich –male farmers**.**

Gender identity in a given society governs the allocation of resources, tasks and power at the level of the individual, the household and society. Hence, we should be able to understand and be sensitive to the existing gender relationship in a given society and act, plan, and design our activities accordingly.

Some people claim that gender issues is not important since they don't differentiate between women and men but work with 'all', however such a claim is not valid. If we want equally positive results for all, we have to **make a difference** in how we approach the different groups of people co-existing in the community. This is due to the fact that the social starting positions of men & women differ. For instance, women are not supposed to travel far and can not do it easily, they are taught to keep quiet in meetings and so on while it is vise versa for their men counterparts. It is true that in all societies, social factors underlie and support gender based disparities through: institutional arrangement, the formal legal system, socio-cultural attitudes and religious practices. Such **differences between men & women and disparities** should, therefore, be part of the "baseline" situation in which you should plan your interventions.

Different authors argue the need to deal with gender issues from two aspects:
The instrumental argument - to reach the basic objectives of a project due to the gender division of labour. E.g. If the project deals with post harvest activities it definitely should consult women because they are more responsible for this activity.

The fairness argument- some projects might reach their goal(s) with our taking gender in to account, but the situation of women might worsen. Hence, in this argument women's problem needs equal attention as the men!

3.2. Creating Gender Awareness and Sensitization

3.2.1 Gender awareness

Gender awareness is the "**ability to view society from the perspective of gender roles and how this has affected women's needs in comparison to the needs of men**"

We are all influenced by gender. Our ideas and experiences about gender affect what we do and how we relate to others in every aspect of our lives. We must be willing to examine our personal views and experiences in order to raise our level of gender awareness.

3.2.1.1 Gender Awareness Raising

Gender awareness raising aims at increasing general sensitivity, understanding and knowledge about gender (in)equality.

Awareness raising is a process which helps to facilitate the exchange of ideas, improve mutual understanding and develop competencies and skills necessary for societal change. Gender awareness raising means providing reliable and accessible information to build a better understanding of gender equality as a core value of democratic societies. As a **gender mainstreaming method**, gender awareness raising is crucial for integrating a gender perspective into policies, programmes, projects and services that respond to the different needs of women and men. (European Institute for Gender Equality, 2019)

Gender awareness raising aims to promote and encourage a general understanding of gender-related challenges, for instance, violence against women and the gender pay gap. It also aims to show how values and norms influence our reality, reinforce stereotypes and support the structures that produce inequalities.

Gender awareness raising plays an important role in informing women and men about gender equality, the benefits of a more gender-equal society and the consequences of gender inequality. For example raising awareness about the proven economic benefits of advancing gender equality, such as the strong, positive impact on gross domestic product (GDP) and higher levels of employment, and about the profound negative impact of gender inequalities, for instance, the fact that women are at a higher risk of poverty because of lower employment prospects.

Gender awareness raising intends to change attitudes, behaviours and beliefs that reinforce inequalities between women and men. It is therefore crucial to develop awareness-raising methods that generate a favourable space for debate, promote political interest and encourage mobilisation. In this way, they contribute to gaining broad support and political will for implementing gender mainstreaming and gender equality policies.

Gender awareness raising goes hand in hand with gender equality training as a way to transmit the necessary information and knowledge to take action. This is especially true for the actors involved in policy processes, as it enables them to create interventions that address women's and men's priorities and needs

The purpose of gender awareness raising is threefold:

- to provide basic facts, evidence and arguments on various topics relating to gender equality to increase awareness and knowledge about gender (in)equality;
- to foster communication and information exchange so as to improve mutual understanding and learning about gender (in)equality;
- to mobilise communities and society as a whole to bring about the necessary changes in attitudes, behaviours and beliefs about gender equality.

3.2.1.2 How Gender Awareness Raising Works

Gender awareness raising can be a part of internal awareness-raising processes in an organisation or institution and/or it can be a part of planned external activities directed to the general public or a targeted group.

As a gender-mainstreaming method, raising awareness of gender equality can be considered to be a specific activity to be implemented within policies, programmes or projects. To be effective, the process of awareness raising must identify and meet the needs and interests of the actors involved. This can be achieved by paying attention to the following key issues.

A. Who is the target group?

Before starting any gender awareness-raising initiatives, the socio-demographic characteristics (e.g. sex, age, race and/or ethnicity, level of education and any other relevant characteristics) of the target group should be considered in order to develop tailored awareness-raising initiatives. In addition, opinion leaders can also be selected as a sub-segment of the target audience because, as influential members of a group, they can promote societal change.

B. What is the content of the message?

The message communicated and the content of awareness-raising activities should be designed and framed around the specific gender equality topics under consideration. The way the message is conveyed and framed can influence how it is perceived and the overall effect it has. Framing factors include the choice of words and imagery, using emotions or facts and rational arguments, and presenting the consequences of (in)action as losses or gains. Importantly, the content of the message should be credible. It should communicate information that is accurate and perceived as such, based on data with an acknowledgement of the source.

C. Which gender awareness-raising measures should be used?

The type of awareness-raising measures selected will depend on the context and the identified aims in terms of policy, programme or project. An integrated communication programme, which combines different channels, is advisable to reinforce the message. This may include:

- communication initiatives that aim to widely disseminate key messages, involving large-scale media such as television, newspapers, radio and websites;
- public events (e.g. concerts, information booths at festivals, etc.) to convey the message to a specific target group, such as young people;
- social media and social networks, which offer the possibility of interactivity and the potential for the viral dissemination of the message online;
- community-based initiatives in a local context to mobilise communities, empower women and promote community dialogue on gender equality, for example, through:
  - ✓ public meetings,
  - ✓ presentations,
  - ✓ workshops,
  - ✓ informal social events using interpersonal and participatory approaches;
- static and travelling exhibitions and displays;
- printed materials — for example brochures, billboards, cartoons, comics, pamphlets, posters, resource books and audio-visual resources;
- political advocacy and lobbying.

D. The importance of using gender-sensitive language

Language plays an important role in how women's and men's positions in society are perceived and interpreted, which in turn influences the attitudes towards women and men. Certain words or use of the masculine form as the generic one (common in most languages) can overshadow women in the law, contribute to stereotypes (for instance, in professions), and make women's roles and needs invisible, among other things. In this way, language contributes to, produces and reproduces sexist and biased thoughts, attitudes and behaviours.

While **gender-neutral language** is not gender-specific and makes no reference to women and men, **gender-sensitive language** is gender equality made manifest through language. In practice, using gender-sensitive language means:

- avoiding exclusionary terms and nouns that appear to refer only to men, for instance, 'chairman', 'mankind', 'businessman', etc.;
- avoiding gender-specific pronouns to refer to people who may be either female or male (use 'he/she', 'him/her' or 'they/them' instead of 'he/his');
- avoiding stereotypes, gendered adjectives, patronising and sexist terms and expressions (for instance, referring to women as 'bossy', or 'the weaker sex') and references to women's marital status and titles.

3.2.2 Gender Sensitization

Gender sensitization is the teaching of gender sensitivity and encouragement of behavior modification through raising awareness of gender equality concerns. It refers to the raising sensitization of gender equality concerns. Gender sensitization helps people in examining their personal attitudes and beliefs and questioning the realities of both sexes.

Gender sensitization help people modify their behaviour by raising awareness of gender equality concerns. Gender sensitization theories claim that modification of the behavior of teachers and parents (etc.) towards children can have a causal effect on gender equality. It helps people in "examining their personal attitudes and beliefs and questioning the 'realities' they thought they know."

Gender sensitivity is the ability to recognize gender issues, especially women's different perceptions and interests arising from their unique social location and gender roles. It calls for an understanding and consideration of the socio-cultural factors underlying discrimination based on sex (whether against women or men).

Gender Sensitization can be achieved by conducting various sensitization campaigns, workshop, program etc. Sensitization in the domain of Humanities and Social Sciences, is seen as "the awareness informed disposition or propensity to behave in a manner which is sensitive to gender justice and equality issues."

Gender sensitization can induce restructuring of gender roles based on efficiency and can help realize higher productivity of men and women in household and outside work through rational and effective use of resources including available time.

Gender sensitization is all about changing behavior and instilling empathy into the views that one hold about ones own sex and other sex. It acquaints men and women with each other‟s existence and helps to generate respect for the individual regardless of sex. In a patriarchal society gender bias begins from the birth, women are discriminated in areas like access to nutrition, childcare, education and work. Patriarchy is a social system which considers male as superiors and gives them more rights and more access to resources and decision making. Traditional roles of women as homemakers and men as bread winners imposed by society have only reinforced the gender imbalance. Many academicians and intellectuals argue that in the modern societies there are no devaluation of women and they are considered as equals in each and every field. No doubt there has been a lot of changes regarding the status and rights of women in the these societies but this doesn‟t change the mindset of people living in a patriarchal society nor does it increase the value of women in a male dominant society. In a society where women have been discriminated against men for centuries changes cannot be brought about by giving special rights to women but we need to change the mental makeup and thinking about women. People need to be made more and more **aware and sensitized** about gender inequality and the problems it creates in the society. **Gender sensitivity** is the act of being aware of the ways people think about gender, so

that individuals rely less on assumptions about traditional and outdated views on the roles of men and women.

