

ADDIS ABABA UNIVERSITY
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES

DISTANCE LEARNING MODULE

LIVELIHOODS AND FOOD SECURITY (GEES 452)

COMPILED BY
MESSAY MULUGETA

AUGUST 2013



Module Contents

	Pages
1. Definitions and Basic Concepts	2
1.1. Livelihoods: The concept	2
1.2. Food in/security: The concept	5
1.3. Food security analysis and indicators	9
1.4. Food insecurity versus famine, malnutrition and undernourishment	15
2. Sustainable Livelihood Frameworks and Strategies	18
2.1. Sustainable livelihoods approaches/frameworks	19
2.2. Livelihoods frameworks compared	24
2.3. Livelihood assets: The asset pentagon	31
2.4. Livelihood strategies & outcomes	32
3. Link Link of Sustainable Livelihoods Framework to Other Development Approaches	39
3.1. Rights-based approaches	40
3.2. Participatory development	42
3.3. Sector-wide approaches	45
3.4. Integrated rural development	46
3.5. Developmental state model	47
3.6. Trickle-down theory	49
3.7. Rostow's stages of economic growth	50
4. Vulnerability of Livelihoods/Food Insecurity	53
4.1. The concept of vulnerability and resilience	54
4.2. Factors exerting influence on livelihoods	57
4.3. Vulnerability to livelihoods and food insecurity in Ethiopia: a glimpse	58
5. Determinants of Livelihoods and Food Security	63
5.1. Ecological/Agro-climatic determinants of livelihoods and food security	64
5.2. Environmental degradation vs livelihoods and food security	68
5.2.1. Water deterioration	69
5.2.2. Climate change and atmospheric temperature	69
5.2.3. Climate change and precipitation	71

5.2.4. Agriculture and environmental degradation	71
5.3. Disaster risks (natural disasters, Anthropogenic causes)	73
5.3.1. Natural disaster	74
5.3.2. Man-made disaster	75
5.4. Causes of food insecurity in Ethiopia	79
6. Livelihoods and Food Security/insecurity Analysis Techniques	81
6.1. Household Food Balance Model (HFBM)	81
6.2. Household Food Insecurity Access Scale (HFIAS)	83
6.3. Household Hunger Scale (HHS)	86
6.4. Coping Strategy Index (CSI)	89
6.5. Household Food Consumption Score (HFCS)	93
6.6. Household Dietary Diversity Score (HDDS)	94
7. A Glance at Famine & Policy Responses in Ethiopia	96
7.1. Famine and food security trends in Ethiopia	98
7.2. Livelihood and food security policies and strategies	102
7.3. Planned resettlement program as a policy response to food insecurity in Ethiopia in Ethiopia	105
Review questions	112
References	118
Appendix	120

Key to the Module Icons



Introduction: This is an explanatory section of the module and/or each chapter of the module. It is a section at the beginning of each chapter that summarizes what it is all about or sets the scene of the subsequent paragraphs. Students are, therefore, required to read each introductory note thoroughly so as to grasp the basic theme of the module and/or the chapters.



Objective: This is where the objectives of the module and/or each chapter are communicated to the students. It helps to draw attention to the basic theme of the module or each chapter. Students are, therefore, required to read and adequately understand the objectives of the module and/or each chapter so as to gain basic knowledge from this module.



Activity: This is meant for drawing the attention of the students to carry out an action or accomplish a task so as to acquire the necessary knowledge and skill. Therefore, the students are highly recommended to get done each and every activity in the module in order to be successful in this course.



Exercise: This is a piece of work intended to test to what extent the students acquired the necessary knowledge and skill upon completion of a unit or all sections of this module. The students are required to submit the answers for each exercise to the course instructor/tutor. Incompetency to carry out the exercises and submit on or before the due date may result in a failure in this course.



Module overview

The objective of this module is to provide students with an understanding of human vulnerability to various forms of insecurity particularly livelihoods and food insecurity. The module covers topics which include the definitions and concepts of livelihoods, food security/insecurity and human vulnerability to various forms of risks. Emphasis will be given to livelihood assets and coping strategies of poor households in developing countries and the influence on the state of different facets of livelihoods and food insecurity. The module focuses on causes of resource scarcity, degradation and mismanagement of resources at different levels to explain the intensity and patterns of food insecurity over space and time. Different livelihoods frameworks and up-to-date techniques of food security analysis will be covered in this module.

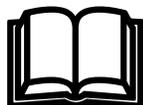


Module learning outcomes

On successful completion of this module, the students will be able to:

- explain the concepts of livelihoods and food security in detail
- recognize various forms of food in/security and livelihoods frameworks
- discuss how biophysical and socio-economic factors determine the livelihood setup of an individual an/or a society
- identify the appropriate techniques and indices of food security analysis
- apply the techniques of food security analysis
- explain the status, causes and coping mechanisms of food in/security in Ethiopia

UNIT I: DEFINITIONS AND BASIC CONCEPTS



Introduction

A concept related to food in/security and livelihoods is very complex and needs to be scrutinized from different angles. This is because both food in/security and livelihoods are characterized by multifaceted and intertwined issues such as biophysical, political and socio-economic circumstances. In light of this, this chapter attempts to highlight detailed accounts of the origin and development concepts of food in/security and livelihoods so as to enable the learners to grasp the basic conceptual/theoretical knowledge of the subject matter.



Unit learning outcomes

At the end of this unit, the students should be able to:

- explain the concepts of livelihoods and food in/security in detail
- recognize the various forms of food in/security and livelihoods frameworks
- distinguish the difference between basic terminologies in this module such as food insecurity, famine, malnutrition and undernourishment

1.1. Livelihoods: The concept

The concept of sustainable livelihoods is a reference point for a wide range of people involved in different aspects of development policy formulation and planning. As analysts point out, there are two broad approaches to defining livelihoods. One has a narrower economic focus on production, employment and household income. The other: takes a more holistic view which unites concepts of economic development, reduced vulnerability and environmental sustainability while building on the strengths of the rural poor. The livelihoods concepts and methodological approaches in this book are rooted in this more holistic view. The livelihoods framework is not restricted to analyzing rural or urban livelihoods. It has important applications in understanding both rural and urban livelihoods and vulnerability and the linkages between rural and urban areas. Although there are differences of interpretation and different variations of

the livelihoods framework, they all build on earlier development theory. These include aspects of the Integrated Rural Development Planning (IRDP) approaches of the 1970s; food security initiatives during the 1980s; Rapid Rural Appraisal (RRA); Participatory Rural Appraisal (PRA); farming systems research; gender analysis; new understandings of poverty and well-being; risk and vulnerability assessment; and agrarian reform.

Activity 1

- Have you ever read the definition of the term '*livelihood*'? Write down your answer in the space provided and compare your answer against what you will read the subsequent paragraphs

The work of different scholars in the early 1990s built on participatory research practices and ideas put forward by the World Commission on Environment and Development. They developed a definition of livelihoods and the factors that make them sustainable which underpins all of the livelihoods frameworks currently being used. Accordingly: 'A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. A sustainable livelihood is which can cope with and recover from stress and shocks, maintain and enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels in the long and short term.

The earlier definition was modified by DFID (Department for International Development of UK) in 1999, a definition that is widely used: 'A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from shocks and stresses and

maintain and enhance its capabilities and assets both now and in the future, whilst not undermining the natural resource base’.

Other livelihoods definitions make people more central and are less concerned with precise terminology for different kinds of assets. They highlight issues of ownership, access and decision making. One of these definitions of livelihoods states: People’s capacity to generate and maintain their means of living, enhance their well-being and that of future generations.

These capacities are contingent upon the availability and accessibility of options which are ecological, economic and political and which are predicated on equity, ownership of resources and participatory decision making.

Answers to questions of what are sustainable livelihoods and how can they be achieved, ideally and practically, can be drawn from several approaches. But while sustainable livelihoods may mean many things to many people, what is common between the various approaches is a call to reduce the complexity and uncertainty that gives rise to demands for sustainable livelihoods in the first place. Sustainable livelihoods (SL) can thus be seen as a way of thinking about the objectives, scope and priorities for development, in order to enhance progress in poverty elimination.

The sustainable livelihoods approach is a holistic approach that tries to capture, and provide a means of understanding, the fundamental causes and dimensions of poverty without collapsing the focus onto just a few factors (e.g. economic issues, food security, etc.). In addition, it tries to sketch out the relationships between the different aspects (causes, manifestations) of poverty, allowing for more effective prioritization of action at an operational level.

Activity 2

What are the components of livelihoods? Write down your answer in the space provided and compare against what you will read in the subsequent paragraphs

Most development agencies adopt the Chambers and Conway's (1992:7-8) definition of livelihoods (or some slight variation on this) which holds that:

A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the long and short term.

The assets that are generally recognized within sustainable livelihoods theory are:

- **Natural (Environmental) Capital:** Natural resources (land, water, wildlife, biodiversity, environmental resources).
- **Physical Capital:** Basic infrastructure (water, sanitation, energy, transport, communications), housing and the means and equipment of production.
- **Human Capital:** Health, knowledge, skills, information, ability to labor.
- **Social Capital:** Social resources (relationships of trust, membership of groups, networks, access to wider institutions).
- **Financial Capital:** financial resources available (regular remittances or pensions, savings, supplies of credit).

Activity 3

1. Define the term livelihoods
2. Explain social and physical capital as they are used in livelihoods concept?
3. What are the major determinant factors of sustainable development?

1.2. Food security: The concept & indicators

This section looks into food security/insecurity concept, its indicators, the implications for its measurement and categorization. Food security, or insecurity, is a multifaceted and intricate concept, variously and progressively defined/interpreted.

Food security/insecurity, as a concept, has been reformulated many times since mid-1970s when the term began to be used on a regular basis. It was progressively developed and expanded along with the growing incidence of hunger, famine and malnutrition in most parts of the world. Food security as a concept originated in mid-1970s, in the discussions of international food problems at a time of global food crisis. It was coined at FAO's World Food Conference in 1974 (Rome) as 'availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices' (UN, 1975). This is the narrowest definition of food security that attempts to explain the concept as the availability of adequate food whether at the global, national, community or household level.

The earliest definition of the concept of food security considers it as the availability of sufficient food supply at the global, national and regional levels. The focus was, therefore, on the aggregate supply of food in the world market to meet the demand for it (Maxwell and Smith, 1992). The World Food Conference of 1974 emphasized the increment in food production (especially in developing countries), enhancement in consumption and distribution of food, and building a system of food security to alleviate food crises (UN, 1975). However, the availability of food at larger scale alone never guarantees food security at household or individual level. This is why, according to WFP annual report (WFP, 2010), over 1 billion people suffered from hunger worldwide in 2009 alone (the highest figure ever recorded) despite a good availability of food at global level. The report also indicates that nearly 200 million children under five in the developing world were stunted or chronically under-nourished and about 130 million were underweight. Similarly, about 3.5 million children under five die every year, largely as a result of under-nourishment, attributed to lack of access to the food produced.

Activity 4

1. What was the theme of the earliest definition of food security?
2. Explain briefly the dynamicity in the concept of food security.
3. Mention one of the current definition of food security

Unlike the case in 1970s, the focus of the concept of food security shifted to questions of access to food at household and individual levels in 1980s. In 1983 FAO conceptualized food security as: 'Ensuring that all people at all times have both physical and economic access to the basic food that they need', implying that a balance should be struck between the demand and supply side of the food security equation. Hence, since 1980s, it has been recognized that the adequacy of food supply at global or national levels alone does not guarantee access to food at community or household levels. In other words, increased food production and abundant supply at macro levels is a necessary but not sufficient condition to ensure that all households and individuals are able to secure their food needs. In this regard, Amartya Sen (1981) that argues ensuring access to food, not merely increasing food supplies, should be regarded as critical component of food security. In this most influential study, Sen explain food insecurity occurs not because there is not enough food, but because people do not have access to enough food. Consequently, the focus and unit of analysis with regard to food security has recently shifted from the global and national to household and individual levels.

In the 1986 Poverty and Hunger report of the World Bank, this concept of food security has been further elaborated in terms of: 'access of all people at all times to enough food for an active and healthy life.' It introduced the widely accepted distinction between chronic food insecurity, associated with problems of continuing or structural poverty and low income, and transitory food insecurity, which involved periods of intensified pressure caused by natural disasters, economic collapse or conflict (FAO, 2003).

The World Food Summit (1996) adopted even a more comprehensive definition: 'Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life' (FAO, 1996). In this definition the phrase 'safe and nutritious' emphasizes food safety and nutritional composition while 'food preferences' indicates the change of the concept from mere access to access to the food preferred. This implies that people with equal access to food, but different food preferences, could show different levels of food security. This definition is again refined in the State of Food Insecurity

Submit (2001) as: ‘...a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary food preferences for an active and healthy life’.

While FAO progressively conceptualized food security, quite a large number of definitions have been given by various researchers. Hence, one can make a list of hundreds of different food security definitions at present. Maxwell and Smith (1992) alone listed over 30 different definitions customized by different researchers between 1975 and 1991.

Some defines food insecurity as ‘... a condition in which people lack the food intake they need to lead fully healthy and productive lives. Degefa (2007:4), based on the aforementioned series of definitions, conceptualized food security to Ethiopian context as: ‘Household can be described as food secure when its livelihood activities allow to meet its food requirements and other basic needs, either through its own productions i.e. crop cultivation and/or livestock rearing, through having opportunities to run own non-farm ventures or to work with somebody else, or getting access to food through transfers’. It should be noted at this juncture that the analysis of this research is based on this (Degefa's) recent description of food security as seems best fit to the current Ethiopian rural situation.

The continuing evolution of food security as an operational concept in public policy has reflected the wider recognition of the complexities of the technical and policy issues involved. A comparison of these definitions highlights considerable reconstruction of official thinking on food security that has occurred over 33 years. This provides signposts to researchers and policy analysts, which have re-shaped our understanding of food security from broad spatial entities (international to *kebele* levels) to households and individual levels. The fact that over 1 billion people suffered from hunger and malnourishment in 2010, as reported by the FAO (2010) despite the existence of more than sufficient food supply at global level is a good evidence of this paradigm shift of analysis.

Exercise 1



Read the the following questions carefully. Answer all the questions neatly and submit to your tutor

1. Explain the concept of livelihoods?
2. When was the term 'food security' coined?
3. What was the theme of the earliest concept of food security?
4. Mention and explain one of the recent definitions of food security
5. Explain the current emphasis of food security
6. Mention at least two definitions of food security that have been adopted by Ethiopian scholars

1.3. Food security analysis and indicators



Activity 5

Dear Student! How do you know whether the community where you are living is food secure or not? What techniques and indicators you use to know food security status of the community? Try to write down your guesswork in the space provided and compare against what you will read in subsequent paragraphs

As it is clearly indicated earlier on, issues related to analysis of famine and food insecurity are broad and complex, and they are often determined by the interaction of a range of environmental and socio-economic attributes. This unfortunately means, there is no single direct technique of famine and food insecurity analysis. The complexity of food security problem can be simplified by focusing on its distinct but inter-related core components.

Regarding causes of famine and food insecurity, two leading broad methodological approaches exist for their analysis. The first approach, known as *Food Availability Decline (FAD)* which dates back to the writings of Adam Smith (1723-1790) and Thomas Malthus (1766-1834), proposes that famines are principally caused by a sudden decline in food availability. It refers to the per capita food availability decline attributed to various interrelated adverse environmental and socio-economic factors. The FAD model also argues that '...anything which disrupts food production...can cause famine [food insecurity]...'. For example, natural calamities such as earthquake and drought, and manmade disasters like war and conflict may decimate agricultural production and result in pervasive food shortages that may lead to famine. This supply-based approach was the only principal explanation for famines until the prominent work of Amartya Sen (1981) who pioneered the second approach known as *Food Entitlement Decline (FED)*. In his renowned essay, *Poverty and Famines*, he suggested that food availability itself does not necessarily entitle a person to consume sufficient and nutritious food. This implies access to food is a crucial aspect in securing command over food which is determined by production, purchase, exchange, transfer, remittance or aid. However, Sen's entitlement approach has been subjected to many criticisms ranging from favorable assessment to refutation as a theory in famine and food security analyses. The food security analysis in this study considers the complementarities of FAD and FED models as it is strongly believed that because enough food must be available, and the household must have the capacity to acquire it.



Activity 6

Dear Student! Summarize the difference b/n FAD and FED in the space below

The analysis of food security status at different societal levels requires investigation of four core components: physical availability of food, economic and physical access to food, utilization, and stability (sustainability) of the other three dimensions over time. The first component, food

availability, refers to the supply-side indicator of food security referring to the capacity of the households or individuals to obtain food. It is achieved when sufficient quantities of food are consistently available to all individuals within a country or region. It can be supplied through household production, food imports, or food assistance. Physical food availability is determined by the level of food production, stock levels and net food trade.

The other dimension, economic and physical access to food, is determined by the income and expenditure condition of a household as well as food market and food price issues. It is substantially believed that Amartya Sen's (1981) theory on food entitlement has had a great influence on the materialization of the issue (food access) in the early 1980s. Sen argues people do not usually starve because of an insufficient supply of food, but because they have insufficient resources (or entitlements) to acquire it. As stated earlier on, this is considered as a paradigm shift in the approach of the unit of analysis of food security from global/national/regional/ level to household and individual level. People can have access to food through production, exchange, remittance, gifts or aid. Food access is ensured when households and all individuals within them have adequate resources to obtain appropriate foods for a nutritious diet. Global per capita food production has been substantially increasing over the past several decades. In fact, the number of overweight people has surpassed the number undernourished in the world. For instance, the world had more than one billion people who were overweight, and an estimated 925 million who were undernourished in 2010, according to World Health Organization.

The third core component of food security, utilization, refers to the way the food ought to be consumed. Food utilization refers to the proper biological use of food, requiring a diet providing sufficient energy and essential nutrients, potable water, and adequate sanitation. Effective food utilization depends in large measure on knowledge within the household of food storage and processing techniques, basic principles of nutrition and proper household care, and illness management.

The fourth component considers the sustainability of the other three components on a periodic basis. It addresses whether the nutritional status is improving or deteriorating. It includes such

aspects of food consumption as nutritional balance, hygienic preparation and preservation of food, as well as access to potable water. The fourth component of food security as asset creation referring to the position of a household in valuable farming household assets, such as livestock, farming tools and utensils that could be sold into cash or food items in times of food shortfalls to counterbalance the possible crises. In Ethiopian context, this could also be seen as intervening resources such as access to productive land, potable water, prospects of rainfall (both quantity and variability), and environmental suitability.

The food security framework shown in the figure below, cited in USAID food security framework and FAO (2008). The diagram summarizes the four core dimensions of food security: Physical availability of food, physical and economic access to food, food utilization, and sustainability of the three other core dimensions. The diagram also portrays the nature of the relationships of the core dimensions, as well as a brief description of their determinants. As indicated in the diagram, food availability is a function of the combination of domestic food stocks, food imports, food aid, and domestic food production, as well as the underlying determinants of each of these factors.

The visual analytical framework presented in one of the subsequent pages depicts that food access is influenced by the ability of households to obtain food from their own production, stocks, the market, and other sources. Access is also a function of the physical, social and policy environments which determine how effectively households are able to utilize their resources to meet their food security needs. Drastic changes in these conditions, such as drought or social conflict, may seriously disrupt production strategies and threaten the ability of the households to access food. These shocks may even lead to the loss of their productive assets such as livestock and farming equipment, which may have severe implications for the future productive potential of the households. In Ethiopian context, the amount of food production and cash income is determined by the availability and status of natural capital (such as farmland, quality and availability of water, climatic conditions and soil fertility) or household asset status (cash, farm animals and equipments, seed reserve, and manure/compost/dung stock) and human capital (working group of the household).

Food utilization, which is reflected in the nutritional status of an individual, is determined by the quantity and quality of dietary intake, care and feeding practices, and health status of the members of a household. Poor care for food, insufficient feeding practices and inadequate access to health services (such as clinics, health centers and hospitals) are also major determinants of poor health and nutrition. Unimproved food utilization has dreadful effects on labor productivity and household income-earning potential through its impact on the health and nutrition of household members.



Activity 7

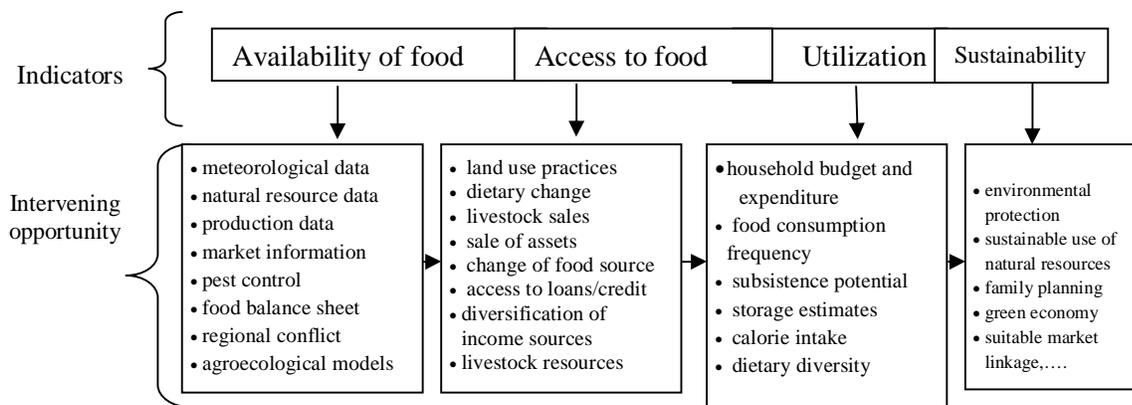
1. Explain the role of Amartya Sen in the development of the concept of food Security

2. Mention and explain the core components of food security analysis

The other emerging concept in food issues is food sovereignty. Food sovereignty is a concept coined at the 1996 World Food Summit in Rome by the members of *La Via Campesina*, a group of farmers, peasants, pastoralists, artisanal fisher-folks, indigenous people, women, rural youth, migrants as well as environmental organizations who were organized in 1993 in Mons (Belgium) to define their own food in contrast to having food largely subject to international market forces. It was re-defined in 2007 in what is known as *The La Via Campesina Declaration on Food Sovereignty* or Declaration of *Nyéléni*. The proponents of food sovereignty underlined that 'long-term food security depends on those who produce food and care for the natural environment'. As the driving forces of food producing resources, they acclaimed seven principles that are of central importance to produce adequate food (both in quality and quantity) locally which are ecologically, socially, economically and culturally appropriate to their unique

circumstances. These seven principles are deliberation of food as a basic human right, agrarian reform, effective natural resources protection, reorganization of global food trade, enforcement of transnational corporations in food trade, ensuring social peace, and democratization of agricultural policy formulation at all levels. In general, food sovereignty tries to fill two crucial elements that the term food security misses in many documents i.e. source of food and the right to food which was stated in Universal Declaration of Human Rights.

Regarding its categorization, there are two categories of food insecurity based on the time of its occurrences. These are chronic food insecurity and transitory food insecurity. Chronic food insecurity occurs when people are unable to meet their minimum food requirements persistently. Long term development measures, such as education, access to productive resources (credit, farmland and livestock) are used to address such deep-rooted (firmly held) food insecurity tribulations. Transitory food insecurity, on the other hand, happens due to sudden drops in the ability of the households to produce or access enough food to maintain good nutritional status.



It is relatively unpredictable and can emerge suddenly. Transitory food insecurity can be further divided into cyclical and temporary based on its frequency of occurrences. Temporary food insecurity occurs for a short period of time owing to unanticipated environmental and socio-economic episodes like earthquake, flooding, social conflict and abrupt rise in food prices. Cyclical or seasonal food insecurity, on the other hand, refers to a situation when a community or a household suffers from food shortfalls at regular intervals. This seems common in various parts of rural Ethiopia where the community experiences food deficit during rainy/sowing seasons on regular bases.

As it is noted hereinbefore, measurement of food security is very complex and need to be treated with the help of multiple indicators and techniques that have come into use along with the development of the concept of food security. However, for simplicity reasons, only few such rigorous indicators are painstakingly considered in this study. These are physical availability of food, economic and physical access to food, utilization and stability (sustainability) of these three cases. The utilization of these indicators depends on the procedure, purpose and depth of a research. These major indicators in turn were analyzed on the basis of the intervening opportunities to attain the indicators as shown in the figure.

Exercise 2



Dear Student! Read the the following questions carefully. Answer all the questions neatly and submit to your tutor

1. What are the determinant factors of sustainability in food security
2. Explain the difference and similarity between food security and food sovereignty?
3. What determines the availability of food?
4. Mention the major factors that determine food access
5. Do you think that every rich person in your area is food secure? Explain briefly why
'No or Yes'

1.4. Food insecurity versus famine, malnutrition and undernourishment



Activity 8

Dear Student! Do you think that food insecurity, famine, malnutrition and undernourishment refer to the same concept? Why? Try to write down your speculation in the space provided and compare your answer against what you will read in subsequent paragraphs

Sen (1999), in his famous work, *Development as Freedom*, indicates that the scarcity of food is one of the worst incidences to the modern world. It is important to note that food insecurity, famine, malnutrition and undernourishment are different concepts though interchangeably used in different literature. As indicated hereinbefore, food insecurity is a complex concept mainly referring to lack of access to enough food for all people at all times for an active and healthy life. On the other hand, famine is the worst form of transitory food insecurity often affecting huge number people for longer period of time. Some scholars explain famine as the case '...when large number of people suffer from a complete collapse in...[food] entitlements'. According to Mesfin (1986: 6), 'Famine is not a mere deficiency of food, but an absolute lack of food. In a famine situation, there is no choice [for quality and type of food]. The need is for anything that is edible'. Dissimilar to famine, malnutrition is a deficiency in quality of food, while undernourishment is a deficiency in quantity of food. In Ethiopian context, famine is conceived as the situation when a household or an individual has nothing to scrounge from its neighbors all being impecunious and indigent.

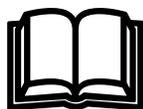
Malnutrition may not be considered only as deficiencies in food and its nutrients, but may also be caused by excess intakes or imbalances in the consumption of macro- and/or micronutrients. It may '...relate also to nonfood factors, such as inadequate care practices for children, insufficient health services and an unhealthy environment'. Malnutrition and undernourishment have direct association with poverty which deprives the community the access to adequate quantity and quality of food and socio-economic services.

At this juncture, one should carefully note that 'All cases of malnutrition and undernourishment are not necessarily associated with famine; but all famine is necessarily [associated] with malnutrition and undernourishment'. Moreover, all famine-frazzled people are food insecure, but not all food insecure people are famine-frazzled. Hence, any attempt to ensure food security is linked to avoidance of famine. In other words, famine, malnutrition and undernourishment are considered as an outcome of food insecurity.

Pertaining to another perplexing term, hunger, is 'a state in an organism in which food would be ingested, if available, either because body nutrients and certain chemicals are depleted or because certain hormones and chemicals are present'.

Similarly, hunger is defined as 'the uneasy painful sensation caused by lack of food. It is the recurrent and involuntary lack of access to food...[that] may produce malnutrition overtime'. The term hunger should be understood as the biological craving or appetite for food, and should not be confounded with other concepts that refer, more or less, to lack of access to adequate quantity and quality of food. The prime concern of this research is, therefore, to look into the role of resettlement scheme in food security attainment based on abovementioned four core components: availability, access, utilization and stability.

UNIT II: SUSTAINABLE LIVELIHOOD FRAMEWORKS AND STRATEGIES



Introduction

The sustainable livelihoods framework is a way to improve understanding of the livelihoods of poor people. It draws on the main factors that affect poor people's livelihoods and the typical relationships between these factors. It can be used in planning new development activities and in assessing the contribution that existing activities have made to sustaining livelihoods. The two key components of a sustainable livelihoods framework are that it helps in understanding the complexities of poverty and a set of principles to guide action to address and overcome poverty.

The sustainable livelihoods framework places people, particularly rural poor people, at the centre of a web of inter related influences that affect how these people create a livelihood for themselves and their households. Closest to the people at the centre of the framework are the resources and livelihood assets that they have access to and use. These can include natural resources, technologies, their skills, knowledge and capacity, their health, access to education, sources of credit, or their networks of social support. The extent of their access to these assets is strongly influenced by their vulnerability context, which takes account of trends (for example, economic, political, and technological), shocks (for example, epidemics, natural disasters, civil strife) and seasonality (for example, prices, production, and employment opportunities). Access is also influenced by the prevailing social, institutional and political environment, which affects the ways in which people combine and use their assets to achieve their goals. These are their livelihood strategies.

People are the main concern, rather than the resources they use or their governments. SLA is used to identify the main constraints and opportunities faced by poor people, as expressed by them. It builds on these definitions, and then

supports poor people as they address the constraints, or take advantage of opportunities. The framework is neither a model that aims to incorporate all the key elements of people's livelihoods, nor a universal solution. Rather, it is a means of stimulating thought and analysis, and it needs to be adapted and elaborated depending on the situation.



Unit learning outcomes

On successful completion of this unit, the students will be able to:

- explain the concepts of livelihoods framework
- list various types of sustainable livelihoods frameworks
- distinguish the basic difference between various kinds of sustainable livelihoods frameworks
- adopt and apply sustainable livelihoods framework in to her/his related studies

2.1. Sustainable livelihood framework

Activity 9

Dear Student! What do you know about sustainable livelihoods framework so far? Try to write down your conjecture in the space provided and compare your answer against what you will read in subsequent paragraphs

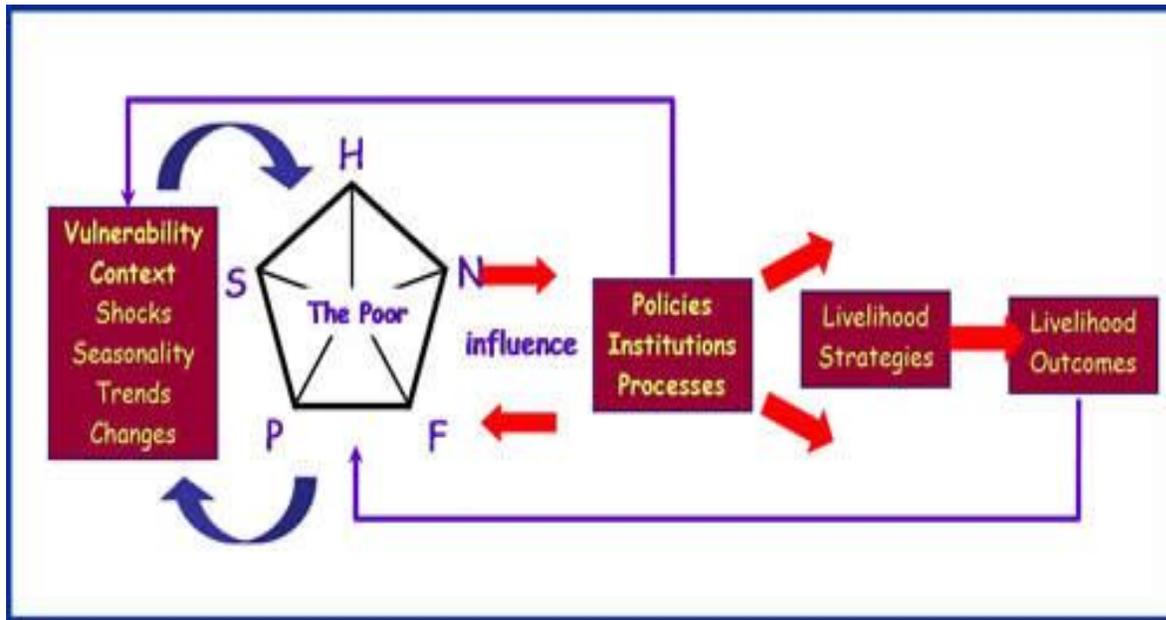
A livelihood framework is a tool to improve our understanding of livelihoods, particularly the livelihoods of the poor. It was developed over a period of several years by different organizations and researchers. This section of the book provides an introduction to the framework itself. The individual components of the framework are described in detail in this section.

Sustainable livelihoods framework has seven guiding principles. They do not prescribe solutions or dictate methods. Instead, they are flexible and adaptable to diverse local conditions.

The guiding principles are:

- ***Be people-centered.*** Sustainable livelihoods framework/approach (SLA) begins by analyzing people's livelihoods and how they change over time. The people themselves actively participate throughout the project cycle.
- ***Be holistic.*** SLA acknowledges that people adopt many strategies to secure their livelihoods, and that many actors are involved; for example the private sector, ministries, community-based organizations and international organizations.
- ***Be dynamic.*** SLA seeks to understand the dynamic nature of livelihoods and what influences them.
- ***Build on strengths.*** SLA builds on people's perceived strengths and opportunities rather than focusing on their problems and needs. It supports existing livelihood strategies.
- ***Promote micro-macro links.*** SLA examines the influence of policies and institutions on livelihood options and highlights the need for policies to be informed by insights from the local level and by the priorities of the poor.
- ***Encourage broad partnerships.*** SLA counts on broad partnerships drawing on both the public and private sectors.
- ***Aim for sustainability.*** Sustainability is important if poverty reduction is to be lasting.

The SLA framework is presented in schematic form below and shows the main components of SLA and how they are linked. It does not work in a linear manner and does not attempt to provide an exact representation of reality. Rather, it seeks to provide a way of thinking about the livelihoods of poor people that will stimulate debate and reflection about the many factors that affect livelihoods, the way they interact and their relative importance within a particular setting. This should help in identifying more effective ways to support livelihoods and reduce poverty. The picture given below represents one of the SLA approaches/frameworks.



✂ Activity 10

Summarize the guiding principles of sustainable livelihoods framework in the space provided hereunder.

The sustainable livelihoods framework presents the main factors that affect people's livelihoods, and typical relationships between these. It can be used in both planning new development activities and assessing the contribution to livelihood sustainability made by existing activities.

In particular, the framework:

- provides a checklist of important issues and sketches out the way these link to each other
- draws attention to core influences and processes; and
- emphasizes the multiple interactions between the various factors which affect livelihoods.

The framework is centered on people. It does not work in a linear manner and does not try to present a model of reality. Its aim is to help stakeholders with different perspectives to engage in structured and coherent debate about the many factors that affect livelihoods, their relative importance and the way in which they interact. This, in turn, should help in the identification of appropriate entry points for support of livelihoods.

The form of the framework is not intended to suggest that the starting point for all livelihoods (or livelihood analysis) is the *Vulnerability Context* which through a series of permutations yields *Livelihoods Outcomes*. Livelihoods are shaped by a multitude of different forces and factors that are themselves constantly shifting. People-centered analysis is most likely to begin with simultaneous investigation of people's assets, their objectives (the *Livelihood Outcomes* which they are seeking) and the *Livelihood Strategies* which they adopt to achieve these objectives.

Important feedback is likely between:

- a) Transforming Structures and Process and the Vulnerability Context; and
- b) Livelihood Outcomes and Livelihood Assets.

There are other feedback relationships that affect livelihoods which are not shown. For example, it has been shown that if people feel less vulnerable (*Livelihood Outcome*) they frequently choose to have fewer children. This has implications for population trends which might be an important part of the *Vulnerability Context*.

Activity 11

Summarize the theme of (a) livelihood outcome, (b) vulnerability context & (c) livelihood strategies in the space provided after this sentence.

The framework is intended to be a versatile tool for use in planning and management. It offers a way of thinking about livelihoods that helps order complexity and makes clear the many factors that affect livelihoods. A more important task than perfecting the framework itself is putting the ideas that it represents into practice. If that calls for adaptation of certain boxes or revision of certain definitions to make the framework more useful, the entire better; the framework becomes a living tool. Use of the framework is intended to make a distinct contribution to improving organizations' ability to eliminate poverty. It is not simply a required step in project/program preparation, nor does it provide a magic solution to the problems of poverty elimination. In order to get the most from the framework:

- a) The core ideas that underlie it should not be compromised during the process of adaptation. One of these core ideas is that (most) analysis should be conducted in a participatory manner.
- b) Use of the framework should be underpinned by a serious commitment to poverty elimination. This should extend to developing a meaningful dialogue with partners about how to address the underlying political and economic factors that perpetuate poverty.
- c) Those using the framework must have the ability to recognize deprivation in the field even when elites and others may want to disguise this and skew benefits towards themselves (this will require skill and rigor in social analysis).

Despite differences in emphasis by different practitioners, the livelihoods framework helps us to:

- identify (and value) what people are already doing to cope with risk and uncertainty
- make the connections between factors that constrain or enhance their livelihoods on the one hand, and policies and institutions in the wider environment
- identify measures that can strengthen assets, enhance capabilities and reduce vulnerability

2.2. Livelihoods framework compared

Activity 12

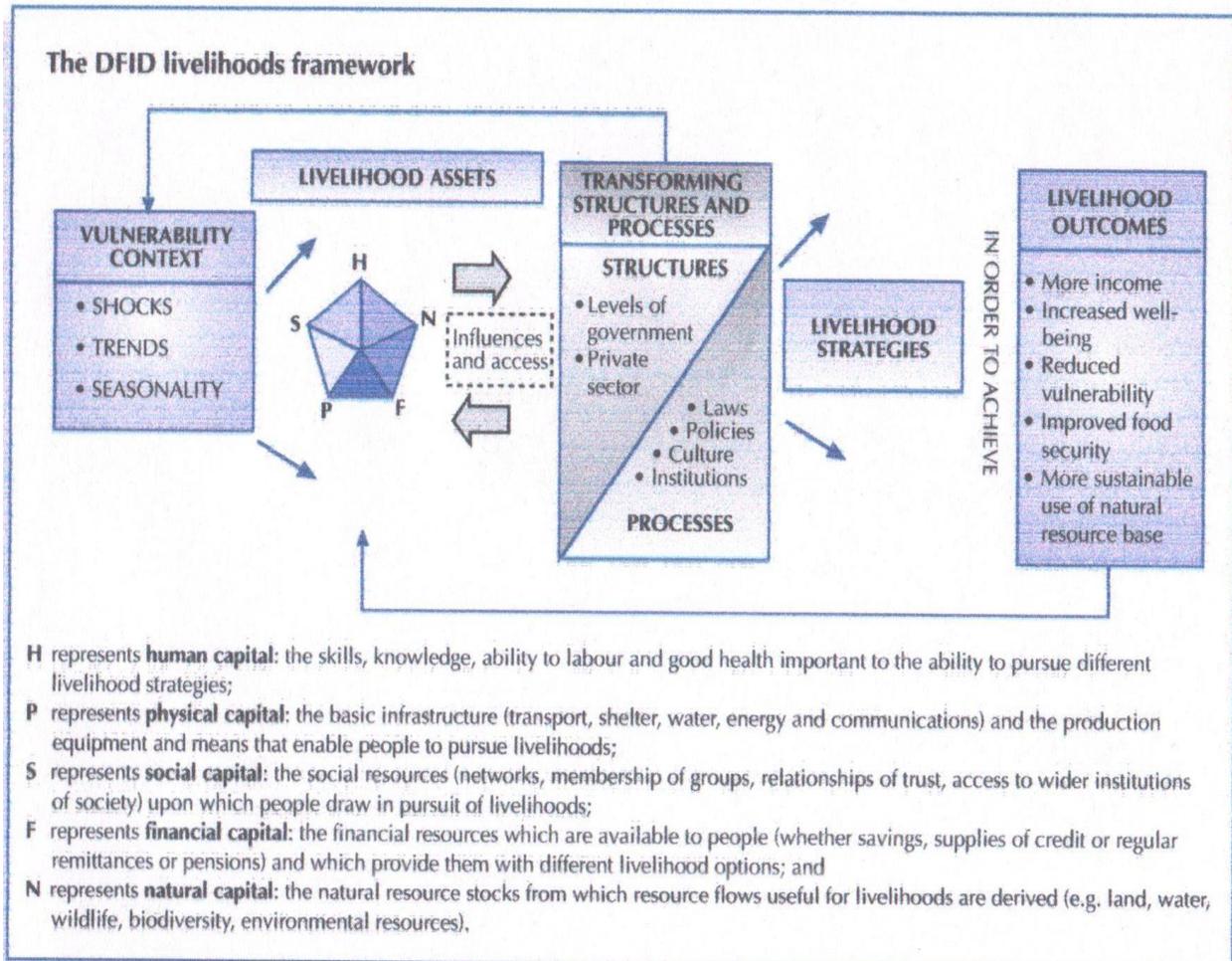
Dear Student! How many livelihood frameworks do you know? List down what you have in the space provided and compare against what you will read in subsequent paragraphs

A) The DFID livelihoods framework

This is one of the most widely used frameworks.