3.2.2.1 Need of Gender Sensitization

In many countries with vast diversity existing in terms of customs, traditions, rituals, social values, family beliefs, and individual perception, the need for a more systematic, well planned and more professional approach is desired to inculcate gender sensitivity and primarily highlight the contribution of both the genders in creation and development of a well balanced society. The main problem of these societies is lack of women recognition and appreciation for women's involvement in multifarious activities. The men, who are reluctant to acknowledge women's contribution, come forward under the influence for sensitization to recognize their contribution. The gender sensitization process develops understanding that women do posses wisdom and therefore they must be involved in decision making process. They have concerns and therefore should be treated with dignity and equal chance in sharing of social and economic benefits.

3.2.2.2 Need of Gender Sensitized Society

Gender sensitization is the process of changing the stereotype mind set of men and women - a mind set that strongly believes that men and women are unequal "entities" and hence have to function in different socio economic space. Gender sensitization tends to change the perception that men and women have of each other. It creates a mind set in men that no longer sees in women the stereotypical image .The impression that women are a weak and unequal entity no more clouds the minds of common man. Rather they are seen as responsible and equal partners in socio economic development. Women also tend to develop the perception that they are no subordinate to men and they have an equally important role to play in decision making at household, community and organization level.

3.3. The Role of Gender in Agriculture

3.3.1 Women's Contribution in Agricultural Production

The Ethiopian agriculture is the backbone of the country, which sometimes as close to 45 percent of GDP, 85 percent of foreign exchange earnings and 80 percent of the population depends directly on it. Increasing agricultural productivity is an essential goal of development. In recent decades there has been a growing recognition that women as well as men are productively engaged in agricultural systems, knowledge of the factors affecting both women's and men's productivity is required.

In some regions, women and men farm separate plots having different farming systems. In the case of Ethiopia, both men and women tend to work together on the 'family farm'. Yet, literature shows that women play an important role in peasant agriculture of Ethiopia, contributing more than 50 percent of **the total labour force**, with much contribution to tasks such as weeding, harvesting, processing and other post-harvest operations.

Ethiopia has a large potential of land, water, and mineral resources. Despite of such resources, the country is still one of the least developed countries with per capita income. This allocation of resources to the advantage of men has left women behind in all aspects of the benefits of development. Women in Ethiopia play multiple and overlapping roles, which have increasingly put pressure on their health, food security, productivity, and potential. In nation like Ethiopia, where women are more than half of the population and most of them live in the rural part of the country, rural women development will translate directly into improved quality of life and well-being for the majority of the population (Belay, K., and Etenesh, B., 1997). In Ethiopia, men are generally favored at all social levels when it comes to the division of resources.

Women's biological reproductive role demands most of their time, but unfortunately is viewed as non-economic and carries no rewards or remuneration. Women are meant to meet the reproductive needs of the family. Their job is to collect fire wood, fetch water, care for the children, spend long hours in washing clothes, cooking food and feeding, cleaning the household surrounding, etc., and doing motherly roles. Women engage in agriculture activity like planting, weeding, harvesting, and processing but their contribution to the sector was not taken into account. Similarly, we think that the supervision of agricultural development programs is the pedagogy of men folk.

It is observed that major emphasis in agriculture is given to men's activities while the roles of women and children in the Ethiopian farming systems have been ignored. So far, **the extension system** in Ethiopia is unable to address the cultural taboo against the participation of female farmers in plowing and sowing, which subsequently reduce the rigid Division of Labour (DoL) of both at the household and field levels.

Not many extensive studies have been done to fully capture rural women's contributions to agricultural production in Ethiopia. As a result, women are of course an integral part of farming households. They produce over half of the food in many developing countries, bear most responsibilities for household food security and contribute to household wellbeing through their income generating activities. These women's contribution to agricultural output is normally underestimated. Nevertheless, existing literature reveals that women representing more than ½ of the labour required to produce food consumed in developing countries. Yet, women usually have more limited access to resources and opportunities and their productivity remains low relative to their potential.

The roles that women play in agriculture vary from region to region and country to country. Men and women often have complementary roles, sharing or dividing tasks in crop production, livestock raising, fishing, and in care and use of forests. As men and women play different roles their technology needs may differ. Hence, the challenge for agricultural research is to begin to better-specified research towards specific group in order to increase both inter-gender equity and efficiency. Despite the importance of women in agriculture, their roles in the process of production and utilization aspect of the produce and their knowledge about natural resource management have been overlooked. Although women in developing countries in general share a similar way of life in that they are subordinate to men, the extent may vary from place to place depending upon culture, religion, and some other factors

One problem here is reaching at a common understanding as to how female farmers are perceived in the Ethiopian society. Observations indicate that a female farmer is commonly perceived as a co-farmer and as marginal players in agricultural development particularly by

those individuals with significant influence in research, extension and rural development positions. As a result, there is no as such a female farmer and a male farmer, and hence do not need a separate extension advice.

Women are the invisible agricultural producers in peasant society. Across the agrarian communities of the world they contribute to physical work of farm production as well as supporting the livelihood of the farm household in many other ways.

Over the years, with gradual realization about **gender equity**, women have been putting in more labour not only in terms of physical output but also in terms of quality and efficiency. Except heavy physical labour like soil conservation, women are able to perform other farming operations more efficiently than men. In spite of their diligence, there has been wide discrimination in their wages and women are offered only half of the wage compared to men. This has demoralized women and prevented them from taking greater initiatives.

It is important to stress that women farmers cannot be considered to be a homogenous category, sharing exactly the same sort of problems and facing the same constraints. While it is possible to draw out some common principles, which allow a broad definition of the condition of "women farmers" , it needs to be recognized that there is considerable diversity also. There is diversity also among women (age, marital status, economic class, ethnicity, and so on). For instance, female headed households should be given special emphasis by extension programs because they belong generally to small farmer category.

There are enough evidences to prove that if given the opportunity the women can make a sustainable contribution to the national economy especially in agriculture production. Researchers have now realized that neglecting women as agricultural producers and resources managers have weakened every link in the chain of sustainable agricultural production. Women's roles in agriculture and food production, their participation in extension activities will strengthen rural development strategies and food security at national and world level.

In the same manner, econometric evidence on gender differences in agricultural productivity point out the importance of investing in women. Key findings are:

- Women farmers are as efficient as men farmers, once other characteristics and input levels are controlled for
- Women farmers under perform in agricultural production because they lack access to information, credit, extension, input etc.
- The gradual feminization of agriculture in many countries makes attention to women farmers necessary in implementing agricultural policy and programs.

3.3.2 Women's Participation in Agricultural Extension

Making female farmers targets in extension makes sense for agricultural and rural development at different levels because:

- It improves productivity, income and status of rural women in tern enhancing the wellbeing of rural households
- It helps the nations to achieve their goals pertaining to food self-sufficiency and export through developing both genders human resource base and
- It maximizes the utilization of scarce extension resources

The challenge for extension planners is to ensure that both women and men farmers are targeted as extension clients and to identify the appropriate means of directing training and technologies to them. This is due to the reasons that agricultural extension programs that ignore women's farming roles risk low returns, inefficiency and in the long run, failure to achieve development objectives. Extension activities carried out without the participation of women farmers risk having negative impacts on women and their families. Nevertheless, the productivity and welfare of rural households can be maximized when both women and men farmers participate in extension activities that is relevant to their roles as agricultural producers.

Evidence from many countries shows that women usually do not benefit automatically from agricultural projects. Gender-neutral programs can sometimes bypass or be detrimental to women.

- Predominantly extension services are geared primarily to male farmers. This is evidenced in :
- Delivery systems staffed by males;
- Extension methods that often preclude women e.g. Contact farmer method, requiring resources with women have limited access.
- Segregated pattern of training topics e.g. agricultural information for men & home economics for women

Taking the case of Ethiopia it is true that the ratio of women clients in extension and female extension personnel is very small. This shows that, whether by design or by default, the result is male-to-male delivery.