The DFID (Department for International Development of UK) framework sets out to conceptualize:

- how people operate within a vulnerability context that is shaped by different factors-shifting seasonal constraints (and opportunities), economic shocks and longer-term trend
- how they draw on different types of livelihood assets or capital in different combinations which are influenced by the vulnerability context and a range of institutions and processes
- how they use their asset base to develop a range of livelihood strategies to achieve desired livelihood outcomes.



The arrows in the framework try to show how the different elements (all of which are highly dynamic) interrelate and influence one another. The framework is informed by certain core concepts:

- it is people-centered
- it advocates that development policy and practice should flow from an understanding of the poor and their livelihoods strategies
- the poor should directly contribute to determining development priorities and be able to influence the institutions and process that impact on their lives.

It is holistic in that the framework encourages analysis that cuts across different sectors and recognizes a range of actors and influences as well as multiple livelihood strategies and outcomes. Moreover it:

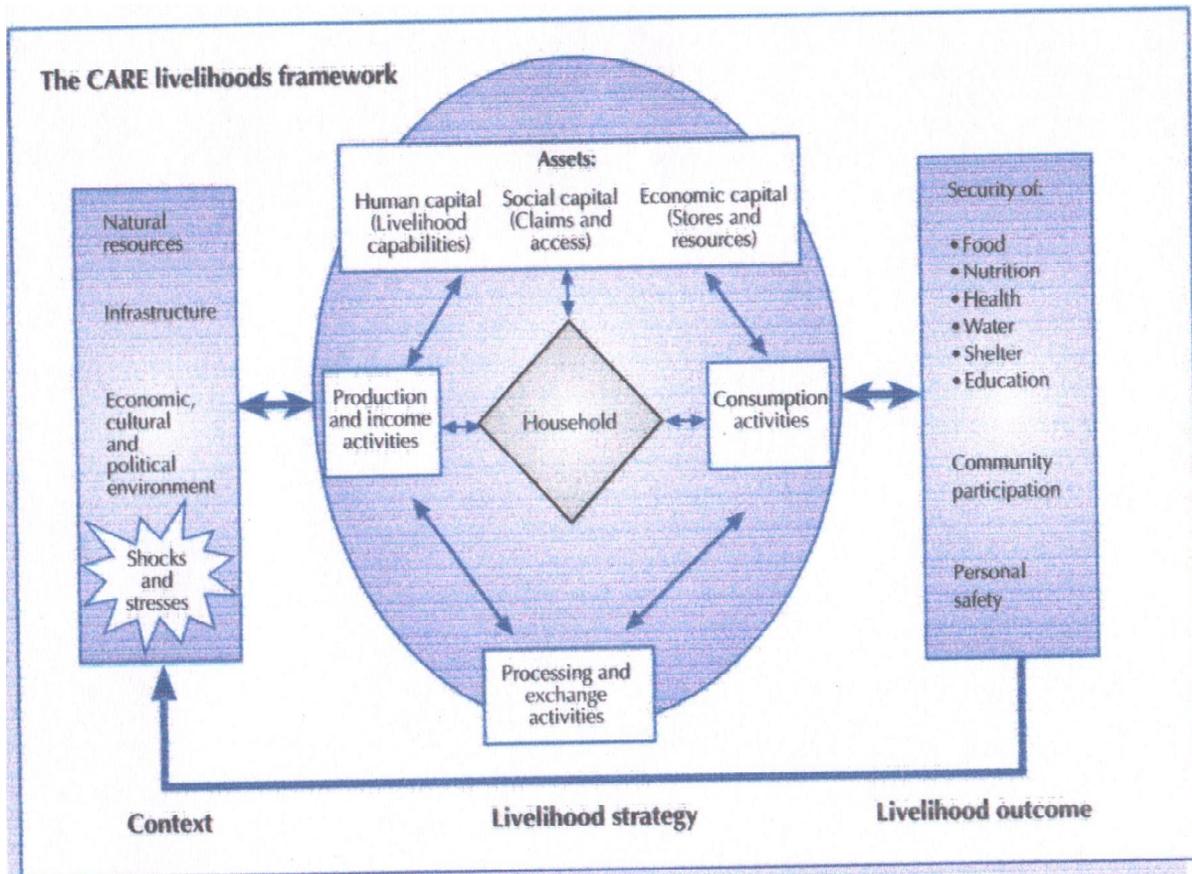
- is dynamic in that it tries to understand change over time and the complex interplay between different factors
- starts from an analysis of strengths rather than needs and problems.
- looks for and makes the linkages between ‘micro’ and ‘macro’ levels.
- is concerned with sustainability in all its dimensions: social, economic, institutional and ecological.

B) The CARE livelihoods framework

CARE is an international NGO that uses the livelihoods approach as its primary planning framework. CARE uses the Chambers and Conway livelihoods definition. It identifies three fundamental attributes of livelihoods:

- the possession of human capabilities
- access to tangible and intangible assets
- the existence of economic activities

CARE’s approach is similar to DFID in that it emphasizes the dynamic interrelationships between different aspects of the framework. However, rather than looking at using the ‘five capitals’ approach to assets, it distinguishes between assets, capabilities and activities. The CARE framework does not explicitly identify ‘transforming structures and processes’ and places less emphasis on macro-micro links within the framework, although these are important in many aspects of its work. CARE emphasizes using a ‘light’ conceptual framework and tries to include other approaches. It also aims to allow any framework to be adapted as lessons are learnt so that multiple actors contribute to the evolution of the livelihoods framework.



✂ Activity 13

Summarize the difference and similarity between DFID & CARE livelihoods frameworks

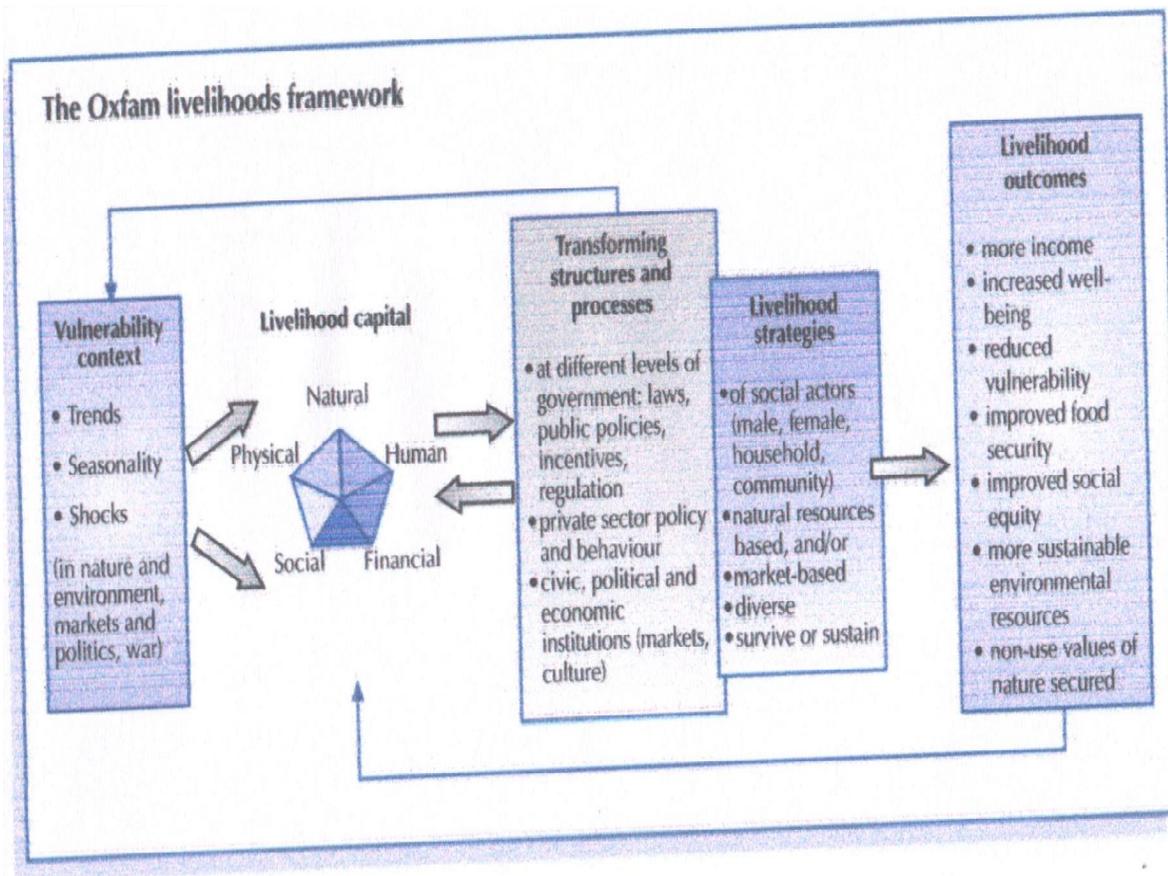
C) The OXFAM livelihoods framework

Oxfam uses a livelihoods framework 'semi-officially' that has a lot in common with the DFID framework. However, Oxfam emphasizes that there are no 'established rules'. Oxfam says existing frameworks are still too abstract for field-level staff to understand, although they are valuable at programming and policy levels.

Oxfam also draws on Chambers and Conway for its definition of sustainable livelihoods and emphasizes that sustainability has different dimensions:

- economic (for example, the functioning of markets and credit supply)
- social (networks of reciprocity, gender equity)
- institutional (capacity building, access to services and technology, political freedom)
- ecological (quality and availability of environmental resources).

This approach is rights-based and according to Oxfam, everyone has the right to a sustainable livelihood.

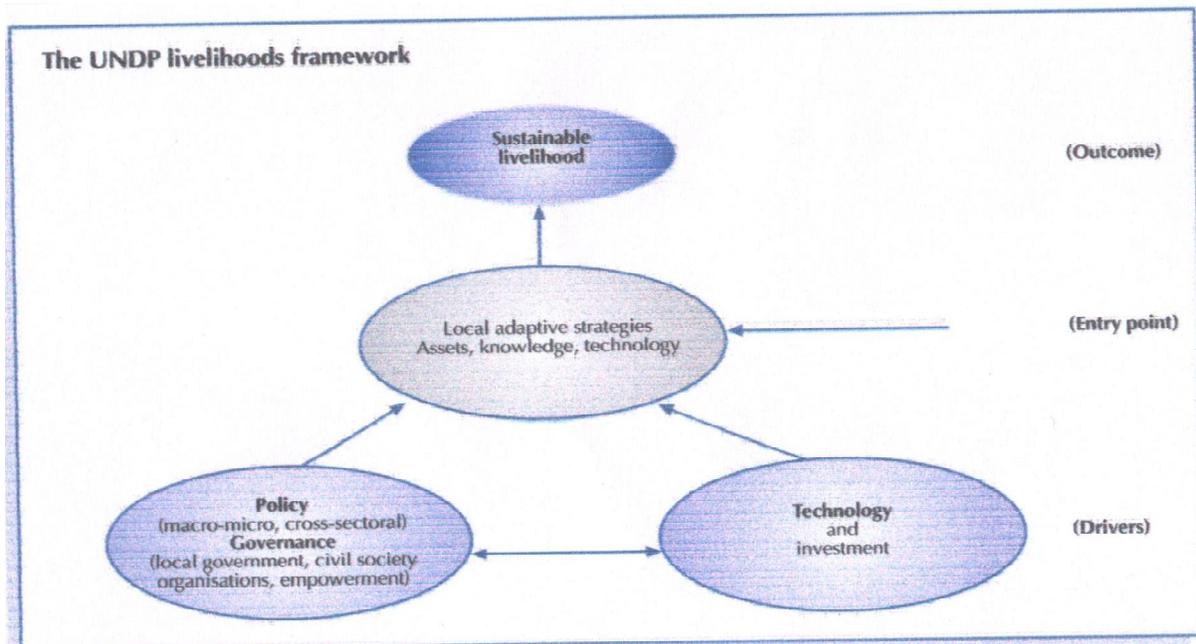


D) The UNDP livelihoods framework

The United Nations Development Programme (UNDP) understands livelihoods as the means, activities, entitlements and assets by which people make a living. Sustainable livelihoods are defined as those that are:

- able to cope with and recover from shocks and stresses such as drought, civil war and policy failure through coping and adaptive strategies
- economically effective
- ecologically sound
- socially equitable

Like DFID, UNDP focuses on people's strengths rather than their needs and emphasizes the importance of making micro-macro links.

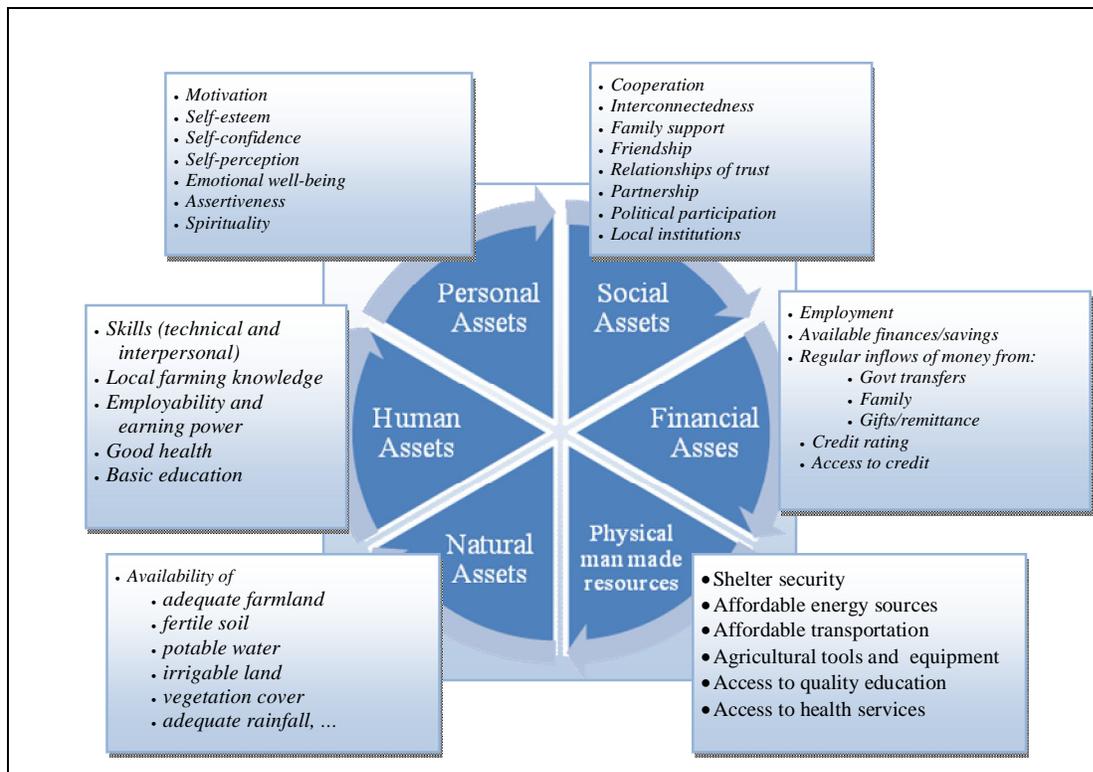


✂ Activity 14

Summarize the difference and similarity between OXFAM and UNDP livelihood frameworks

E) Some adapted livelihoods framework into Ethiopian context

Several researchers in Ethiopia have tried to adapt the livelihoods frameworks into Ethiopian situation. The livelihoods framework indicated below, for example, is adapted from Haidar (2009) by Messay (2011) into Ethiopian context. The asset building blocks are given in detail.



Activity 15

Explain the difference and similarity between other livelihoods frameworks mentioned from A to D above and the one modified by Messay as indicated above

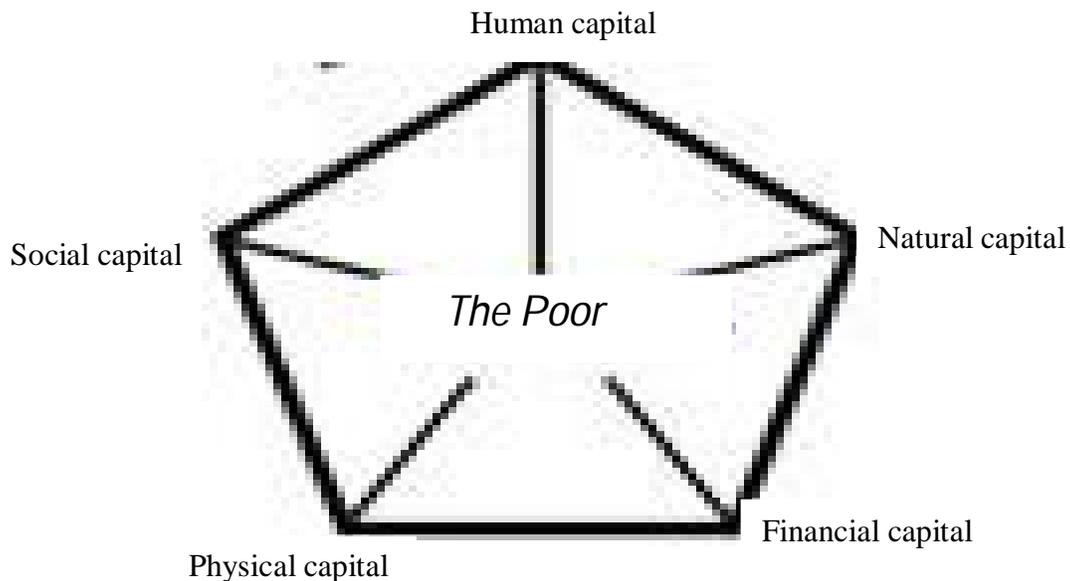
2.3.The asset building blocks of livelihood

The term 'sustainable livelihood' came to prominence as a development and poverty reduction concept in the early 1990s based on the important advances in research endeavors on the subject of famine and food insecurity incidences during the 1980s. The framework shows how, in different contexts, sustainable livelihoods are achieved through access to a range of livelihood resources (natural, economic, human, physical and social capitals) combined in different livelihood strategies strived for survival over a period of time. The framework portrays the interconnections between the main factors that affect people's livelihoods as can be shown in the pictorial frameworks hereinbefore.

It makes connection between people and the overall enabling environment that influences the outcomes of livelihood strategies. It brings attention to bear on the inherent potential of people in terms of their skills, social networks, access to physical and financial resources, and ability to influence core governmental, non-governmental and public institutions. Hence, the present livelihoods status of the resettlers seems to be better in view of the key concepts and building blocks of the sustainable livelihoods framework. Of the building blocks natural, physical and financial assets of the resettlers have been discussed in detail in the preceding chapter under the sub-section 'achievements in the drive to attain food security'. Human, personal and social assets of the resettlers are presented in the succeeding sections.

2.4. Livelihood assets: the asset pentagon

The livelihoods approach is concerned first and foremost with people. It seeks to gain an accurate and realistic understanding of people's strengths (assets or capital endowments) and how they endeavor to convert these into positive livelihood outcomes. The approach is founded on a belief that people require a range of assets to achieve positive livelihood outcomes; no single category of assets on its own is sufficient to yield all the many and varied livelihood outcomes that people seek. This is particularly true for poor people whose access to any given category of assets tends to be very limited. As a result they have to seek ways of nurturing and combining what assets they do have in innovative ways to ensure survival.



The asset pentagon lies at the core of the livelihoods framework, 'within' the vulnerability context. The pentagon was developed to enable information about people's assets to be presented visually, thereby bringing to life important inter-relationships between the various assets or capitals: human, natural, financial, physical and social capitals.

The shape of the pentagon can be used to show schematically the variation in people's access to assets. The idea is that the centre point of the pentagon, where the lines meet, represents zero access to assets while the outer perimeter represents maximum access to assets. On this basis

different shaped pentagons can be drawn for different communities or social groups within communities.

It is important to note that a single physical asset can generate multiple benefits. If someone has secure access to land (natural capital) they may also be well-endowed with financial capital, as they are able to use the land not only for direct productive activities but also as collateral for loans. Similarly, livestock may generate social capital (prestige and connectedness to the community) for owner while at the same time being used as productive physical capital (think of animal traction) and remaining, in itself, as natural capital. In order to develop an understanding of these complex relationships it is necessary to look beyond the assets themselves, to think about prevailing cultural practices and the types of structures and processes that ‘transform’ assets into livelihood outcomes. Pentagons can be useful as a focus point for debate about suitable entry points, how these will serve the needs of different social groups and likely trade-offs between different assets. However, using the pentagon in this way is necessarily representative. At a generic level there is no suggestion that we can-or should-quantify all assets, let alone develop some kind of common currency that allows direct comparison between assets. This does not, of course, rule out the development of specific, quantifiable indicators of assets where these are thought to be useful.

Activity 16

Mention the livelihoods building blocks. Describe each of them briefly and compare your descriptions against what you will read in subsequent paragraphs

Human capital

Human capital represents the skills, knowledge, ability to labor and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. At a household level human capital is a factor of the amount and quality of labor available; this varies according to household size, skill levels, leadership potential, health status, etc. Human capital appears in the generic framework as a livelihood asset, that is, as a building block or means of achieving livelihood outcomes. Its accumulation can also be an end in itself. Many people regard ill-health or lack of education as core dimensions of poverty and thus overcoming these conditions may be one of their primary livelihood objectives.

Social capital

There is much debate about what exactly is meant by the term ‘social capital’. In the context of the sustainable livelihoods framework it is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through:

- **networks and connectedness**, either vertical (patron/client) or horizontal (between individuals with shared interests) that increase people’s trust and ability to work together and expand their access to wider institutions, such as political or civic bodies;
- **membership of more formalized groups** which often entails adherence to mutually-agreed or commonly accepted rules, norms and sanctions; and
- **relationships of trust, reciprocity and exchanges** that facilitate co-operation, reduce transaction costs and may provide the basis for informal safety nets amongst the poor.

The above are all inter-related. For example, membership of groups and associations can extend people’s access to and influence over other institutions. Likewise trust is likely to develop between people who are connected through kinship relations or otherwise. Of all the five livelihood building blocks, social capital is the most intimately connected to *Transforming Structures and Processes*). In fact, it can be useful to think of social capital as a product of these structures and processes, though this over-simplifies the relationship. Structures and processes might themselves be products of social capital; the relationship goes two ways and can be self reinforcing. For example:

- when people are already linked through common norms and sanctions they may be more likely to form new organizations to pursue their interests; and
- strong civil society groups help people to shape policies and ensure that their interests are reflected in legislation.

Natural capital

Natural capital is the term used for the natural resource stocks from which resource flows and services (e.g. nutrient cycling, erosion protection) useful for livelihoods are derived. There is a wide variation in the resources that make up natural capital, from intangible public goods such as the atmosphere and biodiversity to divisible assets used directly for production (trees, land, etc.). Within the sustainable livelihoods framework, the relationship between natural capital and the Vulnerability Context is particularly close. Many of the shocks that devastate the livelihoods of the poor are themselves natural processes that destroy natural capital (e.g. fires that destroy forests, floods and earthquakes that destroy agricultural land) and seasonality is largely due to changes in the value or productivity of natural capital over the year.

Physical capital

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods.

- Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive.
- Producer goods are the tools and equipment that people use to function more productively.

The following components of infrastructure are usually essential for sustainable livelihoods:

- affordable transport;
- secure shelter and buildings;
- adequate water supply and sanitation;
- clean, affordable energy; and
- access to information (communications).

Infrastructure is commonly a public good that is used without direct payment. Exceptions include shelter, which is often privately owned, and some other infrastructure that is accessed for a fee related to usage (e.g. toll roads and energy supplies). Producer goods may be owned on an individual or group basis or accessed through rental or ‘fee for service’ markets, the latter being common with more sophisticated equipment.

Financial capital

Financial capital denotes the financial resources that people use to achieve their livelihood objectives. The definition used here is not economically robust in that it includes flows as well as stocks and it can contribute to consumption as well as production. However, it has been adopted to try to capture an important livelihood building block, namely the availability of cash or equivalent that enables people to adopt different livelihood strategies.

There are two main sources of financial capital.

- **Available stocks:** Savings are the preferred type of financial capital because they do not have liabilities attached and usually do not entail reliance on others. They can be held in several forms: cash, bank deposits or liquid assets such as livestock and jewellery. Financial resources can also be obtained through credit-providing institutions.
- **Regular inflows of money:** Excluding earned income, the most common types of inflows are pensions, or other transfers from the state, and remittances. In order to make a positive contribution to financial capital these inflows must be reliable (while complete reliability can never be guaranteed there is a difference between a one-off payment and a regular transfer on the basis of which people can plan investments).

2.5. Livelihood strategies and outcomes

Livelihood strategy is the overarching term used to denote the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals (including productive activities and investment strategies).

Recent studies have drawn attention to the enormous diversity of livelihood strategies at every level: within geographic areas, across sectors, within households and over time. This is not a question of people moving from one form of employment or ‘own-account’ activity to another. Rather, it is a dynamic process in which they combine activities to meet their various needs at different times. A common manifestation of this at the household level is ‘straddling’ whereby different members of the household live and work in different places, temporarily (e.g. seasonal migration) or permanently. Social patterns such as this clearly complicate analysis and underline the importance of viewing households and communities within their wider context. Since goods, financial resources and people are all mobile, an accurate picture of livelihoods cannot be gained if artificial boundaries are drawn.

Livelihood outcomes, on the other hand, are the achievements or outputs of Livelihood Strategies. Once again, the important idea associated with this component of the framework is that we, as outsiders, investigate, observe and listen, rather than jumping to quick conclusions or making hasty judgments about the exact nature of the outcomes that people pursue. In particular, we should not assume that people are entirely dedicated to maximizing their income. Rather, we should recognize and seek to understand the richness of potential livelihood goals. This, in turn, will help us to understand people’s priorities, why they do what they do, and where the major constraints lie.

The livelihood outcomes that appear in livelihoods frameworks are effectively categories introduced to make this section of the framework manageable. Each one may or may not be relevant in any given situation-this can only be established through participatory enquiry.

- **More income:** Although income measures of poverty have been much criticized, people certainly continue to seek a simple increase in net returns to the activities they undertake and overall increases in the amount of money coming into the household (or their own pocket). Increased income also relates to the idea of the economic sustainability of livelihoods.
- **Increased well-being:** In addition to income and things that money can buy, people value nonmaterial goods. Their sense of well-being is affected by numerous factors, possibly including: their self-esteem, sense of control and inclusion, physical security of household

members, their health status, access to services, political enfranchisement, maintenance of their cultural heritage, etc.

- **Reduced vulnerability:** Poor people are often forced to live very precariously, with no cushion against the adverse effects of the Vulnerability Context; their livelihoods are to all intents and purposes unsustainable. For such people, reducing their vulnerability to the downside and increasing the overall social sustainability of their livelihoods may well take precedence over seeking to maximize the upside
- **Improved food security:** Food insecurity is a core dimension of vulnerability. It appears as a separate category in the framework in order to emphasize its fundamental importance, and because this helps to locate the activities of those governments and donors that focus on food security. It is also worth noting that participatory poverty assessments have shown hunger and dietary inadequacy to be a distinct dimension of deprivation
- **More sustainable use of the natural resource base:** Environmental sustainability, or sustainability of the natural resource base.

Exercise 3



Read the the following questions carefully. Respond to all the questions neatly and submit your answers to your tutor

1. What is a livelihoods framework?
2. Mention as many livelihoods frameworks you know and describe each of them briefly
3. What are the building blocks of livelihoods?
4. Remark on the major components of a physical capital and describe how they are said to be components of a physical capital
5. Point out and describe the components of social capital in Ethiopian context
6. Describe the difference between personal capital and human capital based on the livelihoods framework contextualized to the Ethiopian situation

UNIT III: THE LINKAGE BETWEEN SUSTAINABLE LIVELIHOODS FRAMEWORK AND OTHER DEVELOPMENT APPROACHES



Introduction

There are various models/theories aiming at poverty reduction ranging from individual level to the global community. Each model has its own strengths and weaknesses. Some of them seem to be more theoretical to apply to the real situation while others can easily be contextualized to the existing situations. Hence it is worthwhile to discuss some of these models in brief so as to have a glance at the links each model bears to sustainable livelihoods framework.



Unit learning outcomes

On successful completion of this unit, the students will be able to:

- remark on various development models
- explain the concepts of each development models
- state the relationships between each development models and livelihoods frameworks
- explain how to apply and contextualize the concepts of each development model to Ethiopian situation



Activity 17

Dear student! Mention as many as the development approaches you know in the space provided hereunder. Illustrate each of them briefly and compare your illustrations against what you will read in subsequent paragraphs

3.1. Rights-based approaches to development

Rights-based approach to development is an approach to development promoted by many International Development Agencies and non-governmental organizations (NGOs) that aim to achieve a positive transformation of power relations among the various development actors. This practice blurs the distinction between human rights and development. There are two stakeholder groups in rights-based development, the rights holders (the community or the group who does not experience full rights) and the duty bearers (usually government organs or the institutions who are obligated to fulfill the rights of the rights holders). Rights-based approach aims at strengthening the capacity of duty bearers and empowers the rights holders.

Human rights came into global discourse after the United Nations passed the Universal Declaration of Human Rights in 1948. This was the first global recognition that all humans are inherently entitled to rights. Then in 1976 the UN signed the United Nations Covenant on Civil and Political Rights, officially endorsing democracy. However, the United Nations endorsement of democracy had little to do with the UN's stance on development. Human rights became one of the major debates between the West and Communist states during the Cold War.

Human rights organizations such as Human Rights Watch and Amnesty International, used to focus primarily on documenting human rights violations on the civil and political level. No longer do these organizations focus solely on human rights violations, but also on social, economic, and cultural rights.^[5] The evolution of human rights organizations and development organizations and the western idea that rights are asserted through responsibilities, duties, transparency, trust, and accountability have led to the development of the rights-based approach. In 1993 the UN held the World Conference on Human Rights in Vienna; during this conference they developed the Vienna Declaration and Programme of Action, where they linked democracy, human rights, sustainability and development. This made the Cold War division of Civil and Political Rights and Economic Social and Cultural rights interdependent. This further led to the linkage between human rights and development and enabled policy makers and developers to incorporate a rights-based approach into their policies.

In 1997, the Secretary General to the United Nations called to mainstream human rights into all work of the United Nations. Then in 2003, various organizations and agencies met to develop a "Common Understanding" of a human rights-based approach. Giving six main principles:

- Universality and inalienability
- Indivisibility
- Inter-dependence and inter-Relatedness
- Equality and non-discrimination
- Participation and inclusion
- Accountability and rule of law

The United Nations developed this guide to address the significant changes occurring in the international development community with the adoption of human rights in development work. Since the UN published their standards and steps to a rights-based approach to development, many bilateral donor agencies, such as CIDA and DFID, and international NGOs such as CARE and Oxfam have taken similar steps.

This new developmental theory of rights-based approach has been met with positive feedback as well as criticism. There are thoughts that incorporating the language of human rights with development is just a change of terminology and doesn't change the programs being implemented. The ability for a state to implement public policy has been hindered due to the need to comply with economic and social rights.

While there still is more positive feedback when dealing with rights-based approach to development there are still criticisms surrounding the focus on combining human rights with development. These criticisms stem from the idea that changing the terminology will not increase NGOs' productivity or even necessarily the NGOs' programs that are being implemented.

Another criticism that has been brought up is that there have been many NGOs that have combined the ideas of human rights along with development before the term 'rights-based approach to development' was coined. There has been a natural linkage between development

and rights and there has frequently been pressure on states and governments to be involved with issues of human rights as well as development. Therefore, in many cases, changing the terminology will not increase the effectiveness of the state.

3.2. Participatory development approach

Participatory Development seeks to engage local populations in development projects. Participatory development (PD) has taken a variety of forms since it emerged in the 1970s, when it was introduced as an important part of the *basic needs approach* to development. Most manifestations of PD seek to give the poor a part in initiatives designed for their benefit in the hopes that development projects will be more sustainable and successful if local populations are engaged in the development process. PD has become an increasingly accepted method of development practice and is employed by a variety of organizations. It is often presented as an alternative to mainstream top-down development. There is some question about the proper definition of PD as it varies depending on the perspective applied. Two perspectives that can define PD are the *Social Movement Perspective* and the *Institutional Perspective*:

The *Social Movement Perspective* defines participation as the mobilization of people to eliminate unjust hierarchies of knowledge, power, and economic distribution. This perspective identifies the goal of participation as an empowering process for people to handle challenges and influence the direction of their own lives.

The *Institutional Perspective* defines participation as the reach and inclusion of inputs by relevant groups in the design and implementation of a development project. The *Institutional Perspective* uses the inputs and opinions of relevant groups, or stakeholders in a community, as a tool to achieve a pre-established goal defined by someone external to the community involved. The development project, initiated by an activist external to the community involved, is a process by which problem issues in a community can be divided into stages, and this division facilitates assessment of when and to what degree a participatory approach is relevant. From an institutional perspective, there are four key stages of a development project: Research Stage,

Design Stage, Implementation Stage, Evaluation Stage that are defined in later sections of this article. The institutional perspective can also be referred to as a Project-Based Perspective.

Research stage is where the development problem is accurately defined. All relevant stakeholders can be involved in this process. The research around the development problem can include studying previous experiences, individual and community knowledge and attitudes, existing policies and other relevant contextual information related to socio-economic conditions, culture, spirituality, gender, etc.

Design stage defines the actual activities. A participatory approach helps to secure the ownership and commitment of the communities involved. Active participation by local citizens and other stakeholders aims to enhance both the quality and relevance of the suggested interventions.

Implementation stage is when the planned intervention is implemented. Participation at this stage increases commitment, relevance and sustainability.

Evaluation stage participation ensures that the most significant changes are voiced, brought to common attention and assessed. For a meaningful evaluation, indicators and measurements should be defined in a participatory process at the very beginning of the initiative involving all relevant stakeholders.

Forms of participatory participation

Passive participation is the least participatory of the four approaches. Primary stakeholders of a project participate by being informed about what is going to happen or has already happened. People's feedback is minimal or non-existent, and their participation is assessed through methods like head counting and contribution to the discussion (sometimes referred to as participation by information).

- 1. Participation by consultation** is an extractive process, whereby stakeholders provide answers to questions posed by outside researchers or experts. Input is not limited to meetings but can be provided at different points in time. In the final analysis, however, this

consultative process keeps all the decision-making power in the hands of external professionals who are under no obligation to incorporate stakeholders' input.

2. **Participation by collaboration** forms groups of primary stakeholders to participate in the discussion and analysis of predetermined objectives set by the project. This level of participation does not usually result in dramatic changes in what should be accomplished, which is often already determined. It does, however, require an active involvement in the decision-making process about how to achieve it. This incorporates a component of horizontal communication and capacity building among all stakeholders—a joint collaborative effort. Even if initially dependent on outside facilitators and experts, with time collaborative participation has the potential to evolve into an independent form of participation.
3. **Empowerment participation** is where primary stakeholders are capable and willing to initiate the process and take part in the analysis. This leads to joint decision making about what should be achieved and how. While outsiders are equal partners in the development effort, the primary stakeholders are *primus inter pares*, i.e., they are equal partners with a significant say in decisions concerning their lives. Dialogue identifies and analyzes critical issues and an exchange of knowledge and experiences leads to solutions. Ownership and control of the process rest in the hands of the primary stakeholders.

Activity 18

Summarize the difference and similarity between *rights-based approaches to development* and *participatory development approach*.

3.3. Sector-wide approaches

Sector-Wide Development Approaches have emerged in response to changes in the aid environment over the last decade. Increased emphasis has been placed on poverty reduction through the establishment of the Millennium Development Goals (MDGs). New mechanisms have been established, such as the Heavily Indebted Poor Countries (HIPC) initiative and Poverty Reduction Strategies. There has been intense debate on the failure of projects to address poverty in a systematic way, and around aid effectiveness generally. In addition, the importance of government ownership and government leadership has been increasingly recognized.

A SWAp is:

- an approach which involves a different type of relationship between government and development partners;
- a mechanism through which support to public expenditure programs can be better coordinated;
- a means of improving aid effectiveness-by improving the efficiency and effectiveness with which all resources are used, and accounted for, in the sector.

It is important to remember that a SWAp is an approach, not a blueprint. The approach is based on key principles and attempts to progressively apply them, but it is the national conditions and preferences that guide the development of the process. A SWAp is a form of Programme Based Approach (PBA) applied at the sector level.

The key components of an effective SWAp are:

- A clear nationally-owned sector policy and strategy;
- A medium term expenditure framework that reflects the sector strategy;
- Systematic arrangements for programming resources that support the sector;
- A performance monitoring system than measures progress and strengthens accountability.

3.4. Integrated rural development

Many earlier development approaches assumed that rural society was homogenous (in other words, that there was no differentiation between households in rural areas) and that households had single-purpose economies (in other words, that they only had one way of making a living). As a result, development agencies tended to focus on narrow, sectoral, production- orientated strategies that often bypassed those most at risk and failed to recognize that poor households have multiple economic strategies. One of the key findings that flowed from participatory research and appraisal was a much more subtle understanding of livelihoods and the different elements that they combine.

The Integrated Rural Development Programme (IRDP) is a rural development program firstly launched by the Government of India (in 1978) and extended throughout India by 1980. It is a self-employment program intended to raise the income-generation capacity of target groups among the poor. The target group consists largely of small and marginal farmers, agricultural laborers and rural artisans living below the poverty line.

RDP is a major self-employment program for Poverty Alleviation. The objective of IRDP is to provide suitable income generating assets through a mix of subsidy and credit to the poor with a view to bring them above the Poverty Line. The objective of IRDP is to enable identified rural poor families to cross the poverty line by providing productive assets and inputs to the target groups.

Activity 19

Summarize the difference and similarity between Sector-wide Approach (SWA) and Integrated Rural Development Approach (IRDA) briefly

3.5. Developmental state model

Developmental state, or hard state, is a term used by international political economy scholars to refer to the phenomenon of state-led macroeconomic planning in East Asia in the late twentieth century. In this model of capitalism (sometimes referred to as state development capitalism), the state has more independent, or autonomous, political power, as well as more control over the economy. A developmental state is characterized by having strong state intervention, as well as extensive regulation and planning. The term has subsequently been used to describe countries outside East Asia which satisfy the criteria of a developmental state. Botswana, for example, has warranted the label since the early 1970s.