Beyond their status as producers, a number of factors play a role in determining whether or not women farmers are included in extension programs. The barriers are categorized in to four headings:

3.3.2.1 Resource based barrier

Women farmers have most of the time low resource base, thus are not sought by extension services. Lack of technology, lack of access to credit, low literacy, small size of land (small holders) are some constraints related to resource. Some studies reveal that women's right to land is one constraint. In some areas religious laws forbid female land ownership. Even when civil laws give women the right to inherit, local customs may rule otherwise. As a result, formal titles are given to men only. Women have the right to use but have no control (ownership). Even the use needs the consent of a male relative due to lack of ownership that is reserved to men. This results in women's lack of incentive to be involved in extension.

3.3.2.2 Education based barrier

It is true that better educated farmers are more likely to adopt new technologies and to have access to extension services. It is again true that the gap between women & men's literacy rates is high in rural areas. This gap, therefore, has implication for women farmers' adoption of new

technology. e.g. a case study in Kenya reveals that improving the primary education of women farmers helped them in the adoption of improved coffee growing technology by copying from other women farmers.

3.3.2.3 Time related barrier

Frequency of tasks and gender related responsibilities determine the amount of time men & women will have available each day. It is clear that women are more involved than men in routine, time-consuming activities; therefore, time availability is more of a constraint for them. They have loess total time available than men to participate in extension activities. Also their free time may not coincide with that of the men.

3.3.2.4. Mobility related barrier

Women's freedom to move inside and outside the community is restricted in some society due to their reproductive roles, social or religious reasons, less cash to pay for transport, fewer means of transportation available. This also has a noticeable impact on women's involvement in extension activities.

3.3.3. Gender Differences in Agricultural Labour (Gender Issues in Agricultural Labour)

Making the rural labor market a more effective pathway out of poverty is . . . a major policy challenge that remains poorly understood and sorely neglected in policy making.(World Development Report 2007)

Total labor in agriculture has declined in most countries, and this trend will continue as countries industrialize. Over half of all laborers worldwide, however, rely on the agricultural sector. In sub-Saharan Africa and South Asia, 70 percent or more of the labor force works in agriculture. In many regions more women than men are employed in agriculture. In the Middle East more than twice as many women work in agriculture as men, and in South Asia close to one-third more

women are working in the sector than men (fig. 8.1). Most work in agriculture is onerous, and the returns are lower than in other sectors. Improving the quality and quantity of jobs in rural areas, and in agriculture, for both women and men, has been identified as a means of promoting economic growth and reducing poverty (World Bank 2007; Heintz 2006). The most significant positive impact on agricultural labor will come through creating a dynamic rural economy in both the agriculture and the nonfarm sectors, focusing primarily on creating a good investment climate (World Bank 2007). This dynamism will assist poor men and women laborers, who both face many constraints in terms of lack of access to resources and power.

Gender inequalities in all labor markets are pervasive. Gender inequalities in the agricultural sector are more difficult to quantify but are equally extensive. Reducing labor inequalities makes good development sense. Reducing labor market segmentation and wage inequalities improves the mobility of labor and increases employment. Simulations of Latin American economies show both a reduction of poverty and an increase in economic growth by increasing women's labor force participation; a 6 percent expansion of growth was shown to be possible if men's and women's wages were equal.

The contribution of women's work to family and society is significant, through their productive and reproductive roles; however, if the quantity and quality of that work are poor, or if they reinforce patriarchal gender practices, the negative effects on their health and that of their children can attenuate the development impact. Yet, to the extent that the empowerment of women is an end in and of itself, responsible employment for rural women can increase confidence, promote participation in community activities, and contribute to a perception on the part of women of a better life

The majority of agricultural wage laborers in many countries, particularly women, either are working on land owned by spouses, families, or neighbors or are hired in informal markets. Most women working in agriculture thus typically do not have contracts that provide them direct control over the returns to their labor or that legally oblige employers to provide benefits or adhere to existing labor laws. (World Bank, 2008).

3.3.4 Gender Differences within Rural Labour Markets

In addition to differences in male and female labour participation rates noted earlier, there are also major gender differences in employment patterns within labour markets for several reasons which hold across cultures and regions. Most importantly, as a result of household and child-rearing, women are not only much less likely to participate in the labour force, those who do are also much more likely to engaged in self-employment activities rather than higher-paying wage employment. Due to child care responsibilities economically active women often leave the labour market and thus accumulate less work experience. As a result of time constraints women are also more likely to work in part time jobs and in informal arrangements that pay less and/or provide fewer benefits, but provide more flexibility. Women are also more concentrated in certain phases or activities of the supply chain (e.g. packaging, post-processing). Occupational segregation into low-technology occupations limits the opportunities to generate new skills and capabilities, thus hindering future professional development and reinforcing the discrimination towards these sectors as low-pay and low-status occupations. Finally, there is a well documented pay gap in urban labour markets - likely to exist in rural labour markets as well – in that women are paid less even for equivalent jobs and comparable levels of education and experience.

3.4. Gender Mainstreaming

3.4.1 Gender mainstreaming Defined

Gender-mainstreaming is a process rather than a goal. Efforts to integrate gender into existing institutions of the mainstream have little value for their own sake. We mainstream gender concerns to achieve gender equality and improve the relevance of development agendas. Such an approach shows that the costs of women’s marginalization and gender inequalities are born by all.

The process by which reducing the gaps in development opportunities between women and men and working towards equality between them become an integral part of the organization's strategy, policies and operations, and the focus of continued efforts to achieve excellence.

UN ECOSOC describes gender mainstreaming as "the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality". (ECOSOC, 1997). [ECOSOC Agreed Conclusions 1997/2]

3.4.2 The Importance of Gender Perspective

It is essential to understand that while poverty affects both men and women members of a household, it affects them in different ways, since their roles are substantially different. Any solution to poverty-related problems needs to take these differences into account. This is why gender issues should be important within the scope of development activities. If an effective contribution to rural development is to be made, projects must contribute to the improvement of living conditions of all members of poor, rural families, regardless of race, class, age or gender.

In any rural development activity, a number of gender issues need to be taken into account, because different "gender relations" exist in each and every cultural context. Gender relations refer to a complex system of personal and social relations of domination and power through which women and men are socially created and maintained and through which they gain access to power and material resources or are allocated status within society.

Gender is about men and women; it is not synonymous with men and women. Strengthening gender in development is a process. Sex, on the other hand, refers only to the biological and physiological differences between men and women. Men and women are not the same: they are not equal nor will they ever be, due to physical and biological conditions. Gender, however, does not refer to the biological differences but to the social and cultural structure that defines what it is to be a "man" and what it means to be a "woman" in a given society and cultural setting. The definition of these roles, as defined by a given community, results in a division of labour based

on gender, i.e., based on differences between men and women with respect to their problems, needs, priorities and proposals for solutions, participation and access to productive resources and opportunities for development.

Gender analysis helps us identify where and what kind of inequities may exist between men and women with regard to legal rights, opportunities for personal development, access to productive resources, political participation, etc. Often, but not always, women are at a disadvantage, due to the fact that most societies are dominated by men and based upon a patriarchal structure. Because of these existing disadvantages, it is not sufficient to provide equal (or the same) access to services for men and women. Special conditions need to be created to facilitate the participation of the most disadvantaged groups, thus filling the existing "gender gaps". Gender inequalities in the communities require differentiated treatment of men and women beneficiaries.

More specifically, gender analysis in a project setting helps both project staff and beneficiaries identify and analyse, within a community:

- factors that limit or facilitate equal participation of men and women in development processes;
- who does what within the household and within the community;
- what access and control men and women have over resources and income; and
- their needs and priorities.

Together, these variables can be called the "gender organization" of a community and are context-specific.

Since gender relations are a social construct, they can be changed. It is therefore within our means and our responsibility as "development agents" to support the transformation of communities towards more democratic and equitable societies. Projects are instruments for the implementation of national and international policies and are created to induce or strengthen processes of change. Although societies are based on traditions and customs, these eventually change with time. The same is true for gender relations. Thus rural development projects should

ensure gender-mainstreaming in all activities in order to contribute to the creation of a more equitable society.

It is also worth noting that a "gender perspective" encompasses two dimensions: **the material and the ideological.** In rural development, **the material dimension** refers to an instrumental approach that seeks to correct the manifestations of gender inequities; whereas **the ideological dimension** refers to a transformative approach that attempts to tackle the root causes of gender inequities. If they are to contribute to changing rural peoples' living conditions in a substantial way, development projects should attempt to address both the material and ideological dimensions.

Gender mainstreaming is a holistic, comprehensive and multidimensional process that is public and political, but also personal. The objectives of mainstreaming gender issues in rural development projects are to:

- reduce gender inequities that may exist in a given project area;
- encourage both men and women to participate in project activities; ensure that their specific needs are satisfied, that they benefit from the project and that the project impacts positively on their lives;
- create the conditions for the equitable access of men and women to project resources and benefits;
- create the conditions for the equitable participation in project implementation and decision making processes.