The first person to seriously conceptualize the developmental state was Chalmers Johnson. He wrote in his book 'MITI and the Japanese Miracle'. In states that were late to industrialize, the state itself led the industrialization drive, that is, it took on developmental functions. These two differing orientations toward private economic activities, the regulatory orientation and the developmental orientation, produced two different kinds of business-government relationships. The United States is a good example of a state in which the regulatory orientation predominates, whereas Japan is a good example of a state in which the developmental orientation predominates. A regulatory state governs the economy mainly through regulatory agencies that are empowered to enforce a variety of standards of behavior to protect the public against market failures of various sorts, including monopolistic pricing, predation, and other abuses of market power, and by providing collective goods (such as national defense or public education) that otherwise would be undersupplied by the market. In contrast, a developmental state intervenes more directly in the economy through a variety of means to promote the growth of new industries and to reduce the dislocations caused by shifts in investment and profits from old to new industries. In other words, developmental states can pursue industrial policies, while regulatory states generally cannot.

As in the case of Japan, there is little government ownership of industry, but the private sector is rigidly guided and restricted by bureaucratic government elites. These bureaucratic government elites are not elected officials and are thus less subject to influence by either the corporate-class

or working-class through the political process. The argument from this perspective is that a government ministry can have the freedom to plan the economy and look to long-term national interests without having their economic policies disrupted by either corporate-class or working-class short-term or narrow interests.

Characteristics of the Developmental state

- Emphasis on market share over profit
- Economic nationalism
- Protection of fledging domestic industries
- Focus on foreign technology transfer
- Large government bureaucracy
- Alliance between the state, labor and industry called corporatism
- Skepticism of neoliberalism and the Washington Consensus
- Prioritization of economic growth over political reform
- Legitimacy and Performance
- Emphasis on technical education

Some of the best prospects for economic growth in the last few decades have been found in East and Southeast Asia. Japan, China, Singapore, India, Thailand, Taiwan, Vietnam, Malaysia, South Korea, Philippines, and Indonesia are developing at high to moderate levels. Thailand, for example, has grown at double-digit rates most years since the early 1980s. China has been the world leader in economic growth since 2001. It is estimated that it took England around 60 years to double its economy when the Industrial Revolution began. It took the United States around 50 years to double its economy during the American economic take-off in the late nineteenth century. Several East and Southeast Asian countries today have been doubling their economies every 10 years.

It is important to note that in most of these Asian countries, it is not just that the rich are getting richer, but the poor are becoming less poor. For example, poverty has dropped dramatically in Thailand. Research in the 1960s showed that 60 percent of the people in Thailand lived below a

poverty level estimated with cost of basic necessities. By 2004, however, similar estimates showed that poverty there was around 13 to 15 percent. Thailand has been shown by some World Bank figures to have had the best record for reducing poverty per increase in GNP of any nation in the world.

When viewed through the lens of dependency theory, developmentalism is about countries such as Thailand, Taiwan, Malaysia, South Korea, and increasingly Vietnam, where the governments are able and willing to protect their people from the negative consequences of foreign corporate exploitation. They tend to have a strong government, also called a developmental state or hard state and have leaders who can confront multinationals and demand that they operate to protect their people's interests. These 'development states' have the will and authority to create and maintain policies that lead to long-term development that helps all their citizens, not just the wealthy. Multinational corporations are regulated so that they may follow domestically mandated standards for pay and labor conditions, pay reasonable taxes, and by extension leave some profits within the country.

Specifically, what is meant by a developmental state is a government with sufficient organization and power to achieve its development goals. There must be a state with the ability to provide consistent economic guidance and rational and efficient organization, and the power to back up its long-range economic policies. All of this is important because the state must be able to resist external demands from outside multinational corporations to do things for their short-term gain, overcome internal resistance from strong groups trying to protect short-term narrow interests, and control infighting within the nation pertaining to who will most benefit from development projects.

3.6. Trickle-down theory

Trickle-down economics and the trickle-down theory are terms to refer to the idea that tax breaks or other economic benefits provided by government to businesses and the wealthy will benefit poorer members of society by improving the economy as a whole. The term is used to refer to

the fact that ‘money was all appropriated for the top in hopes that it would trickle down to the needy.’ .

3.7. Rostow’s stages of economic growth

Walt Rostow compared historical economic data of 15 countries mainly in West Europe in 1960 and suggested that all the people in the world had the potential to break the cycle of poverty and develop through five linear stages of economic growth.

Stage 1: Traditional society

Is characterized by a subsistence economy where most workers are engaged in agriculture with very limited technology, have limited savings, use age-old production methods and have limited technology or capital to process raw materials or develop industries and services. Example: Ethiopia, Somalia

Stage 2: Precondition for take off

For a country to move into this stage, it may be initiated internally by the desire of the people for a higher standard of living or externally by forces that intrude into the region or an injection of external help (aid). Extractive industries develop, agriculture tends to be more mechanized and there are some technological improvements and a growth of infrastructure. Development of transport system encourages trade. A single industry (usually textiles) begins to dominate. Investment is about 5 percent of the GDP. Generally, there is production increase to cause changes in attitudes bringing a change in individual and national goals.

Example: Kenya, Nigeria

Stage 3: Take off

Occurs when new technologies and capital are applied and production is greatly increased. Manufacturing and tertiary activities become increasingly important. There is widespread migration from rural areas to bustling urban agglomerations and numbers in agriculture decline. Infrastructure facilities such as transport networks are expanded and political power is transferred from the landed aristocracy to an urban-based structure. Growth may be limited to

one or two parts of a country (Growth poles) and to one or two industries (magnets) Investment increases to 10-15 percent of GDP. Example: Mexico, Argentina, Brazil, S. Korea.

Stage 4: The drive to maturity

This is a continuation of the processes of stage three. Urbanization progresses and manufacturing and services become widespread and increasingly important. The rural sector loses much of its population but those who remain use mechanized equipment and modern technology to produce large quantities. Economic growth becomes self-sustaining and spreads to all parts of the country and leads to an increase in the number and type of industries and more complex transport systems. Example: Russia, Most of Europe

Stage 5: High mass Consumption

There is rapid expansion of tertiary industries and welfare facilities Employment in service industries grows but declines in manufacturing; and industry shifts to the production of durable consumer goods. Personal incomes are high and abundant goods and services are readily available. Individuals no longer worry about securing the basic necessities of life and can devote more of their energies to non-economic pursuits. Example: USA, Japan, Canada, Australia and Germany.

Criticisms of Rostow's Model

- Although Rostow suggested that capital was needed to advance a country from its traditional society, the injected aid didn't help much the African and Asian countries and even led to huge national debts.
- No time frame can logically be specified for passage through any of the stages of the model and the short time predicted between when growth begins and when it becomes self-sustaining.
- Economists point out that growth is more complex than the model indicates and historical evidence suggests that the sequence is not universal.
- The model is Euro centric

- It is difficult to place a specific country among Rostos's stages and in large countries different regions may exhibit different levels of economic growth.

Exercise 4



Read the the following questions carefully. Respond to all the questions neatly and submit your answers to your tutor

1. List down as many development approaches as you know?
2. Describe the difference and similar between Developmental State Model and Trickle-Down Development Approach
3. Mention and explain each of the characteristics of Developmental State Model

UNIT IV: VULNERABILITY TO LIVELIHOODS/FOOD INSECURITY



Introduction

Vulnerability is a characteristic of an individual and/or groups of people who habit a given natural, social and economic space, within which they are differentiated according to their varying position in society into more or less vulnerable individuals and groups. It is a complex characteristic produced by a combination of factors derived especially (but not entirely) from class, gender, and ethnicity. Vulnerability concerns the complex of social, economic and political considerations in which peoples' everyday lives are embedded and that structure the choices and options they have in the face of environmental hazards. The most vulnerable are typically those with the fewest choices, those whose lives are constrained, for example, by discrimination, political powerlessness, physical disability, lack of education and employment, illness, the absence of legal rights, and other historically grounded practices of domination and marginalization. Resilience, on the other hand, is the ability to recover from natural and/or human-induced hazards such as famine. You will learn more about vulnerability and resilience in this chapter.



Unit learning outcomes

On successful completion of this unit, the students will be able to:

- define some terms like vulnerability, resilience and shocks
- clarify factors of vulnerability and resilience
- state the major causes of vulnerability to livelihoods and food insecurity risks
- describe briefly the vulnerability and food insecurity issues in Ethiopia
- illustrate briefly the spatio-temporal dynamics of vulnerability and resilience in Ethiopia

4.1. The concept of vulnerability and resilience

Activity 20

Dear Student! Try to note down briefly what you know so far regarding vulnerability and resilience and compare your notes against what you will read in the subsequent paragraphs.

Vulnerability refers to the extent an individual or a community or a country is exposed to certain risks like food insecurity, famine, or any natural or manmade hazards. Resilience, on the other hand, refers to the rate at which an individual, community or a country recovers from such setbacks. Both vulnerability and resilience are the function of varied interconnected factors like asset position, access to information, level of development, social capital and the level of the risks faced.

More specifically, vulnerability refers to the inability to withstand the effects of a hostile environment. In relation to hazards and disasters, vulnerability is a concept that links the relationship that people have with their environment to social forces and institutions and the cultural values that sustain and contest them. The concept of vulnerability expresses the multi-dimensionality of disasters by focusing attention on the totality of relationships in a given social situation which constitute a condition that, in combination with environmental forces, produces a disaster. It's also the extent to which changes could harm a system, or to which the community can be affected by the impact of a hazard.

The Vulnerability Context frames the external environment in which people exist. People's livelihoods and the wider availability of assets are fundamentally affected by critical trends as

well as by shocks and seasonality-over which they have limited or no control. The box below provides examples (this is not a complete list):

Trends	Shocks	Seasonality
<ul style="list-style-type: none"> • Population trends • Resource trends (including conflict) • National/international economic trends • Trends in governance (including politics) • Technological trends 	<ul style="list-style-type: none"> • Human health shocks • Natural shocks • Economic shocks • Conflict • Crop/livestock health shocks 	<ul style="list-style-type: none"> • of prices • of production • of health • of employment opportunities

The factors that make up the Vulnerability Context are important because they have a direct impact upon people's asset status and the options that are open to them in pursuit of beneficial livelihood outcomes.

- **Shocks** can destroy assets directly (in the case of floods, storms, civil conflict, etc.). They can also force people to abandon their home areas and dispose of assets (such as land) prematurely as part of coping strategies. Recent events have highlighted the impact that international economic shocks, including rapid changes in exchange rates and terms of trade, can have on the very poor.
- **Trends** may (or may not) be more benign, though they are more predictable. They have a particularly important influence on rates of return (economic or otherwise) to chosen livelihood strategies.
- **Seasonal shifts** in prices, employment opportunities and food availability are one of the greatest and most enduring sources of hardship for poor people in developing countries.

The Vulnerability Context is the part of the framework that lies furthest outside people's control. In the short to medium term and on an individual or small group basis there is little that can be done to alter it directly (though there are exceptions: for example, direct intervention to diffuse conflict). Most externally-driven change in the Vulnerability Context is a product of activity at the level of Transforming Structures and Processes (e.g. changes in policy). Another way of managing the Vulnerability Context is to help people to become more resilient and better able to

capitalize on its positive aspects. This is a core aim of the sustainable livelihoods approach. It can be achieved through supporting poor people to build up their assets. For example, increasing people's access to appropriate financial services-including insurance-is one way of reducing vulnerability. Another approach is to help ensure that critical institutions and organizations are responsive to the needs of the poor.

Livelihoods analysis does not have to be exhaustive to be effective. Rather than trying to develop a full understanding of all dimensions of the Vulnerability Context, the aim is to identify those trends, shocks and aspects of seasonality that are of particular importance to livelihoods. Effort can then be concentrated on understanding the impact of these factors and how negative aspects can be minimized. This requires a prior understanding of the nature of local livelihoods-what types of livelihood strategies are employed by local people and what factors constrain them from achieving their objectives. Such understanding cannot be gained without social analysis so that particular social groups and their relationship with factors within the Vulnerability Context can be identified. While it is important to narrow down the extent of analysis, it is also important to think broadly about factors within the Vulnerability Context that might affect local people, so that less-obvious issues are not neglected. For example, when thinking about seasonality, it is important to consider both immediate and more distant effects.

In a rural setting, it may be necessary to find answers to the following types of question:

- Which groups produce which crops?
- How important is each crop to the livelihoods of the groups that produce it?
- Is the revenue from a given crop used for a particular purpose. e.g. if it is controlled by women is it particularly important to child health or nutrition?
- What proportion of output is marketed?
- How do prices for different crops vary through the year?
- How predictable is seasonal price fluctuation?
- Are the price cycles of all crops correlated?
- What proportion of household food needs is met by own consumption and what portion is purchased?

- At what time of year is cash income most important (e.g. school fees might be collected one or more times during the year)? Does this coincide with the time at which cash is most available?
- Do people have access to appropriate financial service institutions to enable them to save for the future? Does access to these vary by social group?
- How long and intense is the ‘hungry period’?
- What effect do the ‘hungry period’ and other seasonal natural events (e.g. the advent of the rainy season) have on human health and the ability to labor?
- Has the length of the ‘hungry period’ been increasing or decreasing?
- How do income-earning opportunities vary throughout the year? Are they agricultural or non-farm?
- How does remittance income vary throughout the year (e.g. falling off at times when it is most needed because of food price rises)?

4.2. Factors exerting influence on livelihoods

Activity 21

Dear Student! What do you think are major factors exerting pressures on livelihoods? Try to note down briefly and resilience and compare your notes against what you will read in the subsequent paragraphs.

Discussions about causes of poor livelihoods (such as famine, food insecurity, etc) have always been controversial. Some groups of the academia argue that poverty is basically attributed to ecological degradation and adverse bioclimatic incidences. This is associated with views of Malthusian school of thought which strictly argues the natural resources depletion play critical roles in determining the food security status of a community. On the other side, there are people

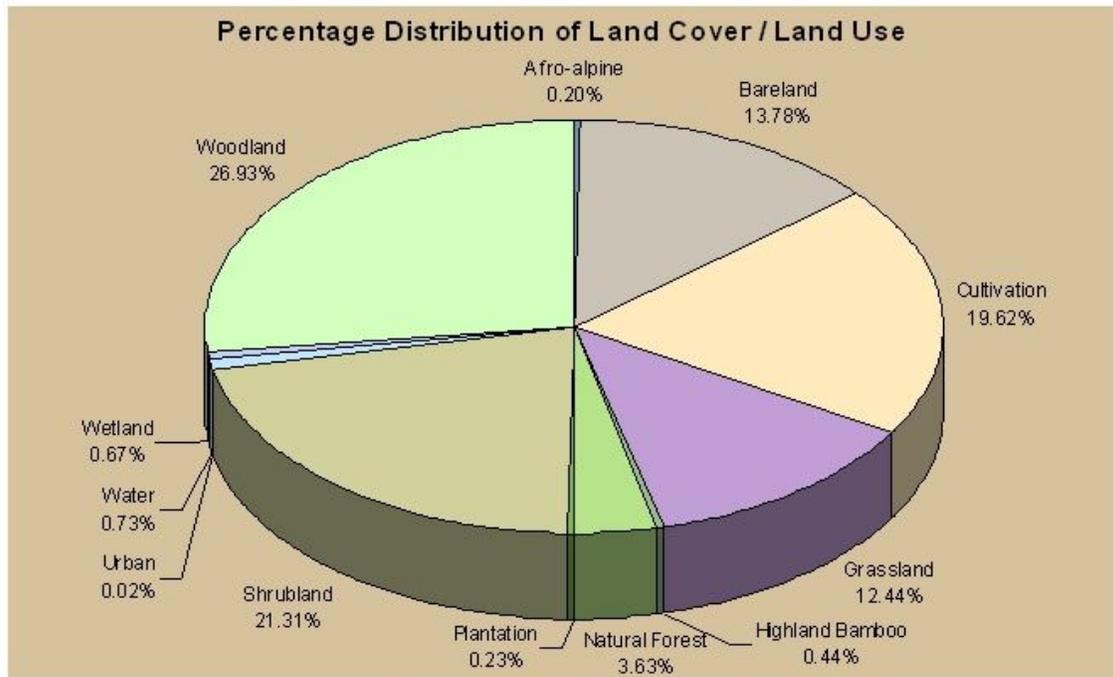
who argue that unfair distribution of resources is the critical cause of poor livelihoods in the world. It is the fervent belief of the compiler of this teaching material that the cause of poor livelihoods in the world is the combination of the adverse impacts of ecological degradation and bioclimatic factors (population pressure, soil loss, deforestation, erratic rainfall, and pest and disease infestation, etc) as well as human-induced attributes (poor policy framework, nepotism, inappropriate land tenure, rights to means of production, etc). The proponents of the second category argue that poverty is a preventable socio-economic crisis.

4.3. Vulnerability to livelihoods and food insecurity in Ethiopia: a glimpse

Activity 22

Dear Student! Do you think Ethiopia is vulnerable to food insecurity? What do you think the basic reasons are? Try to note down briefly and compare your notes against what you will read in the subsequent paragraphs.

Ethiopia is suitable for a wide variety of crops such as cereals, pulses oil seeds and vegetable. On average, cereals account for about 88% of the total food grain production in the country with pulses (8.5%) and oilseeds (2.9%) accounting for the remainder. Other major land-use types in the country are indicated in the figure below.



Ethiopia is characterized by abundant but shrinking diversity in biological resources: forest, woody and grassy lands, shrubs and varied wildlife. It is also renowned for its massive mountain ranges, high flat plateaus, deep gorges, river valleys, lowland plains, extensive wetlands and deserts. About 70,000,000 hectares (about 60 percent of the total area) of the country's land is agriculturally productive so long as appropriate input is available. About 45 percent of the country, where about 88% of the population live, is highland with altitudes of greater than 1500m. The geographical setting of the country is generally distinguished by the highlands in the central part circumscribed by the flat lowlands. Overpopulation, extensive croplands, and frequent incision by ravines and gullies characterize the highlands. The Great East African Rift System bisects the central highlands into northwestern and southeastern sections. The altitude of the country ranges from the highest peak of 4620m above mean sea level (amsl) at *Ras Dashen*, also *Ras Dejen*, in the northwest down to about 120m below mean seas level (bmsl) at Danakil/Afar Depression (in the northeast), one of the lowest and driest areas on earth.

Another conspicuous feature of Ethiopia is that it is the country where over 80 million people /50.46 percent male/ are grappling with a range of natural and manmade problems including

environmental degradation, erratic rainfalls, prevalence of malaria and HIV/AIDS, poor but improving governance, and widespread poverty. It is a country where about 84 percent of the people live in rural areas driving their livelihoods from plow-based peasant agriculture, a sector suffering from lack of essential inputs and erratic weather conditions. These, coupled with the existing rapid population growth rate (2.6 percent per annum) and low per capita GNI /280 USD/, has left the country one of the most precarious countries in the world.

Ethiopia is also characterized by severe environmental degradation of which the most notable ones are soil erosion, water depletion (such as the disappearance of *Haramaya* Lake, near the town of Harar), and shrinking of vegetated lands. Historical documents show that forest and woodlands covered over 40 percent of the total area of the country at the beginning of the 20th century. This figure is estimated to be only about 10 percent at present. FAO (1986/1999) estimates the country's annual deforestation rate at about 62,000 hectares attributed primarily to the increased demand for farmland, fuelwood and settlement sites. At any rate this has resulted in severe soil degradation (about 2 billion tons per year), alteration of hydrologic regimes, disturbance of local and/or regional climates, loss of biodiversity, and expansion of desert ecological conditions.

Recurrent droughts and erratic rainfall are also common in the *Horn* of Africa in general and Ethiopia in particular. This area has a prolonged and frequent history of drought climatic conditions and drought-related enormously distressing famines. Surprisingly, 'one every three or four years is a drought year' in Ethiopia, a country also affected by high climatic vulnerability.