In order to achieve its objectives regarding gender, a project should ensure that:

- there is a strategy for mainstreaming gender;
- staff have an awareness of gender sensitive issues;
- the project incorporates methods which will facilitate the participation of both men and women;
- the monitoring and evaluation system incorporates gender disaggregated data and provides gender impact indicators;

- adequate human and financial resources are available.

3.4.3 The Importance of Gender Mainstreaming

Gender mainstreaming is an important strategy because:

it puts people at the heart of policy-making:

Mainstreaming equality issues may contribute to underlining the need to base and to evaluate any single policy according to its impact on the concrete situation of individuals and social groups, be they women or men, with their particular endowments and needs. Such an approach will improve the practice of basing and evaluating general policies (global and sectoral, national, regional or local) according to their results on the wellbeing of the people and will open avenues to replace the "traditional" practice of employing abstract economic and ideological indicators (such as GDP and similar data considered neutral and expressed in average values) by more relevant and valuable indicators regarding the concrete well-being of people. It will introduce, among politicians and public opinion, a learning process of paying attention to the broad effects of policies on citizens' lives. Gender mainstreaming may also be a way of placing very crucial facets to women's and men's lives on the agenda, facets that have not been items of attention in the past. Mainstreaming gender equality may be a step forward to a more human and less economic approach of the general development and management of contemporary democratic societies. By taking the gender equality perspective into account, policies will be better defined in terms of the real needs of women and men. The lives of all people, both women and men, will thus improve. In this sense, gender mainstreaming is a real win-win strategy.

it leads to better government

Gender mainstreaming should lead to better informed policy-making and therefore better government. It will challenge the assumption that policies are gender neutral – which they never are – and reveal the hidden assumptions on reality and values. It will lead to a greater transparency and openness in the policy process.

it involves both women and men and makes full use of human resources

Until now, work for the promotion of gender equality has mostly been undertaken by a few women. Gender mainstreaming would involve many more people, both women and men. It would also make clear that society nowadays is dependent on using all human resources, and the experience of both women and men. It acknowledges the shared responsibility of women and men in removing imbalances in society. Finally, by involving a broader range of external actors in the policy process (see chapter II.4), gender mainstreaming might help to reduce the democratic deficit, which characterizes many current democracies.

it makes gender equality issues visible in the mainstream of society

Gender mainstreaming will give a clear idea of the consequences and impact of political initiatives on both women and men, and of the balance between women and men in the area concerned. Gender equality issues will become visible and will be integrated into the mainstream of society, whereas until now they have always been on the sidelines. It should show that gender equality is an important societal issue with implications for all and for the development of society, and that it is not just a "cost" or a "luxury".1 Gender mainstreaming recognizes that the imbalance between women and men cannot be efficiently combated without the interest, involvement and commitment of the political system and of society as such. It will change attitudes towards gender equality, too often negative, and launch a new debate on equality issues, from a different angle to the usual one.

it takes into account the diversity among women and men

It is generally acknowledged that women – and men – are not a homogenous group.2 In order to pay due attention to this diversity, policies and policy instruments have to allow for taking diversity into account. Gender mainstreaming may be able to target better the particular situation of different groups of women where specific equality policies have so far not been successful, because it leaves room for diversity. From a gender mainstreaming perspective, the problem is not the fact that there are differences but that they are connected to a hierarchical ranking and that there is a danger of measuring all citizens to a male norm. In this sense gender mainstreaming goes a step further than merely working towards gender equality. It leaves room for non-hierarchical diversity in general, be it in terms of sex, race, class or a combination of factors. In other words, it takes into account that human beings are not abstract subjects, but that

they have particular identities. This side-effect of mainstreaming as a strategy to promote gender equality is a positive one for the whole of society.

3.4.4 Understanding Gender Equality

Gender equality is a goal that has been accepted by governments and international organizations. It is enshrined in international agreements and commitments. There are many ongoing discussions about what equality means (and does not mean) in practice and how to achieve it.

It is clear that there are global patterns to inequality between women and men. For example, women tend to suffer violence at the hands of their intimate partners more often than men; women's political participation and their representation in decision-making structures lag behind men's; women and men have different economic opportunities; women are over-represented among the poor; and women and girls make up the majority of people trafficked and involved in the sex trade. These issues – and others – need to be addressed in efforts to promote gender equality.

Achieving greater equality between women and men will require changes at many levels, including changes in attitudes and relationships, changes in institutions and legal frameworks, changes in economic institutions, and changes in political decision-making structures.

Gender equality means an equal visibility, empowerment and participation of both sexes in all spheres of public and private life. Gender equality is the opposite of gender inequality, not of gender difference, and aims to promote the full participation of women and men in society.

For a long time – and it is often still the case – gender equality was defined as giving girls and boys, women and men, de jure equal rights, equal opportunities, equal conditions and equal treatment in all fields of life and in all spheres of society. Nowadays, it is recognised that equality de jure does not automatically lead to equality de facto. It is important to understand that men's and women's living conditions are very different – to some degree because of the childbearing function of women. The main point is not the mere existence of such differences,

but the fact that these differences should not have a negative impact on the living conditions of both women and men, should not discriminate against them and should contribute to an equal sharing of power in economy, society and policy-making processes. Gender equality is not synonymous with sameness, with establishing men, their life style and conditions as the norm.

In order to define gender equality, a closer look has to be taken at the gender concept. Two aspects are important in this context: the social construction of gender and the relationship between the sexes.

Gender is a socially constructed definition of women and men. It is the social design of a biological sex, determined by the conception of tasks, functions and roles attributed to women and men in society and in public and private life. It is a culture-specific definition of femininity and masculinity and therefore varies in time and space. The construction and reproduction of gender takes place at the individual as well as at the societal level. Both are equally important. Individual human beings shape gender roles and norms through their activities and reproduce them by conforming to expectations. There is a growing awareness that gender has to be considered also at a political and institutional level. Policies and structures play a very important role in shaping the conditions of life, and in doing so, they often institutionalize the maintenance and reproduction of the social construction of gender. A history of discrimination and restraining roles is unconsciously written into everyday routines and policies.

Gender is not only a socially constructed definition of women and men, it is a socially constructed definition of the relationship between the sexes. This construction contains an unequal power relationship with male domination and female subordination in most spheres of life. Men and the tasks, roles, functions and values contributed to them are valued – in many aspects – higher than women and what is associated with them. It is increasingly recognised that society is characterized by this male bias: the male norm is taken as the norm for society as a whole, which is reflected in policies and structures. Policies and structures often unintentionally reproduce gender inequality.

Gender equality means accepting and valuing equally the differences between women and men and the diverse roles they play in society. Gender equality includes the right to be different. This means taking into account the existing differences among women and men, which are related to class, political opinion, religion, ethnicity, race or sexual orientation. Gender equality means discussing how it is possible to go further, to change the structures in society which contribute to maintaining the unequal power relationships between women and men, and to reach a better balance in the various female and male values and priorities. Looking back at the two aspects of the gender concept discussed above, this implies calling into question the domination of ways of life, thinking and interests associated with men and the way in which our societal structures reproduce this norm. The problem is gender hierarchy, not women. The quintessence is to assure that the social construction of gender leaves room for difference and does not contain a notion of hierarchy placing men higher than women. It implies a real partnership between women and men and their shared responsibility in removing imbalances in public and private life. It is a question of using the competencies, skills and talents of each and every citizen, of involving both women and men in building society, solving problems and preparing the future. Society, in order to develop, is dependent on the utilization of all human resources, and both women and men must participate fully to meet the different needs of society.

Gender equality must be constantly fought for, protected and promoted – like human rights, of which it is an integral part. Achieving gender equality is a continuous process that has to be constantly put into question, thought about and redefined. At present, the most important targets for gender equality include the following aspects:

- An important target is the recognition and full implementation of women's rights as human rights. This includes effectively respecting, protecting and promoting the human rights of both women and men and, by taking the necessary measures, enabling both women and men to enjoy fully these rights. It also means combating interferences with women's liberty and dignity (combating violence against and trafficking in women or forced prostitution, promoting free choice in matters of reproduction and lifestyles, addressing the specific problems of migrant and minority women).
- Besides human rights, the development and improvement of representative democracy is the most important pole. The persistent under-representation or sometimes absence of

women in decision-making at all levels and in all fields of life is a major problem, even though there are great variations in this respect between countries. Promotion of the equal participation of women and men in political and public life and all other walks of life is part of the development of society. It is important for society as a whole that both women and men participate in all decisions taken in a society, given their various experiences in life. When women or men constitute about one third (the critical mass) of the members of a decision-making body, they influence the agenda and there is a real possibility for change. It is important also that women become visible in societal events to the same degree as men, and in the history of every state.

- Another very important target for gender equality is the individual's economic independence, which leads to the securing of equal pay, equal access to credit, equal conditions on the labour market and the distribution of assets that take into account gender differences in private life. The position that women and men have in the economy is in many ways crucial to the balance of power between them. Fighting the feminization of poverty is also important in this regard. Linked to the need for the individual's economic independence is the aim to reconcile family and working life for both men and women.
- Education is a key target for gender equality as it involves the ways in which societies transfer norms, knowledge and skills. It is crucial that the education systems and all elements of these systems (teachers, schools, textbooks, research institutes and so on) empower both girls and boys, and take care in counterbalancing the existing gender hierarchies. Media professionals can be a target here too, as they have a very powerful position in the transfer and consolidation of norms and knowledge.
- The last target to be mentioned is women's and men's common acknowledgement of the need to remove imbalances in society and their shared responsibility in doing so.1

It can be assumed that the achievement of the targets of human rights, democracy, economic independence and education in a context of shared responsibilities between women and men to resolve imbalances, lead to a society where both women and men experience well-being in public and in private life. It is also a way to a deeper understanding and implementation of democracy as such. (Council of Europe, 2004)

3.4.5. Gender Mainstreaming As a Strategy

In 1995, at the Fourth UN International Conference on Women held in Beijing, "gender mainstreaming" was established as the internationally agreed strategy for governments and development organisations to promote gender equality. This was in response to consistent lessons that have emerged from at least twenty years of experience of addressing women's needs in development work. To understand what "gender mainstreaming" means and why it is important, it helps to understand the journey that has been travelled to reach this point.

Development agencies agreed to adopt "gender mainstreaming" as a new strategy for ensuring the incorporation of gender perspectives in all areas and sectors, and at all levels, to promote gender equality. The strategy would go beyond focusing on women in isolation, to look at both women and men as actors in and beneficiaries of development – and how their rights are defined relative to each other.

Mainstreaming strategies are being adopted by development co-operation agencies as a way of supporting efforts to achieve equality between women and men. In part, this responds to a dissatisfaction with the major emphasis of earlier strategies on separate projects for women. Although some of these projects were innovative and catalytic, most were small, isolated initiatives that made minimal contributions to changing gender inequalities. Thus equality advocates (both inside and outside development agencies) argued that gender disparities needed to be addressed at the level of policy, selection of priority areas and overall programme design. Rather than building women's components into larger projects, the objectives and priorities of these projects themselves should be informed by the overall goal of equality.

Despite an increasing use of the term mainstreaming, there is still confusion about what it means and organisations use the word in different ways. Some organisations are resisting the use of the term, as they find it confusing and difficult to translate into other languages. Other institutions, however, have found it a useful of summarizing what they are attempting to do.

3.4.6 A Methodology for Gender Mainstreaming

3.4.6.1 Prerequisites or facilitating conditions for gender mainstreaming

The following points should be identified as important necessary prerequisites or facilitating conditions for gender mainstreaming

A. Political will

The state must define gender equality as one of its main objectives. Gender mainstreaming should be made a political issue. NGOs can be important in helping to create this political will. The government should in addition issue a 'mission statement' stating clearly its intention to mainstream the gender equality perspective into all policies and programmes, and indicate that the objective is that these programmes and policies will effectively promote and lead to gender equality. The government will also have to lay down clear criteria for gender mainstreaming which can help the actors. Without a strong political will to create little by little a consensus on, and a culture of, gender equality, the policy of gender mainstreaming will not be successful.

The political will to mainstream involves the will to question current gender relations and the structures, processes and policies perpetuating inequality. It implies, among other things, equal access to paid work and to economic power, and the will to adapt the structures and processes enabling the sharing of family responsibilities and household tasks. If a real culture of equality is to be created, women and men will have to share unpaid work and family responsibilities to a much greater extent than is currently the case. Therefore, the positive aspect of partnership and role-sharing between women and men would have to be subscribed explicitly There is a strong correlation between the political will for gender mainstreaming and public awareness of gender equality issues. Therefore, governments will need to support awareness raising and dissemination of knowledge of gender equality, e.g. in the educational system.

B. Specific gender equality policy

Countries with no equality policy could set it up and begin gender mainstreaming at the same time. Historically, such a policy comprises seven aspects:

i. Equal opportunities legislation and anti-discrimination laws: equality legislation serves as a safeguard against discrimination, not least on the labour market. This legislation is a necessary basis for the promotion of equality.

ii. The existence of mechanisms such as equality ombuds or equality commissions or councils for protection against discrimination.

iii. A strong national equality machinery (administrative organisation) with sufficient tools and resources (both human and financial) to exert influence on policy at all levels.

iv. Specific equality policies and actions to address specific women's – or men's – interests.

v. The existence of equality divisions or focal points within each ministry.

vi. Research and training on gender equality issues.

vii. Awareness-raising about gender equality.

C. Statistics

Data on the current situation of women and men, and on current gender relations, are absolutely necessary for mainstreaming. The problem is not only that statistics are not always segregated by sex, but also that data can be gender biased. Good statistics comprise data that are relevant for both women and men and that are split up by sex as well as by other background variables.

D. Comprehensive knowledge of gender relations

As mainstreaming is not a goal in itself, but a strategy to achieve gender equality, it presupposes that the necessary knowledge of gender relations is available for policy-makers. Not all knowledge can be developed in gender equality machineries and, therefore, sufficient research in gender studies has to be carried out and made available. Such research would comprise the analysis of current imbalances between the sexes in all policy fields as well as prognoses of how future initiatives will affect women and men. Mainstreaming requires strong gender studies. The existing differences between countries, in terms of the degree of development of gender studies and/or the degree of interaction between gender studies and the policy process, underline the important role these external experts play. When knowledge of gender relations is available in several places in the administrative system, this will facilitate gender mainstreaming to a great extent.

E. Knowledge of the administration

Gender mainstreaming involves the reorganization, development, implementation and evaluation of policy processes, as well as information about the qualities of the administrative system. This includes knowledge of the location of gender expertise, but also on policy process aspects: what actors are normally involved, which steps are normally taken, who is normally responsible.

F. Necessary funds and human resources

Financial means are an absolute prerequisite for gender mainstreaming, as for any other policy strategy. Mainstreaming implies a reallocation of existing funds. Even if countries show the necessary political will and have comprehensive gender equality policies and detailed knowledge of gender relations at their disposal, this will not enable them to adapt existing policy techniques and tools, set up new channels of co-operation and provide the necessary gender training for policy-makers. All these aspects mentioned require financial means. It would be very short-sighted to take only the immediate costs of gender mainstreaming into account. The advantages and positive effects of gender mainstreaming have already been mentioned – they can be summarized by stating that gender mainstreaming stands for quality. Long-term benefits have to be taken into consideration when considering short-term costs of gender mainstreaming.

G. Participation of women in political and public life and in decision-making processes

It is obvious that it will be difficult to obtain the political will for gender mainstreaming if women are not fully involved in political and public life and in decision-making in general. Therefore, it is important that women enter political and public life in much greater numbers. It is especially important that women enter decision-making processes, to ensure that the various values, interests and life experiences of women are taken into account when decisions are made. It is obvious that not every woman is necessarily an advocate for women's issues, but, as a matter of fact, most advocates for balanced gender relations are women. Besides, experience shows that in countries where a greater number of women participate in decision-making, changes are more considerable and take place at a quicker rate.

3.4.6.2 The steps involved in the process of mainstreaming gender

Step 1: Developing the gender mainstreaming policy plan.

The basic steps of the development of a gender mainstreaming policy plan are essentially the following:

- Identify the person or group in charge of developing the gender mainstreaming policy plan.
- Identify the profile and terms of reference of the group as well as the ways of working and timeline envisaged.
- Assess the current situation at the internal level.
- Assess the external situation.
- Identify desired gender equality targets: what are the expected results?
- Identify gender equality priority/priorities (both internally and externally).
- Identify tools to be used.
- Clarify who will be responsible for gender mainstreaming.
- Set up a monitoring system.
- Set up an evaluation system.

Step 2: Developing a strategy and translating the strategy into a concrete plan of action.

The main objective of the checklist above is to support gender mainstreaming initiatives. At the same time the organisation should decide on where the highest potential for introducing change lies. It should develop a strategy for how to implement the mainstreaming policy and translate this strategy into a concrete plan of action with short, medium and long term goals and possibly choose benchmarks and indicators to measure progress.

Step 3: Monitoring implementation of the gender mainstreaming policy.