These relentless agroclimatic and environmental disasters have been multifaceted in many ways. Millions of Ethiopians have died of series of hunger or hunger-caused diseases or physical weaknesses besides other food shortfall induced biological miseries like stunting, wasting and underweight. Others have been forced to abandon their original residences and resettle somewhere either in urban areas or other rural parts of the country where they hoped to be better-off in landholdings, soil fertility, rainfall distribution, forest cover and water supply. Such

people, on the whole, abandon their home-villages and resettle on other areas in group (large or small), individual or household bases.

Consequently, domestic food production has failed to meet national requirements, and the number of food insecure people has been on the increase particularly since mid-1970s. For the last three and half decades (1974-2009), for instance, the livelihoods of some 4.71 million people had been affected per annum mainly by drought-induced food shortage calamities. As a result, Ethiopia has become increasingly dependent on international food aid with an average food scarcity of over 637, 000 metric tons per annum from 1974 to 2009.

In general, as discussed in this section, the causes of long-lasting livelihoods crises in Ethiopia have been a complex interaction between multiple adverse factors. Agricultural production failure due to bad bioclimatic and ecological factors, prolonged civil wars, policy mismanagement, low purchasing power, inappropriate market linkage, unfair distribution of food to the disadvantaged group of people, political nepotism and lack of good governance have been critical factors for the lengthy and severe food crises in Ethiopian history.

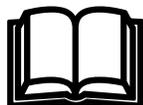
Exercise 5



Read the the following questions carefully. Respond to all the questions neatly and submit your answers to your tutor

1. What are the major causes of food insecurity in Ethiopia?
2. Differentiate vulnerability and resilience briefly
3. Explain the spatial relationship between topography and food insecurity in Ethiopia
4. Discuss the land-use/land-cover situation in Ethiopia
5. What are the major causes of vulnerability?
6. Explain how to enhance the livelihoods resilience of a household
7. What questions should be asked and resolved in order to assess the vulnerability context in rural settings?

UNIT V: DETERMINANTS OF LIVELIHOODS AND FOOD INSECURITY



Introduction

The status of livelihoods and food security is determined various interlocked biophysical, socio-economic and policy-induced factors. Climatic profiles, topography, soil fertility, population size and growth rates, availability of natural resources, etc determine the livelihoods and food security status of the people. Natural hazards like earthquakes, tsunami, cyclone, landslide and volcanic eruptions also cause poor livelihoods and food insecurity. Similarly, air pollution, soil loss, soil contamination/pollution, deforestation and water pollution causes poor livelihoods and food insecurity. Social unrest and political instability can also result in deteriorated livelihoods. Hence, this chapter is devoted to present these determinants of livelihoods and food security in detail.



Unit learning outcomes

On successful completion of this unit, the students will be able to:

- state the major determinants of livelihoods and food security
- define some technical terms like disaster, risk and hazard
- describe briefly the ecological and human-induced factors of food insecurity
- explain how hazards/disaster adversely affect livelihoods and food security
- illustrate the determinants of livelihoods and food security in Ethiopia
- explain how environmental degradation links to poor livelihoods and causes food insecurity

5.1. Ecological/Agro-climatic determinants of livelihoods & food insecurity

Activity 23

Dear Student! What are the agro-ecological determinants of livelihoods and food security? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

For the 60% of poor populations who are found in fragile ecosystems and mainly remote and ecologically vulnerable rural areas, the challenge of environmentally sustainable poverty alleviation is immense. It has been estimated that 80% of poor people in Latin America live in such areas, 60% in Africa and 50% in Asia. Reliance on the currently prevailing patterns of growth will postpone the resolution of poverty in marginal areas, with severe implications not only for the people affected but also for the environment. The immediate-to-medium-term prospects for the rural poor to abandon these areas for other sectors of the economy, as was the case in Europe in the last century, are not promising. As a result, fragile ecosystems are rapidly becoming ghettos of poverty and environmental degradation.

Activity 24

What do you think is the reason for the reason that fragile ecosystems are rapidly becoming ghettos of poverty and environmental degradation? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

The need for urgent action can be recognized in relation to the following characteristics of these regions:

- a) They constitute a significant part of the world's land resources. Forty percent of the earth's land surface is considered dryland, of which approximately 70% is already degraded or subject to heavy degradation. On the other hand, hilly and mountainous regions cover about 21% of the earth land mass and, although not so extensive as dry lands, they exert a far-reaching influence on other areas, primarily through watershed functions.
- b) The role of both ecosystems in terms of human habitat is also significant: approximately 900 million of the world's population is subsisting in dry zones. Although only about 10% of the world population lives in mountain areas, a much larger percentage (about 40%) occupies the watersheds below. It is safe to assume that the future of mountain ecosystems affects the life of half of the world's population. From the Andes to the Himalayas and from South East Asia to East and Central Africa a serious ecological deterioration caused by overgrazing, deforestation and excessive cultivation threatens the livelihood of these populations.
- c) Mountains are important sources of water, energy, minerals, agricultural products and a major reserve for the world's biodiversity. Similarly, dry zones are rich in biodiversity, hosting many endangered species. Moreover, crops, grasses, trees, and livestock species, that form the core of survival in drought prone regions, exist in these regions only.
- d) A high proportion of the absolute poor in ecologically fragile areas are indigenous peoples, estimated at some 300 million worldwide. They depend on renewable resources to maintain their well-being. This has led to the development of livelihood systems which are well-adapted to the harsh conditions in which they lived. Their holistic, traditional knowledge of their natural resources and environment constitutes a rich human heritage. However, their traditional ways of life are now being threatened, disturbing the delicate balance of natural resource use. Nevertheless, viable technology and institutional arrangements for resource conservation in these areas could be built upon indigenous knowledge; and similarly effective disaster prevention policies can benefit from coping strategies developed by the local population.

- e) Rural women play a key role in on- and off-farm activities in the developing countries. This is particularly true in the case of the ecologically fragile areas. With the growing male out-migration from marginal areas, the number of women headed households in these areas is increasing. Women are becoming more and more responsible for the day to day survival of the family. Women tend to be more vulnerable than men to the effects of environmental degradation because they are often involved in harvesting common property resources such as wood and water. Since women usually make a greater contribution to household food security than men, a decline in women's access to resources may have a significant impact on household consumption. Environmental degradation implies further burdens and responsibilities which are not compensated for by increased decision-making power.
- f) Degradation of land and loss of its vegetative cover also have consequences at the global level, primarily because of its influence on carbon exchange, but also in terms of loss of biodiversity. The large amount of carbon stored in the vegetation of the dry zones, for example, averaging about 30 tons per hectare, decreases when the vegetation is depleted or disappears. Carbon-rich soils, frequently found in dry zones, store a substantial amount of this element (nearly half the total quantity of carbon is stored in the organic matter in the soil, much more than is found in the world's vegetation). The destruction of these soils has a very powerful effect on the carbon cycle and boosts the greenhouse effect as a result of the release of carbon.

Over the past two decades, environmental degradation, including land degradation has continued to worsen exacerbating further **poverty and food insecurity**. Conversely, awareness of the importance of the environment and its conservation has increased. There has been a transformation in people's perception of the poverty problem in developing countries. If one accepts that hard core rural poverty is increasingly a phenomenon associated with marginal lands, then new strategies are required that integrate poverty alleviation and environmental management. Until recently, the international community and national governments have tended not to appreciate the need for integrated rural poverty alleviation and environmental management programs in marginal areas. There were a number of promising initiatives in this field, usually

undertaken by NGOs and community-based organizations, but they were usually small and much localized. At the same time, in many regions, rural people's perceptions of their environment and the priority they give to a better relationship with it have changed. Increasingly, rural people are realizing that:

- a. the fragile environment on which they depend for their survival is being neglected or over-exploited, and it is now necessary to rehabilitate it and manage it sustainably; and
- b. the environment belongs primarily to them, and they must take the responsibility for the land and organize themselves in groups, cooperatives, village development associations and other local association to defend it.

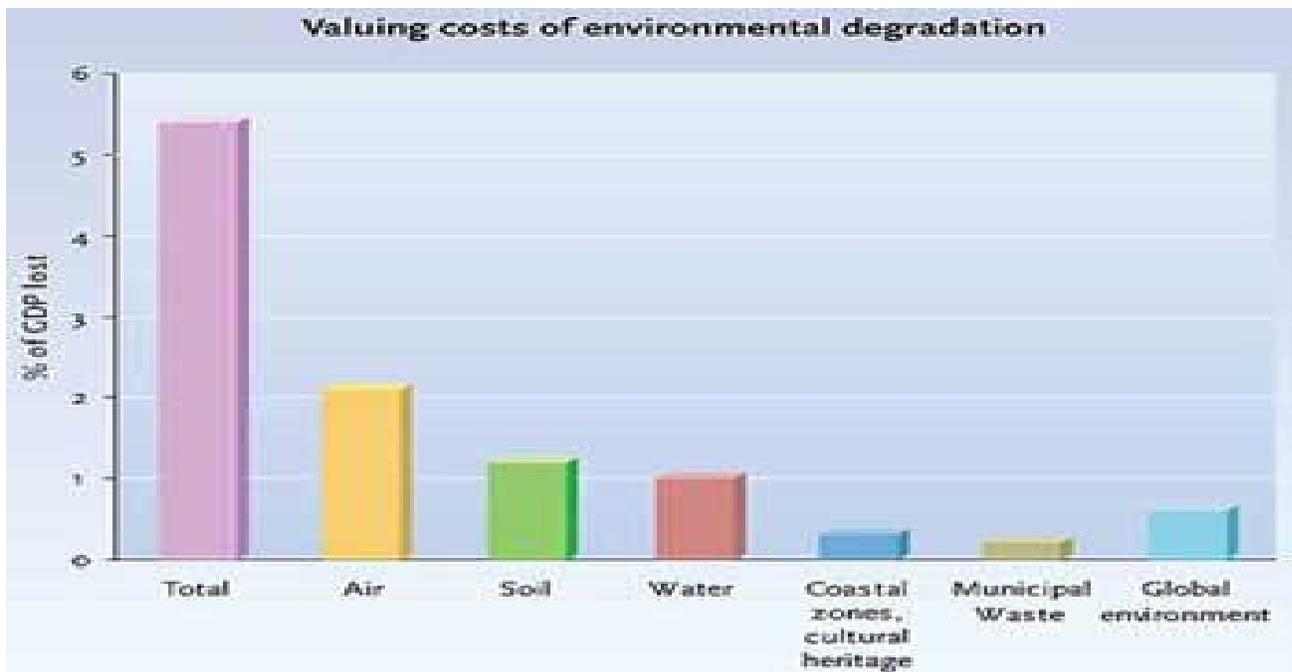
UNCED's Agenda 21, the global action program for sustainable development, is perhaps the first expression of international commitment to addressing **the poverty-environment nexus**. Chapter 3 of Agenda 21 on '*combating poverty*' called for specific long-term strategies that integrate poverty eradication and sustainable management of the environment. Agenda 21 devoted two chapters to the special needs of fragile ecosystems, namely Chapter 12 on '*Combating Desertification and Drought*' and Chapter 13 on '*Sustainable Mountain Development*'. In the follow-up to UNCED, promising initiatives have emerged for these thematic areas. For drylands, the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (CCD) provides a framework for concrete action at the local level. For mountainous areas, efforts are currently under way to develop the basis for an action plan for sustainable mountain development, known as the '*Mountain Agenda*'.

Activity 25

Dear students! What is Agenda 21? Try to note down your brief answers

5.2. Environmental degradation vs livelihoods and food security

Environmental degradation is the deterioration of the environment through depletion of resources such as air, vegetation, water and soil; the destruction of ecosystems and the extinction of wildlife. It is defined as any change or disturbance to the environment perceived to be deleterious or undesirable. Environmental degradation is one of the Ten Threats officially cautioned by the High Level Threat Panel of the United Nations. The United Nations International Strategy for Disaster Reduction defines environmental degradation as ‘The reduction of the capacity of the environment to meet social and ecological objectives, and needs’. Environmental degradation is of many types. When natural habitats are destroyed or natural resources are depleted, environment is degraded.



Environmental Change and Human Health, a special section of World Resources 1998-99 in this report describes how preventable illnesses and premature deaths are still occurring in very large numbers. If vast improvements are made in human health, millions of people will be living longer, healthier lives than ever before. In these poorest regions of the world an estimated 11 million children, or about one in five, will not live to see their fifth birthday, primarily because of environment-related diseases. Child mortality is larger than the combined populations of Norway

and Switzerland, and mostly due to malaria, acute respiratory infections or diarrhea- illnesses that are largely preventable.

5.2.1. Water deterioration

One major component of environmental degradation is the depletion of the resource of fresh water on Earth. Approximately only 2.5% of all of the water on Earth is fresh water, with the rest being salt water. 69% of the fresh water is frozen in ice caps located on Antarctica and Greenland, so only 30% of the 2.5% of fresh water is available for consumption. Fresh water is an exceptionally important resource, since life on Earth is ultimately dependent on it. Water transports nutrients and chemicals within the biosphere to all forms of life, sustains both plants and animals, and molds the surface of the Earth with transportation and deposition of materials.

It is estimated that one in three people over the entire globe are already facing water shortages, almost one-fifth of the world's population live in areas of physical water scarcity, and almost one quarter of the world's population live in a developing country that lacks the necessary infrastructure to use water from available rivers and aquifers. Water scarcity is an increasing problem due to many foreseen issues in the future, including population growth, increased urbanization, higher standards of living, and climate change.

5.2.2. Climate change and atmospheric temperature

Climate change affects the Earth's water supply in a large number of ways. It is predicted that the mean global temperature will rise in the coming years due to a number of forces affecting the climate, the amount of atmospheric CO₂ will rise, and both of these will influence water resources; evaporation depends strongly on temperature and moisture availability, which can ultimately affect the amount of water available to replenish groundwater supplies.

Transpiration from plants can be affected by a rise in atmospheric CO₂, which can decrease their use of water, but can also raise their use of water from possible increases of leaf area. Temperature increase can decrease the length of the snow season in the winter and increase the intensity of snowmelt in warmer seasons, leading to peak runoff of snowmelt earlier in the

season, affecting soil moisture, flood and drought risks, and storage capacities depending on the area.

Warmer winter temperatures cause a decrease in snowpack, which can result in diminished water resources during the summer. This is especially important at mid-latitudes and in mountain regions that depend on glacial runoff to replenish their river systems and groundwater supplies, making these areas increasingly vulnerable to water shortages over time; an increase in temperature will initially result in a rapid rise in water melting from glaciers in the summer, followed by a retreat in glaciers and a decrease in the melt and consequently the water supply every year as the size of these glaciers get smaller and smaller.

Thermal expansion of water and increased melting of oceanic glaciers from an increase in temperature gives way to a rise in sea level, which can affect the fresh water supply of coastal areas as well; as river mouths and deltas with higher salinity get pushed further inland, an intrusion of saltwater results in an increase of salinity in reservoirs and aquifers. Sea-level rise may also consequently be caused by a depletion of groundwater, as climate change can affect the hydrologic cycle in a number of ways. Uneven distributions of increased temperatures and increased precipitation around the globe results in water surpluses and deficits, but a global decrease in groundwater suggests a rise in sea level, even after meltwater and thermal expansion were accounted for, which can provide a positive feedback to the problems sea-level rise causes to fresh-water supply.

A rise in air temperature results in a rise in water temperature, which is also very significant in water degradation, as the water would become more susceptible to bacterial growth. An increase in water temperature can also affect ecosystems greatly because of a species' sensitivity to temperature, and also by inducing changes in a body of water's self-purification system from decreased amounts of dissolved oxygen in the water due to rises in temperature.

5.2.3. Climate change and precipitation

A rise in global temperatures is also predicted to correlate with an increase in global precipitation, but because of increased runoff, floods, increased rates of soil erosion, and mass movement of land, a decline in water quality is probable, while water will carry more nutrients, it will also carry more contaminants. While most of the attention about climate change is directed towards global warming and greenhouse effect, some of the most severe effects of climate change are likely to be from changes in precipitation, evapotranspiration, runoff, and soil moisture. It is generally expected that, on average, global precipitation will increase, with some areas receiving increases and some decreases.

Climate models show that while some regions should expect an increase in precipitation, such as in the tropics and higher latitudes, other areas are expected to see a decrease, such as in the subtropics; this will ultimately cause a latitudinal variation in water distribution. The areas receiving more precipitation are also expected to receive this increase during their winter and actually become drier during their summer, creating even more of a variation of precipitation distribution. Naturally, the distribution of precipitation across the planet is very uneven, causing constant variations in water availability in respective locations.

Changes in precipitation affect the timing and magnitude of floods and droughts, shift runoff processes, and alter groundwater recharge rates. Vegetation patterns and growth rates will be directly affected by shifts in precipitation amount and distribution, which will in turn affect agriculture as well as natural ecosystems. Decreased precipitation will deprive areas of water, causing water tables to fall and reservoirs and wetlands, rivers, and lakes to empty, and possibly an increase in evaporation and evapotranspiration, depending on the accompanied rise in temperature. Groundwater reserves will be depleted, and the remaining water has a greater chance of being of poor quality from saline or contaminants on the land surface.

5.2.4. Agriculture and environmental degradation

Agriculture is dependent on available soil moisture, which is directly affected by climate dynamics, with precipitation being the input in this system and various processes being the

output, such as evapotranspiration, surface runoff, drainage, and percolation into groundwater. Changes in climate, especially the changes in precipitation and evapotranspiration predicted by climate models, will directly affect soil moisture, surface runoff, and groundwater recharge.

In areas with decreasing precipitation as predicted by the climate models, soil moisture may be substantially reduced. With this in mind, agriculture in most areas needs irrigation already, which depletes fresh water supplies both by the physical use of the water and the degradation agriculture causes to the water. Irrigation increases salt and nutrient content in areas that wouldn't normally be affected, and damages streams and rivers from damming and removal of water. Fertilizer enters both human and livestock waste streams that eventually enter groundwater, while nitrogen, phosphorus, and other chemicals from fertilizer can acidify both soils and water. Certain agricultural demands may increase more than others with an increasingly wealthier global population, and meat is one commodity expected to double global food demand by 2050, which directly affects the global supply of fresh water. Cows need water to drink, more if the temperature is high and humidity is low, and more if the production system the cow is in is extensive, since finding food takes more effort. Water is needed in processing of the meat, and also in the production of feed for the livestock. Manure can contaminate bodies of freshwater, and slaughterhouses, depending on how well they are managed, contribute waste such as blood, fat, hair, and other bodily contents to supplies of fresh water.

The transfer of water from agricultural to urban and suburban use raises concerns about agricultural sustainability, rural socioeconomic decline, food insecurity, an increased carbon footprint from imported food, and decreased foreign trade balance. The depletion of fresh water, as applied to more specific and populated areas, increases fresh water scarcity among the population and also makes populations susceptible to economic, social, and political conflict in a number of ways; rising sea levels forces migration from coastal areas to other areas farther inland, pushing populations closer together breaching borders and other geographical patterns, and agricultural surpluses and deficits from the availability of water induce trade problems and economies of certain areas. Climate change is an important cause of involuntary migration and forced displacement worldwide.

Activity 26

Mention the major types of environmental degradation and explain how each of them determines livelihoods and food security

5.3. Disaster risks and livelihoods/food security

Activity 27

What is a disaster? What is the difference between disaster and hazard? Mention as many natural disasters you know. What about human-induced disasters? How disaster and hazard determine livelihoods and food security? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

A disaster is a natural or man-made (or technological) hazard resulting in an event of substantial extent causing significant physical damage or destruction, loss of livelihoods, loss of life, or drastic change to the environment. A disaster can be defined as any tragic event stemming from events such as earthquakes, floods, catastrophic accidents, fires, or explosions. It is a phenomenon that can cause damage to life and property and destroy the economic, social and cultural life of people.

In contemporary academia, disasters are seen as the consequence of inappropriately managed risk. These risks are the product of a combination of both hazard/s and vulnerability. Hazards that strike in areas with low vulnerability will never become disasters, as is the case in uninhabited regions.

Developing countries suffer the greatest costs when a disaster hits- more than 95 percent of all deaths caused by disasters occur in developing countries, and losses due to natural disasters are 20 times greater (as a percentage of GDP) in developing countries than in industrialized countries.

Researchers have been studying disasters for more than a century, and for more than forty years disaster research. The studies reflect a common opinion when they argue that all disasters can be seen as being human-made, their reasoning being that human actions before the strike of the hazard can prevent it developing into a disaster. All disasters are hence the result of human failure to introduce appropriate disaster management measures. Hazards are routinely divided into natural or human-made, although complex disasters, where there is no single root cause, are more common in developing countries. A specific disaster may spawn a secondary disaster that increases the impact. A classic example is an earthquake that causes a tsunami, resulting in coastal flooding.

5.3.1. Natural disasters

A natural disaster is a consequence when a natural hazard affects humans and/or the built environment. Human vulnerability and lack of appropriate emergency management leads to financial, environmental, or human impact. The resulting loss depends on the capacity of the population to support or resist the disaster: their resilience. This understanding is concentrated in the formulation: ‘disasters occur when hazards meet vulnerability’. A natural hazard will hence never result in a natural disaster in areas without vulnerability.

Various phenomena like earthquakes, landslides, volcanic eruptions, floods and cyclones are all natural hazards that kill thousands of people and destroy billions of dollars of habitat and

property each year. However, natural hazards can strike in unpopulated areas and never develop into disasters. However, the rapid growth of the world's population and its increased concentration often in hazardous environments has escalated both the frequency and severity of natural disasters. With the tropical climate and unstable land forms, coupled with deforestation, unplanned growth proliferation, non-engineered constructions which make the disaster-prone areas more vulnerable, tardy communication, poor or no budgetary allocation for disaster prevention, developing countries suffer more or less chronically by natural disasters. Asia tops the list of casualties due to natural disasters.

5.3.2. Man-made disasters

Man-made disasters are the consequence of technological or human hazards. Examples include stampedes, fires, transport accidents, industrial accidents, oil spills and nuclear explosions/radiation. War and deliberate attacks may also be put in this category. As with natural hazards, man-made hazards are events that have not happened, for instance terrorism. Man-made disasters are examples of specific cases where man-made hazards have become reality in an event.

The impacts of natural hazards continue to increase around the world; the frequency of recorded disasters affecting communities has risen significantly over the past century. Hundreds of thousands of people are killed and millions injured, affected or displaced each year because of disasters, and the amount of property damage has been doubling every seven years on average over the past 40 years. Although earthquakes and tsunamis can have horrific impacts, most disaster losses stem from climate-related hazards such as hurricanes, cyclones, other major storms, floods, landslides, wildfires, heat waves and droughts. Current evidence demonstrates that changes in the global climate will continue to affect the frequency and severity of climate-related hazards. These disasters, no doubt, damage the livelihoods of the people.

Unfortunately, there is a great shortfall in current research on how science is used to shape social and political decision-making in the context of hazards and disasters. Addressing this problem

requires an approach that integrates research and policy-making across all hazards, disciplines and geographic regions.

At this juncture, one may ask a question: 'What is the difference and similarity b/n disaster & hazard? How they caused livelihoods & food insecurity? A hazard is a situation that poses a level of threat to life, health, property, or environment. Most hazards are dormant or potential, with only a theoretical risk of harm; however, once a hazard becomes active, it can create an emergency situation. A hazard does not exist when it is not happening. A hazardous situation that has come to pass is called an incident. Hazard and vulnerability interact together to create risk. For hazards in the context of risk assessment, see Hazard (risk)

Hazards are sometimes classified into three modes:

Dormant: The situation has the potential to be hazardous, but no people, property, or environment is currently affected by this. For instance, a hillside may be unstable, with the potential for a landslide, but there is nothing below or on the hillside that could be affected.

Armed: People, property, or environment is in potential harm's way

Active: A harmful incident involving the hazard has actually occurred. Often this is referred to not as an 'active hazard' but as an accident, emergency, incident, or disaster.

Hazards are generally of four types, physical hazards, chemical hazards, biological hazards and allergenic hazard.

By its nature, a hazard involves something that could potentially be harmful to a person's life, health, property, or the environment. One key concept in identifying a hazard is the presence of stored energy that, when released, can cause damage. Stored energy can occur in many forms: chemical, mechanical, thermal, radioactive, electrical, etc. Another class of hazard does not involve release of stored energy; rather it involves the presence of hazardous situations. Examples include confined or limited egress spaces, oxygen-depleted atmospheres, awkward positions, repetitive motions, low-hanging or protruding objects, etc.

There are several methods of classifying a hazard, but most systems use some variation on the factors of likelihood of the hazard turning into an incident and the "seriousness" of the incident if it were to occur. (This discussion moved away from hazard to a discussion of risk.)

A common method is to score both likelihood and seriousness on a numerical scale (with the most likely and most serious scoring highest) and multiplying one by the other in order to reach a comparative score.

$\text{Risk} = \text{Hazard} \times \text{Vulnerability} (-) \text{Capacity}$

This score can then be used to identify which hazards may need to be mitigated. A low score on likelihood of occurrence may mean that the hazard is dormant, whereas a high score would indicate that it may be an 'active' hazard.

An important component of 'seriousness if incident occurred' is 'serious to whom?' Different populations may be affected differently by accidents. For example, an explosion will have widely differing effects on different populations depending on the distance from the explosion. These effects can range from death from overpressure or shrapnel to inhalation of noxious gases (for people downwind) to being exposed to a loud noise.

There are many causes, but they can broadly be classified as below. See the linked articles for comprehensive lists of each type of hazard.

- Natural hazards include anything that is caused by a natural process, and can include obvious hazards such as volcanoes to smaller scale hazards such as loose rocks on a hillside.
- Man-made hazards are created by humans, whether long-term (such as global warming) or immediate (like the hazards present at a construction site). These include activity related hazards (such as flying) where cessation of the activity will negate the risk.
- Deadly force or retribution is that hazard involving any protective and responsive-ready threat of harm or punishment that becomes active in the event of a breach of security, or

violation of a boundary or barrier (physical, legal, moral) intended to prevent unauthorized or unsafe access or entry or exposure to a situation, to something, or to someone. This includes the consequences that follow trespass, breach of covenant, outrage or moral panic.

Generally, the areas of highest weather-related risk correspond to areas where high concentrations of vulnerable people are exposed to severe and frequent hazards. The risk model highlights that flood mortality risk is highest in rural areas with a dense and rapidly growing population in countries with weak governance; cyclone mortality risk is highest in isolated rural areas with low GDP per capita; and landslide risk is highest in areas with low GDP per capita. For all weather-related hazards, countries with low GDP and weak governance tend to have drastically higher mortality risks than wealthier countries with stronger governance.

Between 1970 and 2010, the world's population increased by 87 percent (from 3.7 billion to 6.9 billion). In the same period, the average numbers exposed to flooding every year increased by 114 percent (from 32.5 to 69.4 million annually). Relatively speaking, ever more people are living in flood plains, suggesting that the economic advantages of living in such an environment must outweigh the perceived risks of flooding. Populations in cyclone-prone areas are also growing, highlighting the attractiveness of tropical coastlines for tourism as well as for economic and urban development in general. Global physical exposure to tropical cyclones almost tripled (increasing by 192 percent) between 1970 and 2010.

Low- and lower-middle-income countries not only have the largest proportion of their population exposed to floods, but their exposure is also growing faster than in middle-income countries. More than 90 percent of the global population exposed to floods live in South Asia, East Asia and the Pacific, but exposure is growing most rapidly in sub-Saharan Africa. In contrast, whereas in eastern and south-eastern Europe and Central Asia it is stable, reflecting a broader trend of demographic changes.

5.4. Causes of food insecurity in Ethiopia

Activity 28

Dear student! What do you think are the major causes of food insecurity in Ethiopia? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

Discussions about causes of poor livelihoods and food insecurity in Ethiopia have always been controversial. Some groups of the academia argue that famines in Ethiopia are basically attributed to ecological degradation and adverse bioclimatic incidences. This is associated with views of Malthusian school of thought which strictly argues the natural resources depletion play critical roles in determining the food security status of a community. On the other side, there are people who argue that unfair distribution of food is the critical cause of famine in the country. It is the fervent belief of the writer of this material that the cause of poor livelihoods and food insecurity in Ethiopia is the combination of the adverse impacts of ecological degradation and bioclimatic factors (population pressure, soil loss, deforestation, erratic rainfall, and pest and disease infestation, etc) as well as human-induced attributes (poor policy framework, nepotism, inappropriate land tenure, rights to means of production, etc). The proponents of the second category argue that poor livelihoods and food insecurity are preventable. On the other hand, the general environmental and socio-economic picture of Ethiopia portrays the challenges and opportunities related to the viewpoints of the two groups.



Exercise 6

Read the the following questions carefully. Respond to all the questions neatly and submit your answers to your tutor

1. What are the major determinants of livelihoods and food security
2. Differentiate disaster, risk and hazard
3. Describe briefly the ecological and human-induced factors of food insecurity
4. Explain how hazards/disaster adversely affect livelihoods and food security
5. Illustrate the determinants of livelihoods and food security in Ethiopia
6. Explain how environmental degradation links to poor livelihoods and causes food insecurity

UNIT VI: TECHNIQUES OF FOOD IN/SECURITY ANALYSIS



Introduction

Investigating food security status of a community and/or individual household can be a very complex analysis that needs to be treated with a combination of different cross-sectional and longitudinal techniques. This is mainly because, issues related to food security is characterized by multifaceted and intertwined socioeconomic and environmental circumstances. In light of this, this chapter attempts to highlight detailed accounts of techniques of food security analysis. Some of the techniques to be addressed in this chapter are Household Food Balance Model (HFBM), Household Food Insecurity Access Scale (HFIAS), Household Hunger Scale (HHS), Coping Strategy Index (CSI), Food Consumption Score (FCS) and Household Dietary Diversity Score (HDDS).



Unit Learning Outcomes

On successful completion of this unit, the students will be able to:

- explain how food security can be analyzed
- identify different techniques of food security analysis
- apply food security techniques

6.1. Household Food Balance Model (HFBM)

Activity 29

What do you know about HFBM? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

This is a simple equation originally adapted by Degefa (1996) from FAO Regional Food Balance Model and thenceforth used by different researchers in Ethiopia. HFBM is employed to compute the net quantity of per capita food. The net available food per household, as reported from household recall, is converted into dietary energy equivalent using EHNRI/FAO (1998)'s Food Composition Table for Use in case of Ethiopia. Then, the medically recommended level of calorie per adult equivalent (2100kcal/day/person for Ethiopia) is used as a cut-off point for food insecure and food secure households or individuals. The following simple equation of HFBM is modified and used by Messay (2011) for household food security analysis is:

$$\text{NGA} = (\text{GP} + \text{GB} + \text{FA} + \text{GG} + \text{CC} + \text{MP} + \text{DP}) - (\text{HL} + \text{GU} + \text{GS} + \text{GV})$$

Where,

NGA = Net grain available (quintal/household/year)

GP = Total grain production (quintal/household/year)

GB = Total grain bought (quintal/household/year)

FA = Quantity of food aid obtained (quintal/household/year)

GG = Total grain obtained through gift or remittance (quintal/household/year)

MP = Meat, meat based products and poultry (kilogram/household/year)

DP = Dairy and dairy based products ((kilogram/household/year)

HL = Post harvest losses due to grain pests, disasters, thievery, etc (quintal/household/year)

GU = Quantity of grain reserved for seed (quintal/household/year)

GS = Amount of grain sold (quintal/household/year)

GV = Grain given to others within a year (quintal/household/year)

6.2. Household Food Insecurity Access Scale (HFIAS)

Activity 30

What do you know about HFIAS? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

The Food and Nutrition Technical Assistance Project (FANTA) developed the HFIAS in 2006 with an aim to provide a valid tool for use in a developing country context that would be capable of measuring food insecurity in a comparable way, i.e., with cross-cultural equivalency. The tool consists of nine occurrence questions and nine frequency-of-occurrence questions. The HFIAS occurrence questions ask whether or not a specific condition associated with the experience of food insecurity ever occurred during the previous 4 weeks (30 days)

HFIAS Generic Questions

No.	Question
	For each of the following questions, consider what has happened in the past 30 days. Please answer whether this happened never, rarely (once or twice), sometimes (3-10 times), or often (more than 10 times) in the past 30 days?
1.	Did you worry that your household would not have enough food?
2.	Were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?
3.	Did you or any household member eat just a few kinds of food day after day due to a lack of resources?
4.	Did you or any household member eat food that you preferred not to eat because a lack of resources to obtain other types of food?
5.	Did you or any household member eat a smaller meal than you felt you needed because there was not enough food?
6.	Did you or any other household member eat fewer meals in a day because there was not enough food?
7.	Was there ever no food at all in your household because there were not resources to get more?
8.	Did you or any household member go to sleep at night hungry because there was not enough food?
9.	Did you or any household member go a whole day without eating anything because there was not enough food?

Activity 31

Dear student! Identify which generic questions are applicable in your area? Explain why

HFIAS measurement tool

For each of the following questions, consider what has happened in the past 30 days. Please answer whether this happened never, rarely (once or twice), sometimes (3-10 times), or often (more than 10 times) in the past 30 days?			
No	QUESTION	RESPONSE OPTIONS	CODE
1.	Did you worry that your household would not have enough food?	0 = Never 1 = Rarely (once or twice in the past 30 days) 2 = Sometimes (three to ten times in the past 30 days) 3 = Often (more than 10 times in the past 30 days) <input type="text"/>
2.	Were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	0 = Never 1 = Rarely (once or twice in the past 30 days) 2 = Sometimes (three to ten times in the past 30 days) 3 = Often (more than 10 times in the past 30 days) <input type="text"/>
3.	Did you or any household member eat just a few kinds of food day after day due to a lack of resources?	0 = Never 1 = Rarely (once or twice in the past 30 days) 2 = Sometimes (three to ten times in the past 30 days) 3 = Often (more than 10 times in the past 30 days) <input type="text"/>
4.	Did you or any household member eat food that you preferred not to eat because of a lack of resources to obtain other types of food?	0 = Never 1 = Rarely (once or twice in the past 30 days) 2 = Sometimes (three to ten times in the past 30 days) 3 = Often (more than 10 times in the past 30 days) <input type="text"/>

This should go long as 9.

The HFIAP indicator categorizes households into **four levels of household food insecurity (access)**: (1) food secure, and (2) mild, (3) moderately and (4) severely food insecure. Households are categorized as increasingly food insecure as they respond affirmatively to more severe conditions and/or experience those conditions more frequently.

A **food secure** household experiences none of the food insecurity (access) conditions, or just experiences worry, but rarely. A **mildly food insecure** (access) household worries about not having enough food sometimes or often, and/or is unable to eat preferred foods, and/or eats a monotonous diet or less-preferred foods, but only rarely. But it does not cut back on quantity nor experience any of three most severe conditions (going a whole day without eating, going to bed hungry, or running out of food). A **moderately food insecure** household sacrifices quality more frequently, by eating a monotonous diet or less-preferred foods sometimes or often, and/or has

started to cut back on quantity by reducing size of meals or number of meals, rarely or sometimes. But it does not experience any of the three most severe conditions. A **severely food insecure household** has graduated to cutting back on meal size or number of meals often, and/or experiences any of the three most severe conditions (going a whole day without eating, going to bed hungry, or running out of food), even as infrequently as rarely. In other words, any household that experiences one of these three conditions even once in the last 30 days is considered severely food insecure.

Note: The full document of HFIAS is available online as Coates, Swindale & Bilinsky (2006), Household Food Insecurity Access Scale for Measurement of Food Access: Indicator Guide

6.3. Household Hunger Scale (HHS)

Activity 32

Dear student! Have you ever heard of HHS? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

Household Hunger Scale (HHS) is a new and simple indicator to measure household hunger in food-insecure areas. The HHS is different from other household food insecurity indicators in that it has been specifically developed and validated for cross-cultural use. This means that the HHS produces valid and comparable results across cultures and settings so that the status of different population groups can be described in a meaningful and comparable way to assess where resources and programmatic interventions are needed and to design, implement, monitor, and evaluate policy and programmatic interventions.

The HHS is a household food deprivation scale, derived from research to adapt the United States (U.S.) household food security survey module for use in a developing country context and from research to assess the validity of the Household Food Insecurity Access Scale (HFIAS) for cross-cultural use. The approach used by the HHS is based on the idea that the experience of household food deprivation causes predictable reactions that can be captured through a survey and summarized in a scale. This approach, sometimes referred to as an ‘experiential’ or ‘perception-based’ method of collecting data, was first popularized in the mid-1990s, when the United States Department of Agriculture (USDA) adopted the approach for routine measurement of household food insecurity in the United States. Since then, the approach has been more widely adopted by other food insecurity measurement tools, including the HFIAS.

Because the HHS has its origins in the HFIAS, it is important that HHS users and potential users be familiar not only with the HHS but also with the HFIAS.

The recommended format for the HHS questionnaire is shown in table below. To collect HHS data, it is very important that this full set of HHS questions be used. Project staff should not pick and choose certain HHS questions for inclusion in the questionnaire, because it is the set of HHS questions-not the use of each HHS question independently-that has been validated as a meaningful measure of household food deprivation.

No.	Question	Response Option	Code
Q1	In the past [4 weeks/30 days], was there ever no food to eat of any kind in your house because of lack of resources to get food?	0 = No (Skip to Q2) 1 = Yes	<input type="checkbox"/>
Q1a	How often did this happen in the past [4 weeks/30 days]?	1 = Rarely (1–2 times) 2 = Sometimes (3–10 times) 3 = Often (more than 10 times)	<input type="checkbox"/>
Q2	In the past [4 weeks/30 days], did you or any household member go to sleep at night hungry because there was not enough food?	0 = No (Skip to Q3) 1 = Yes	<input type="checkbox"/>
Q2a	How often did this happen in the past [4 weeks/30 days]?	1 = Rarely (1–2 times) 2 = Sometimes (3–10 times) 3 = Often (more than 10 times)	<input type="checkbox"/>
Q3	In the past [4 weeks/30 days], did you or any household member go a whole day and night without eating anything at all because there was not enough food?	0 = No (Skip to the next section) 1 = Yes	<input type="checkbox"/>
Q3a	How often did this happen in the past [4 weeks/30 days]?	1 = Rarely (1–2 times) 2 = Sometimes (3–10 times) 3 = Often (more than 10 times)	<input type="checkbox"/>

In addition, a 4-week (30-day) recall period should always be used for collecting HHS data. It is not recommended to use a different recall period for several reasons. Longer recall periods pose a risk of measurement bias due to problems with accurate recall over an extended period of time, and a recall period shorter than 4 weeks (30 days) may not capture the full extent of the deprivation experience, since fluctuations of food accessibility are common within a month.

It is important to note that the HHS focuses on the food quantity dimension of food access and does not measure dietary quality. Additionally, because the HHS is a household level indicator, it does not capture data on food availability or food utilization, which are other components of food security typically measured at the national level (availability) and individual level (consumption/utilization).

The HHS is intended to be used as a small module within a larger, more comprehensive food security and nutrition questionnaire administered to a representative population-based sample of

households. Ideally, the HHS should not be used as a unique, stand-alone measure of food insecurity but instead as one of a suite of tools to measure complementary aspects of food insecurity. Other components of a household food insecurity assessment toolkit might include anthropometric data on women and children; measures of household income, expenditure, and food production and consumption; and information on coping strategies and household and individual dietary diversity.

Because the HHS questions cover topics about which respondents may be sensitive, it is recommended that the HHS module be placed towards the end of the survey instrument, to be administered after a certain degree of rapport has been established between the enumerator and the respondent. If dietary diversity or food consumption data are being collected in the survey, the HHS module might be well placed immediately following this section. Involving the respondent in describing the diet through an active recall is an excellent way for the enumerator to build a rapport with the respondent, and can pave the way for asking more personal or potentially embarrassing questions.