Once a gender mainstreaming plan of action has been constructed and the mainstreaming process has been started, it is important to watch over the quality of mainstreaming initiatives. Monitoring is different than evaluation because it includes the continuous scrutinizing, and follow-up of policies while evaluation whether periodical, intermediate or final comes at the end of a certain process. In order for this continuity to be achieved, the monitoring of gender

mainstreaming has to be part of the regular monitoring process eventually set-up by the organisation. The way monitoring takes place has to be decided before the gender mainstreaming project starts. For example, the organisations may choose benchmarks and indicators through which it can measure that the process of gender mainstreaming is actually taking place and whether the requested results are achieved.

Step 4: Evaluation and feeding into next planning cycle

When developing the mainstreaming plan of action, it is, as mentioned above, important to include short, medium and long term goals – and possibly to choose benchmarks and indicators to measure progress. Evaluations – periodical, intermediate and final – should be planned into the process and sufficient time and human resources allocated for thorough evaluations. Building on the monitoring system and process, the evaluations have the purpose of assessing progress (or setbacks) and to come up with recommendations on how to improve and proceed. Evaluations should be used to correct shortcoming in results – but also to possibly alter or amend the mainstreaming policy plan and ensure that the lessons learned are brought into the next planning cycle.

Self-Check 3	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided below.

I. Write ‘True’ the correct statement and ‘False’ for the incorrect one

_____ 1. Men and women in a given society have similar needs

_____ 2. Practical Gender Needs are easily identified by men

_____ 3. Strategic Gender Needs tend to be responsive to long term necesitiy

II. Match the items under column A with the corresponding items under column B

A	**B**
___ 1. Practical Gender Need	A. Permanent character
___ 2. Strategic Gender Need	B. Short term necessity
___ 3. Sex	C. Fairness argument
	D. Need of power

III. Define:

1. Gender: _____

2. Gender Mainstreaming: _____

IV. Write the triple roles of gender

Note: Satisfactory rating - 10 points **Unsatisfactory - below 10 points**

You can ask you teacher for the copy of the correct answers.

Name: _____ Date: _____

LG #45	LO #4- Recognize Indigenous Knowledge

Instruction sheet

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

- The concept of indigenous knowledge
- Understanding Characters of indigenous knowledge
- Promoting Exchange of indigenous knowledge
- The importance of indigenous knowledge
- Studying the controversial issues of the debate on indigenous knowledge

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

- Understand the concept of indigenous knowledge to strengthen the service of agricultural extension
- Understand characters of indigenous knowledge to promote local experience
- Promote exchange of indigenous knowledge to enhance community development
- Understand the importance of indigenous knowledge to facilitate its contribution to the development processes.
- Study further the controversial issues of the debate on indigenous knowledge to propose the urgent need, to document, learn, preserve, and exchange indigenous knowledge

Learning Instructions:

13. Read the specific objectives of this Learning Guide.
14. Follow the instructions described below.
15. Read the information written in the information Sheets
16. Accomplish the Self-checks

Information Sheet-4

4.1. The Concept of Indigenous Knowledge

4.1.1 Definition of Indigenous Knowledge

Indigenous knowledge is broadly speaking the knowledge used by local people to make a living in a particular environment. Various terms used in the field of sustainable development to designate this concept include indigenous technical knowledge, traditional environmental knowledge, rural knowledge, local knowledge and farmer's or pastoralist's knowledge. (Amare D., 2009)

Indigenous Knowledge can be defined as: "A body of knowledge built up by a group of people through generations of living in close contact with nature". Generally speaking, such knowledge evolves in the local environment, so that it is specifically adapted to the requirements of local people and conditions. It is also creative and experimental, constantly incorporating external influences and internal innovations to meet new conditions. It is a mistake to think of Indigenous Knowledge as 'old-fashioned', 'backward', 'static' or 'unchanging'. (Johnson, 1992, cited in Amare, D., 2009)

Like any other knowledge system, Indigenous Knowledge's information base is constantly renewed and revised. Unfortunately, the dynamics of globalization, industrialization and urbanization threaten the loss of much of this knowledge. This trend is exacerbated by the fact that, like oral history, this knowledge is tacit and not documented.

Furthermore, one cannot overlook indigenous knowledge's ability to provide effective alternatives to Western know-how. Moreover, IK offers local people and their development workers further options in designing new projects or addressing specific problems and wider disasters. Instead of relying on imported Western technologies, people in the developing nations

can choose from readily available indigenous knowledge or, where appropriate, combine indigenous and Western technology.

4.1.2 Historical Development of Indigenous Knowledge

Indigenous Knowledge plays an important role in the sustainable management of natural resources and can also have an impact on issues of global concern. This recognition is directly related to the growing realization that scientific knowledge has contributed little to the development of certain communities and societies; rather it may have sometimes hastened the depletion of their social and natural resources.

In Ethiopia there has been a longstanding tradition that the governors of the time collected information and this information was used to record customary patterns of land tenure and crop and livestock ownership. Since 1997 however, contemporary interest was revived further, first by an Ethiopian local NGO, the Association for Promotion of Indigenous Knowledge (APIK), and then by the Ethiopian Ministry o f Agriculture (MoA). The inventory carried out by APIK showed that local people's knowledge and skills can be an effective means to increasing extension agents' sensitivity to local needs, and stimulating meaningful dialogue between all actors in community based Natural Resource management activities.

4.1.3 Importance of Indigenous Knowledge for Development

The importance of Indigenous Knowledge is the potential that it offers for self sufficiency and self-determination, for at least two reasons:

i) People in the developing nations are familiar with indigenous practices and technologies. They can understand, handle, and maintain them better than Western practices and technologies.

ii) IK draws on local resources and the majority of people are less dependent on outside supplies, which can be costly, scarce and available only irregular

4. 2. Characters of Indigenous Knowledge

The characters of indigenous knowledge like the definition of this knowledge is presented by experts in different ways are explained as follow:

4.2.1 It is based on experience:

Indigenous knowledge is the result of people's experience during many centuries. One must not forget that Indigenous Knowledge is local knowledge that is unique to a given culture or society. It is the information base for a society which facilitates communication and decision-making. It is therefore important to understand that Indigenous Knowledge is the systematic body of knowledge acquired by local people through the accumulation of experiences, informal experiments, and intimate understanding of the environment in a given culture.

4.2.2 It was tested during centuries by working on it.

Indigenous knowledge was created by local people and tested during centuries by working on it and preserved by consequent generations.

4.2.3 It is compatible with indigenous environment and culture:

Indigenous knowledge was created through native societies and it was formed according to their needs and during time the things which were not compatible with indigenous environment were omitted, so what was remained was compatible with the environment and culture of that society (Amiri Ardekani and 2003 cited by G. Esmaiel and Fatemeh B., 2011).

IK is the basis of people’s cultures, identities, institutions and value systems and cannot be separated from their spiritual and material relationships with their lands. Furthermore, these cultures provide the rules for sharing and applying this knowledge.

4.2.4- it is dynamic and is changing:

Simultaneously with changing indigenous culture, the indigenous knowledge was changing too.

4.2.5- the knowledge of rural people was not technical:

This knowledge was consisted of rural people's wishes, values and preferences.

4.2.6- the rural people's knowledge is not statistic:

This knowledge was formed according to people's culture, social and economic history. The history which was written by these rural people shows that their manner and activities were efficient in changing of their conditions.

4.2.7- rural people's knowledge is not enough.

Maybe the rural people are knowledgeable but they like to know more and more. Because they want to be powerful in their discussions with political, economical and social forces who made these people poor before giving them technology.

4.2.8- rural people's knowledge has root on their political economy and is more important in political field.

The advantages that rural people can get from indigenous knowledge are the knowledge that is created and released locally and is on their authority and also depends on main factors in regional political economy (land distribution, marketing relations, and vertical links and …). So improvement of their livelihoods depends on interferences which were made to pervade on these main factors.

4.2.9- most of the rural people are public-oriented

Mostly, they have a little information about many things which is in contrast with academic educations. Specialist people in universities have deep knowledge in little fields (of course some of these native people are specialist too).

4.2.10- indigenous knowledge systems are holist:

Local people consider the other people's problems as their problems and try to solve these problems in a whole frame with using their knowledge.

4.2.11- indigenous knowledge systems combine the culture and religious believes.

Religious believes as a part of indigenous knowledge are not separated from technical knowledge and these believes effect on people' do and don't

4.2.12- indigenous knowledge systems prefer the less risk to most profit

Escaping of risk is important for native people, for example a native person usually keeps some goats for possible cases such as disease of his children and he and he didn't expect any incomes of these cases.

In general IK "varies within and between societies, comes from a range of sources and is a dynamic mix of past tradition and present innovation. It is heterogeneous and complicated which is an inconvenience for development." It is also diffused 'skills as knowledge', held by various people within a society and communicated through various symbols, myths and rites in an apparently piecemeal everyday fashion. They argue that "it is neither static nor uniform but ever-changing and subject to continual negotiation between people ... it is a process featuring the acquisition and integration of current information and experience"

Indigenous Knowledge comprises institutions, in terms of rules and norms, about how to treat the environment, as well as comprising a particular worldview that influences how they make sense of this natural world. They also emphasise the holistic nature of Indigenous Knowledge, compared to Western reductionism. While at first Indigenous Knowledge was seen as a potentially useful source of mere 'technical ideas', it also extends to "nontechnical insights, wisdom, ideas, perceptions, and innovative capabilities which pertain to ecological, biological, geographical and physical phenomena"

4.2.13 Features of Indigenous Knowledge

4.2.13.1 Locally appropriate:

IK represents a way of life that has evolved with the local environment, so it is specifically adapted to the requirements of local conditions.

4.2.13.2 Restraint in resource exploitation:

Production is for subsistence needs only; only what is needed for immediate survival is taken from the environment.

4.2.13.3 Diversified production systems:

There is no overexploitation of a single resource; risk is often spread by utilizing a number of subsistence strategies.

4.2.13.4 Respect for nature:

A “conservation ethic” often exists. The land is considered sacred, humans are dependent on nature for survival; all species are interconnected.

4.2.13.5 Flexible:

Indigenous Knowledge is able to adapt to new conditions and incorporate outside knowledge.

4.2.13.6 Social responsibility:

There are strong family and community ties, and with them feelings of obligation and responsibility to preserve the land for future generations.

Furthermore,

- ✓ IK is considered parochial, confined to a small area, and limited to what rural people can sense, observe, and comprehend using their own terms and concepts.
- ✓ IK is not uniformly spread. Individuals vary in their aptitude for learning, storing, and generating knowledge. Specialized knowledge often belongs to certain groups or individuals; for example, male elders, midwives, traditional healers
- ✓ IK includes both explicit and implicit knowledge, some of it intuitively practiced through cultural rituals or revealed through stories and legends.
- ✓ IK is embedded in culture
- ✓ IK systems can be complex. Attempts to "scientize" IK by removing it from its owners will tend to compromise the subtle nuances of this knowledge

4.3. Promoting Exchange of Indigenous Knowledge

4.3.1 Introduction

Although IK is readily shared among members of a community (in so far as these IK practices are a part of the daily life of the community), it is generally shared to a lesser degree across communities. Moreover, as IK is predominantly tacit or embedded in practices and experiences, it is most commonly exchanged through personal communication and demonstration: from master to apprentice, from parents to children, from neighbor to neighbor, from priest to parish. Recording tacit knowledge, and transferring and disseminating it is, therefore, a challenge. Exchange within a community where providers and recipients speak the same language and share its underlying cultural concepts is much more easily accomplished than transferring tacit

knowledge across cultures. To facilitate the understanding of the exchange process, it is useful to break down the process into its various elements.

4.3.2 Exchange of indigenous knowledge is a process, comprising essentially six steps:

4.3.2.1 Recognition and Identification

The process typically begins with **recognition and identification** of knowledge as expressed in a technology or a problem solving strategy. However, identification of IK can at times prove difficult. For example, some IK may be embedded in a mix of technologies or in cultural values, rendering them unrecognizable at first glance to the external observer. Others may have become part of every day life of a community to an extent that makes it difficult to isolate such practices even by individuals or communities applying them. In such cases, technical and social analyses of certain practices may be needed to identify IK.

4.3.2.2 Validation

The next typical step is to **validate** IK in terms of its significance and relevance (to solving one or several specific problems), reliability (not being an incidental occurrence), functionality (how well does it work), effectiveness and transferability. The users themselves should preferably conduct or be involved in the validation at the original site of application of IK. Transfer of IK from one community to another may in some cases prove difficult. This is because most IK is stored in tacit form, which in certain circumstances may make it transferable only through direct practice and apprenticeship. Proof of an efficient process at the point of origin does not necessarily ascertain its efficacy under seemingly similar conditions in other locations. Lessons from earlier transfers of modern as well as appropriate technologies indicate that the cultural,

political, and economic environment and the level of technical competence of recipients are critical for sustainable adoption and adaptation of foreign technologies. Consequently, it is important to carry out pilots to test the new technology with the recipient. Nevertheless, in some cases it should be possible to undertake a general assessment of transferability, subject to confirmation with follow up pilots.

4.3.2.3 Recording and Documenting

The next step, i.e., **recording** and **documenting,** is another major challenge again because of the tacit nature of indigenous knowledge. The scope of recording/documentation is largely determined by the intended use of the information. Thus, while scholars would want to understand and capture a more comprehensive view of knowledge with all its ramifications, a practitioner might be satisfied with an answer to the question "How did they do that?" The recording may require audio-visual technology, taped narration, drawings, or other forms of codifiable information. In case the tacit nature of a practice does not lend itself to such recording, information about locations, individuals or organizations that can demonstrate or teach a practice could be used as a pointer to the source of IK.

4.3.2.4 Storing in retrievable repositories

Storage in retrievable repositories is the next typical step in the process. This involves categorization, indexing, relating it to other information, making it accessible and conserving, preserving and maintaining it for later retrieval. Meta-information needs to be produced to make retrieval more user-friendly. This could include electronically stored and indexed abstracts, directories of experts or applications. Storage should not, however, be restricted to only text documents. It should also include other retrievable types of repositories of information such as tapes, films, databases and IK practitioners.

4.3.2.5 Transfer of IK

The **transfer** of IK goes beyond conveying it to the potential recipients. An important element of the transfer is to test the knowledge in the new environment. Economic and technical feasibility, social and environmental impact and other criteria as deemed necessary by the recipients need to be examined. Individuals, a community group, a civil society organization, or researchers could be used to help test, reject or adopt and adapt the new knowledge. These transfers could be supported by government, and donor agencies. The transfer may involve intensive practical training, apprenticeships or demonstrations. Some local practices can only be transferred directly, from practitioner to practitioner. Only few people in a community will have the risk bearing capacity to accept substantial failure of an imported technology. Careful selection of cooperating partners and potential beneficiaries in a participatory process is a prerequisite for a successful transfer. The risk of failure is reduced if the new technology builds upon existing local knowledge.

4.3.2.6 Dissemination of IK

Once the transfers and adaptation process has been carried out successfully through a pilot, the **dissemination** of IK to a wider community adds the developmental dimension to the exchange of knowledge and could bring about a wider and deeper impact of the knowledge transfer. Depending on content and context, dissemination activities could include **public awareness campaigns, public broadcasting, advertisements, seminars, workshops, distribution of information material, publications and the incorporation of IK in extension programs or curricula.** Dissemination activities could be either targeted to specific groups or address the general public. Governments could encourage the process by creating a favorable political, economical and legal framework.

Exchange of IK is the ideal outcome of a successful transfer. This is essentially a learning process whereby the community where an IK practice originates, the agent that transmits the practice, and the community that adopts and adapts the practice all learn during the process.

4.4. The Importance of Indigenous Knowledge

4.4.1 Why is Indigenous Knowledge Important?

The features described above suggest that indigenous knowledge is an integral part of the development process of local communities. According to the 1998/99 World Development Report, knowledge, not capital, is the key to sustainable social and economic development. Building on local knowledge, the basic component of any country's knowledge system, is the first step to mobilize such capital. Moreover, there is a growing consensus that knowledge exchange must be a two way street. A vision of knowledge transfer as a sort of conveyor belt moving in one direction from the rich, industrialized countries to poor, developing ones is likely to lead to failure and resentment. "Governments and international institutions can certainly help countries with the daunting task of sifting through international experience, extracting relevant knowledge and experimenting with it. But they will have the most success if they help developing countries adapt knowledge to local conditions. Sharing knowledge with the poor is most effective when we also solicit knowledge from them about their needs and circumstances". Therefore, development activities, especially those that aim to benefit the poor directly, need to consider IK in the design and implementation stages of the process.

4.4.2 Importance of Indigenous Knowledge for the Poor

Indigenous knowledge is an important part of the lives of the poor. It is an integral part of the local ecosystem. IK is a key element of the "social capital" of the poor; their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives.

Indigenous knowledge also provides **problem-solving strategies** for local communities and helps shape local visions and perceptions of environment and society. Typical examples include:

- Midwives and herbal medicine.
- Treatment of cattle ticks by the Fulani using Tephrosia plants.
- Soil and land classifications in Nigeria.
- Water catching stone bunds in Burkina Faso.
- Construction of buildings with natural "air conditioning" in the Sudan.
- Agroforestry systems emulating the natural climax vegetation on the Kilimanjaro.
- Settlement for land disputes between farmers and nomads in Togo.
- Communal use and individual allocation of land by the Washambaa in Tanzania.
- Local healers' role in post-conflict resolution in Mozambique.
- Transfer of knowledge through elders, rituals, initiation, and story tellers in West Africa.
- Systems to control power and distribute wealth among the Maasai in East Africa.

The potential disappearance of many indigenous practices could have a negative effect primarily on those who have developed them and who make a living through them. A greater awareness of the important role that IK can play in the development process is likely to help preserve valuable skills, technologies, artifacts, and problem solving strategies among the local communities. Often such local practices also have an impact on issues of global concern. Therefore, preserving the IK capital can enrich the global community and contribute to promoting the cultural dimension of development. In some cases it can also help to protect the global environment.

The preceding points illustrate how:

- IK can provide **problem-solving strategies** for local communities, especially the poor;
- learning from IK can improve understanding of **local conditions**;
- understanding IK can **increase responsiveness to clients**;

- building on local experiences, judgments and practices can increase the impact of a development program beyond cost-effective delivery of staples;
- indigenous approaches to development can help to create a sense of ownership that may have a longer lasting impact on relations between the local population and the local administration, giving the former a means of monitoring the actions of the latter;
- IK can provide a building block for the empowerment of the poor.

In summary, IK is important for both the **local communities and the global community**. The development partners need to recognize the role of IK, understand its workings in the context of the local communities, and integrate systematically the most effective and promising of such practices into the development programs they support. As mentioned above, the impact and sustainability of international practices could be enhanced if they are adapted to the **local conditions** and the indigenous practices. Yet, **IK is still an underutilized resource in the development process**. Special efforts are, therefore, needed to understand, document and disseminate IK for preservation, transfer or adoption and adaptation elsewhere. By helping to share IK within and across communities the development community can learn a lot about the local conditions that affect those communities. IK should complement, rather than compete with **global knowledge systems** in the implementation of projects. By investigating first what local communities know and have in terms of indigenous practice, development partners could better help improve upon those practices by bringing to the dialogue international practices from development experiences in other parts of the world. Moreover, this process can contribute to better cross-cultural understanding and to the promotion of culture in development. But, above all, investing in the exchange of indigenous knowledge and its integration into the development process can help to reduce poverty.

4.4.3 Problem solving Strategies

As may be the case in all developing nations, modem scientific knowledge of thought and lifestyle, exists alongside the traditional/indigenous knowledge systems in Ethiopia. The indigenous knowledge/traditional systems and the modem/scientific system are common in

almost all sectors of Ethiopian society, including agriculture, health, education, culture and even lifestyle.

Indigenous Knowledge is used to solve problems in different sectors. It is widely used in medicine and 65% of poor people in sub-Saharan Africa depend on traditional medicine for basic health care. Furthermore, the commercialization of traditional medicines is an important part of pharmaceutical research and development with world sales of herbal medicines reaching $30 billion in 2000. This raises difficult issues concerning the division of profits and intellectual property rights.

4.4.4 Important Component of Global Knowledge

Global knowledge refers to **knowledge that is beyond local and indigenous context**. It is cross-cultural, has high generalizability, and tends to be characterized by a diversity in source. As such, global knowledge has to transpire cultural boundaries. For the global knowledge to be useful it should be strengthened with the contribution of all sources of knowledge including Indigenous knowledge. In this respect has a lot to contribute to the global knowledge

4.4.5. Resource in Development Process

Development is a process that creates growth, progress, positive change or the addition of physical, economic, environmental, social and demographic components. To achieve this goal the process is required to use different resources including knowledge. In this respect Indigenous knowledge too is used as a resources in development process.

4.4.6 Understanding of Local Condition

Indigenous Knowledge is, as mentioned above, a body of knowledge built up by a group of people through generations of living in close contact with nature. This process is possible only with the understanding of local conditions. Understanding of local conditions is used to develop indigenous knowledge and development of indigenous knowledge uses for the understanding of local conditions

4.4.7 Increase Responsiveness of Client

Customer/client responsiveness refers to a business's ability to respond to service inquiries and fulfill them in a timely manner. This includes both the speed it takes agents to initiate the interaction as well as the time it takes for them to complete the customer's request. Indigenous Knowledge enhances this process

4.4.8 Enhance cross-Cultural Understanding

Cross cultural understanding simply refers to the basic ability of people to recognize, interpret and correctly react to people, incidences or situations that are open to misunderstanding due to cultural differences. Indigenous Knowledge enhances cross-cultural understanding.

4.5. Controversial Issues of the Debate on Indigenous Knowledge

4.5.1 Controversial aspects of IK

The following highlights some controversial aspects of IK:

- **Indigenous knowledge cannot be codified and recorded**, and hence cannot be exchanged across communities and cultures. Other authors go even further and insist that being unique to and part of a particular culture of a people, transferring local knowledge would render it irrelevant, inappropriate or even harmful. These authors claim that IK could only be preserved in-situ by continuous application.

- **"Western" science is incapable of appreciating traditional cultures** and their knowledge systems and practices. It is also assumed that the "Western" scientific approach cannot appreciate local practices, as it does not recognize the spiritual elements

of IK. This assumption is re-enforced by claims that "Western" values would still be imposed on local cultures by means of imported technologies.

- **Attempts to record and transfer IK could lead to the dis-empowerment of indigenous people**.

The other Controversial Issue concerning IK is Intellectual property rights

There is an emerging North-South debate in the IK study community on whether and how to protect the intellectual property rights of IK practices. For example how should the healers with iatro-botanical (i.e., medicinal use of plants) knowledge be paid royalties once active compounds of the medicinal plants they use are isolated by pharmaceutical companies and sold on a commercial basis? Patenting such compounds by foreign companies is a related and yet unresolved issue.

4.5.2 Discrimination

Indigenous Knowledge is seen to be different from scientific knowledge and conventional wisdom has been that scientific knowledge is somehow more advanced and global than IK. However, the onset of 'global warming' and adverse climate change raises questions as to how advanced Western science actually is. Scientific knowledge itself is 'local', based on the sociological notion that science is 'what scientists do' and is based on highly situated practices. Both knowledges are based on observation, some form of experimentation and the desire to create order out of apparent disorder and "in some sense we are all indigenous and all knowledge including science is local". Similarly all knowledges are "the product of human movement, actions, practices and protocols. They are dynamic, heterogeneous, social and distributed"

4.5.3 Exploitation

Exploitation has long been a major issue in the discussion of integrating indigenous knowledge with Western science for innovation. Unfair treatment or exploitation is one of the controversial issues concerning Indigenous Knowledge.

4.5.4Dispossession

Owners of Indigenous knowledge, in many aspects, are not the users of their own knowledge for different reasons. One reason for this act of deprivation of what they own is dispossession.

4.5.5 Miss-use

Indigenous knowledge, which has generally been passed from generation to generation by word of mouth, is in danger of being lost unless it is formally documented and preserved. Absence of documentation and preservation causes the miss-use of IK too.

4.5.6 Miss-appropriation

Absence of intellectual property rights in Indigenous Knowledge causes miss-appropriation of innovations developed by others.

4.5.7 Violation of the Right of Indigenous Knowledge

The major challenges to the management and preservation of indigenous knowledge are issues relating to collection, development, **intellectual property rights**, access and the preservation media. In many respects

The major contentious issue in the management and preservation of IK is the protection of intellectual property rights. Intellectual property rights have been defined as legal rights that can

attach to information emanating from the mind of a person if it can be applied to making a product that is made distinctive and useful by that information. (Posey and Dutfield, 1996: 230)

There is an emerging debate on how to protect the intellectual property rights of IK practices. In this regard, the United Nations Draft Declaration on the Rights of Indigenous Peoples underscores the fact that indigenous peoples have the right to own and control their cultural and intellectual property pertaining to their sciences, technologies, seeds, medicines, knowledge of flora and fauna, oral traditions, designs, art and performances.

Self-Check 4	**Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided below.

I. Write 'True' if the statement is correct and 'False' if it is not

_____ 1. Indigenous knowledge is used by modern people

_____ 2. Indigenous knowledge plays important role in the sustainable management of natural resource

_____ 3. Indigenous knowledge is changing with changing indigenous culture

II. Match the item in column A with the corresponding item in column B

A	B
___ 1. Indigenous knowledge	A. Based on experience
___ 2. Characteristic of Indigenous knowledge	B. Locally appropriate
___ 3. Feature of Indigenous knowledge	C. Exchange of Indigenous knowledge
	D. Local knowledge

III. Define Indigenous knowledge: _____

Note: Satisfactory rating - 10 points **Unsatisfactory - below 10 points**

You can ask you teacher for the copy of the correct answers.

Name: _____ Date: _____

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