The most appropriate time of year to administer the HHS should be determined by the intended use of the scale. If the HHS is used to assess the change in the household food insecurity situation between years, or to measure the impact of an intervention, it is important to administer the HHS at the same time of the year. When using the scale to measure the prevalence of food deprivation or for establishing a baseline prevalence estimate, it is advisable to administer the HHS during or directly after the worst of the lean season, as this is when the greatest number of households is likely to be affected by food insecurity. However, if the aim is to use the HHS for geographic targeting, the height of the lean season may not be the optimal time to administer the HHS, as the results will not distinguish those who are chronically food insecure from those who are only episodically food insecure, such as during the lean season.

Tabulation of the Categorical HHS Indicator

To tabulate the categorical HHS indicator, two different cutoff values (> 1 and > 3) are applied to the HHS scores that were generated in Step 3 above. The three household hunger categories are shown below.

HHS Categorical Indicator

Household Hunger Score	Household Hunger Category
0-1	Little or no hunger in the household
2-3	Moderate hunger in the household
4-6	Severe hunger in the household

The median value is the value that falls at the 50th percentile of the score distribution for the sample. This value can be identified by most data analysis software programs by producing summary statistics for the variable of interest. An alternative method of finding the median HHS value is to order all HHS values in the sample in ascending or descending order and find the HHS value that falls in the middle of all ordered values.

Activity 33

Dear student! Identify some 10 households in your area and try to collect firsthand data from the households by using the generic questions indicated hereinbefore. Try to compute the food security status of the households by using HHS. Categorize each household according to their level of food security

6.4. Coping Strategy Index (CSI)

Coping Strategy Index (CSI) is very important to appraise the food security situation of a community over multiple periods, among locations and across specific population groups provided that the examinees are from the same community, location, or culture for which the CSI tool can be adapted. To cope with shocks of food deficit and minimize potential declines in food access, households typically adjust their consumption patterns and reallocate their resources to activities which are more insulated from the influence of those risks.

In sowing/rainy periods, for example, households may sell-out small assets to ensure continued food supply for their family. They may also shift their labor resources from crop production to non-farm petty-income activities such as firewood and charcoal production, and labor rental. Sometimes destitute households may send-off some of their family members to well-off relatives. Others may request social support from the community. They may also adjust their consumption patterns by reducing their dietary intake to conserve food relying more on less preferred foods to meet their immediate food needs. If the crises of food shortfalls continued unabated, household responses usually become increasingly costly leading to the loss of productive assets (such as livestock, land and farm equipments) which can ultimately threaten the households' future livelihoods and food security status.

Consumption Coping Strategy Response

Behaviors: In the past 7 days, if there have been times when you did not have enough food or money to buy food, how many days has your household had to:	Frequency: Number of days out of the past seven: (Use numbers 0 – 7 to answer number of days; Use NA for not applicable)
a. Rely on less preferred and less expensive foods?	
b. Borrow food, or rely on help from a friend or relative?	
c. Purchase food on credit?	
d. Gather wild food, hunt, or harvest immature crops?	
e. Consume seed stock held for next season?	
f. Send household members to eat elsewhere?	
g. Send household members to beg?	
h. Limit portion size at mealtimes?	
i. Restrict consumption by adults in order for small children to eat?	
j. Feed working members of HH at the expense of non-working members?	
k. Reduce number of meals eaten in a day?	
l. Skip entire days without eating?	

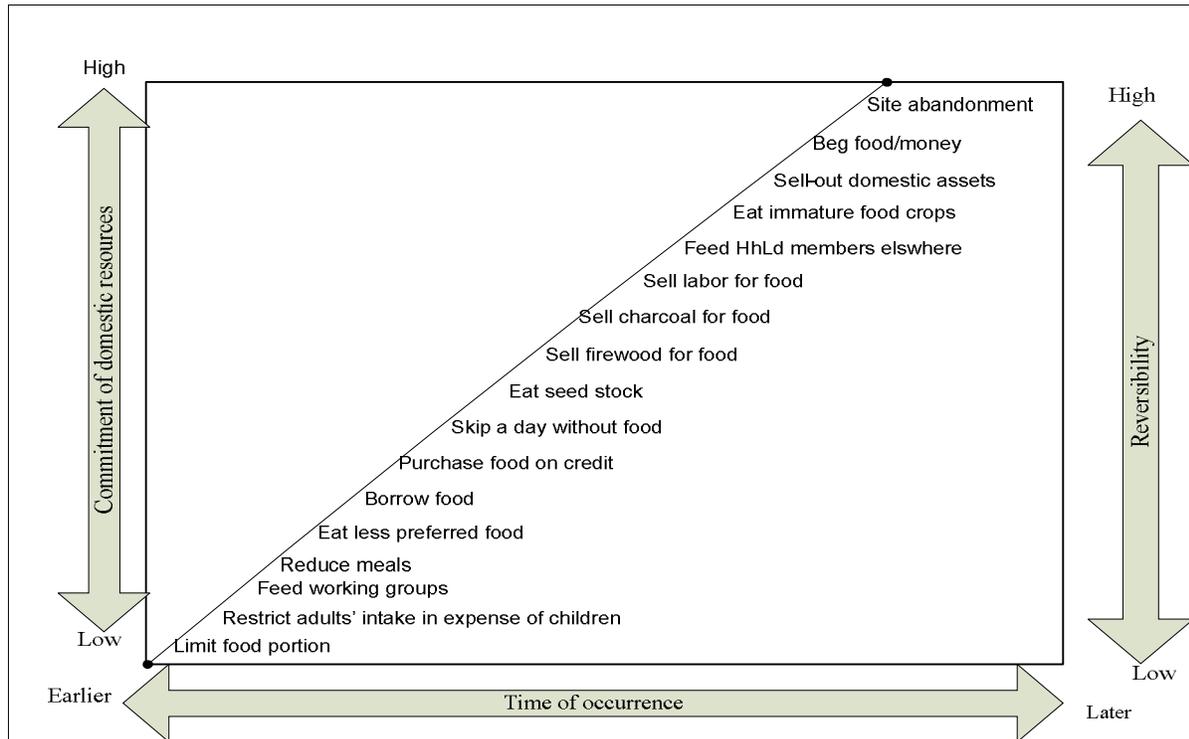
The analysis of Coping Strategy Index (CSI) depends on many possible responses (0 to 7) to a single question: *'What did you do when you did not have adequate food and did not have the*

money to buy it in the last 7 days?' This helps measure what the households' do when they cannot access enough food timely. The basic idea is to measure the frequency of the coping behaviors (how often is the coping strategy used?) and the severity of the strategies (what degree of food insecurity do they suggest?). Information on the frequency and severity is then combined in a single score, the CSI, which indicates the household's food security status over space and time.

Based on the average perception values, the households/individuals can be grouped into four severity categories: (1) very severe, (2) severe, (3) moderately severe and (4) least severe. Although there was no complete agreement on each strategy, there was fairly good consensus on the severity of most of the strategies. For instance, relying on less preferred and less expensive foods, limiting portion size, skipping the entire day without food and begging were reported to be the most severe coping strategies among the resettlers.

It is clear that these coping strategies are not equal in severity. Some strategies, such as begging and skipping the entire day without food, are practiced when food shortfalls are very severe while others may be carried out during moderate food shortfalls or even during minor food scarcity problems. The community is the most appropriate body to weigh the severity of the strategies depending on previous experiences and perceptions of the society at large. Each case study households for a study should be requested to rank the strategies from lowest (least severe) to highest (most severe). The average severity weight can be computed for each coping practice and the consensus ranking values can be determined.

The following figure is as Messay (2011) modified from Frankenberger (1992) to Ethiopian context in resettlement areas.



Activity 34

Dear student! Identify some 10 households in your area and try to collect firsthand data from the households by using CSI generic questions. Try to compute the food security status of the households by using CSI. Categorize each household according to their level of food security

6.5. Food Consumption Score (FCS)

The FCS is a composite score based on dietary diversity, food frequency, and relative nutritional importance of different food groups. Food items are grouped into 8 standard food groups with a maximum value of 7 days/week.

Food groups & weights

Food Items	Food groups	Weight
Maize , maize porridge, rice, sorghum, millet pasta, bread and other cereals	Cereals & tubers	2
Cassava, potatoes and sweet potatoes		
Beans. Peas, groundnuts and cashew nuts	Pulses	3
Vegetables and leaves	Vegetables	1
Fruits	Fruits	1
Beef, goat, poultry, pork, eggs and fish	Meat & fish	4
Milk yogurt and other diary	Milk	4
Sugar and sugar products	Sugar	0.5
Oils, fats and butter	Oils	0.5
Condiments	Condiments	0

The consumption frequency of each food group is multiplied by an assigned weight that is based on its nutrient content. Those values are then summed obtaining the Food Consumption Score (FCS).

The typical thresholds are:

Threshold	Profiles	Threshold with oil & sugar eaten on a daily basis (\cong 7 days/week)
0 – 21	Poor food consumption	0 – 28
21.5 – 35	Borderline food consumption	28.5 – 42
> 35	Acceptable food consumption	> 42

6.6. Household Dietary Diversity Score (HDDS)

Household dietary diversity score (HDDS) is a simple, rigorous and straightforward technique of analyzing the access component of food security. HHDS was tested in various countries and found to be rigorous as a means of measuring the status of food security at household and individual level. It depends on the number of different food groups consumed by a household or an individual over a given reference period.

Household dietary diversity, the number of different food groups consumed over a given reference period is an attractive proxy indicator for the following reasons:

- A more diversified diet is an important outcome in and of itself.
- A more diversified diet is associated with a number of improved outcomes in areas such as birth weight, child anthropometric status, and improved hemoglobin concentrations.
- A more diversified diet is highly correlated with such factors as caloric and protein adequacy, percentage of protein from animal sources (high quality protein), and household income. Even in very poor households, increased food expenditure resulting from additional income is associated with increased quantity and quality of the diet.
- Questions on dietary diversity can be asked at the **household or individual level**, making it possible to examine food security at the household and intra- household levels.
- Obtaining these data is relatively straightforward. Field experience indicates that training field staff to obtain information on dietary diversity is not complicated, and that respondents find such questions relatively straightforward to answer, not especially intrusive nor especially burdensome. Asking these questions typically takes less than 10 minutes per respondent.

To better reflect a quality diet, the number of different *food groups* consumed is calculated, rather than the number of different *foods* consumed. Knowing that households consume, for example, an average of four different food groups implies that their diets offer some diversity in both macro- and micronutrients. This is a more meaningful indicator than knowing that households consume four different foods, which might all be cereals. The following set of 12 food groups is used to calculate the HDDS:

1. Cereals
2. Fish and seafood
3. Root and tubers
4. Pulses/legumes/nuts
5. Vegetables
6. Milk and milk products
7. Fruits
8. Oil/fats
9. Meat, poultry, offal
10. Sugar/honey
11. Eggs
12. Miscellaneous

Calculation of the HDDS

Tabulation of the HDDS is a relatively simple matter that can be done by hand or with the aid of computer software such as a database or spreadsheet. First, the HDDS variable is calculated for each household. The value of this variable will range from 0 to 12. Second, the average HDDS indicator is calculated for the sample population by dividing sum of HDDS by total number of households. An increase in the average number of different food groups consumed provides a quantifiable measure of improved household food access. In general, any increase in household dietary diversity reflects an improvement in the household's diet. In order to use this indicator to assess improvements in food security in a performance reporting context, the changes in HDDS must be compared to some meaningful target level of diversity. Unfortunately, normative data on 'ideal' or 'target' levels of diversity are usually not available.

Note: NoteThe full document of HDDS is available online as Swindale and Blinsky (2006) Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access: Indicator Guide Version 2

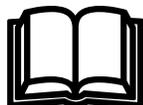


Exercise 7

Read the the following questions carefully. Respond to all the questions neatly and submit your answers to your tutor

1. Mention as many techniques of food security analysis. Which one is the best technique? Why?
2. Explain Household Food Balance Model. Who modified and re-modified to Ethiopian context
3. What are the important data for HFIAS? How do we collect the data?
4. Mention the generic question of HFIAS. Which ones are not suitable to in your area?
5. Discuss the difference between Food Consumption Score and Household Dietary Diversity Score (HDDS). Which one is more rigorous in food security analysis?
6. Explain the procedures in HDDS.

UNIT VII: A GLANCE AT FAMINE & POLICY RESPONSES IN ETHIOPIA



Introduction

The appalling environmental and climatic conditions in Ethiopia, coupled with the consequential failure in agricultural productivity, have been afflicting millions of Ethiopians particularly since the 1800s. The recorded instances of famine in the country indicate that persistent famine incidents affected millions of people making Ethiopia by far the most severely affected country in Africa. Malfunctions in agriculture and the resultant humanitarian crises of 1958, 1973, 1984-86 and 2002, for instance, are among the most grievous recent cases in point although Ethiopia has a long history of famine dating back to 240s BC. These were among the worst famine incidences in African history both in intensity and spatial coverage. Similarly, shortage of rainfall was reported in 2011 in most lowland areas of Ethiopia as a result of which over 4.5 million inhabitants were severely affected, according to MoARD Disaster Management and Food Security Sector of Ethiopia. Generally, food insecurity and malnutrition have remained the greatest threat to people in Ethiopia to date despite the government's earnest effort to develop the agricultural sector. In response to this Ethiopian governments used to formulate and implement policies/strategies in order to ease the problems. This chapter, therefore, gives a highlight about causes, consequences and trends of famine and food insecurity in Ethiopia



Unit learning outcomes

On successful completion of this unit, the students will be able to:

- explain briefly the trends of famine and food insecurity in Ethiopia
- identify the major causes and consequences of famine and food insecurity Ethiopia
- discuss the spatial and temporal dynamics of famine and food insecurity in Ethiopia
- elucidate the policy responses to famine and food insecurity problems in Ethiopia

7.1. Famine and food security trends in Ethiopia

Activity 35

Dear student! What do you think are the major causes of famine/food insecurity in Ethiopia? Have you ever heard of HHS? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

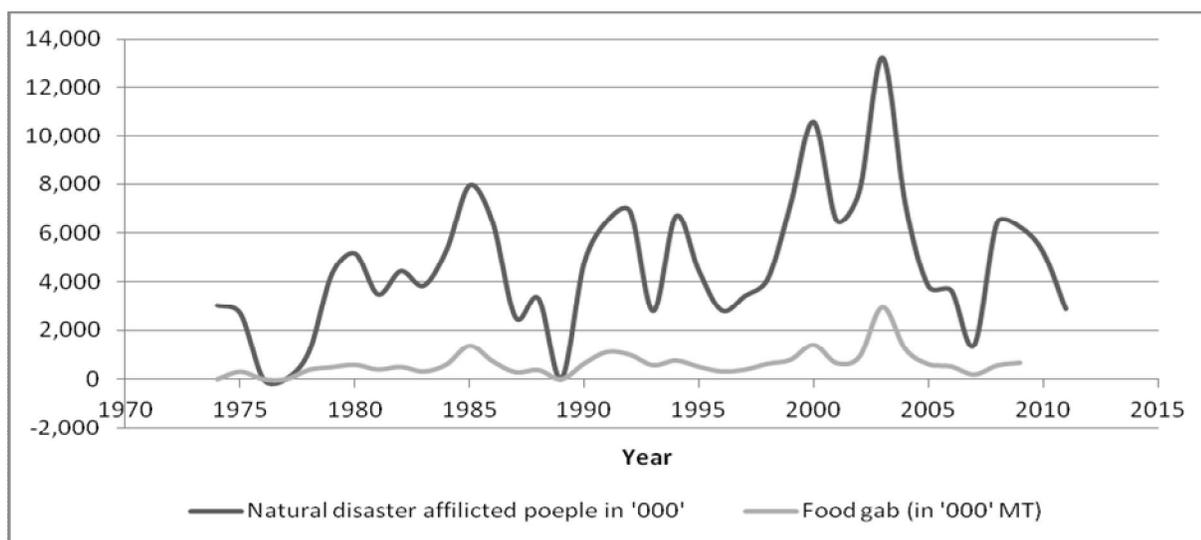
Ethiopia makes up the greater part of the East African. At latitudes of about 3°N to 15°N, Ethiopia's climate is typically tropical in the southeastern and northeastern lowland regions, but much cooler in the large central highland regions of the country. Mean annual temperatures are around 15.20°C in these high altitude regions, whilst 25.30°C in the lowlands such as Afar, Somali, Borena and Bale lowlands. Seasonal rainfall in Ethiopia is driven mainly by the migration of the Inter-Tropical Convergence Zone (ITCZ). The exact position of the ITCZ changes over the course of the year, oscillating across the equator from its northern most position over northern Ethiopia in July and August, to its southern most position over southern Kenya in January and February. Most of Ethiopia experiences one main wet season (called *kiremt season*): June, July and August (up to 350mm per month in the wettest regions such as Ilu Abbabor, Jimma and Wollega in western Ethiopia), when the ITCZ is at its northernmost position. Parts of northern and central Ethiopia also have a secondary wet season of sporadic, and considerably lesser, rainfall in March, April and May (called the *belg season*).

The southern and southeastern highlands of Ethiopia experience two distinct minor wet seasons which occur as the ITCZ passes through this more southern position. The *kiremt* season is the main rainfall season yielding 100-350mm per month in most parts of Ethiopian highlands followed by a lesser rainfall season in September to the end of November (called *autumn season*). The eastern and northeastern most corner of Ethiopia receives very little rainfall at any

time of the year. The movements of the ITCZ are sensitive to variations in Indian Ocean sea surface temperatures and vary from year to year, hence the onset and duration of the rainfall seasons vary considerably inter-annually, causing frequent drought. The most well documented cause of this variability is the El Niño Southern Oscillation (ENSO). Warm phases of ENSO (El Niño) have been associated with reduced rainfall in the main wet season, in north and central Ethiopia causing severe drought, famine and livelihood crises, but also with enhanced rainfalls in the earlier *belg* season which mainly affects southern Ethiopia.

Ethiopia is one of the poorest (but fastest growing at present) and most food insecure counties in the world. Among Sub-Saharan African countries, it is the second most severely affected country in terms of the prevalence of chronic dietary energy deficiency. Some 33.6 percent (37.4 percent in rural and 27.9 percent in urban areas) of the country's population are the food poor who had access to and consumed below the minimum requirement of 2100 Kcal in 2010/2011. A sizable proportion of Ethiopian children (under five years) are stunted (51 percent), underweight (35 percent) and wasted (12 percent) as of 2008. The levels of malnutrition are more prevalent in rural areas of Ethiopia than in urban areas. In some rural parts of the country, over 90 percent of the inhabitants have no adequate access to the nationally set minimum dietary requirement of 2100 kcal/person/day.

Trends of bioclimatic disaster afflicted Ethiopians and the observed food gap (1974-2011)



Domestic food production has failed to meet national requirements, and the number of food insecure people has been increasing in the country particularly since 1970s (See Figure 1). For the last three and half decades (1974-2012), averagely about 4.72 million people have been suffering from food shortage crises per annum. As a result, with an average food scarcity gap of over 637,000 metric tons per annum since 1974, Ethiopia has become increasingly dependent on international food aid. The cumulative effect of all these adverse scenarios put the country at the bottom rank of the United Nations Human Development Index. For instance, with the HDI value of 0.363, Ethiopia is much lower than the Sub-Saharan average of 0.463 in 2011.

Recorded instances of famine and food insecurity in the country indicate that persistent famine incidents affected millions of people making Ethiopia by far the most severely affected country in Africa. Over 25 major famine cases have been recorded from 1800 to 2012 and about 12 such cases have been documented to have occurred since 1950 alone in the country (See the table & figure below). The humanitarian famine-induced crises of 1958, 1973, 1984-86 and 2002, for instance, are among the most grievous recent cases, although Ethiopia has a long history of famine dating back to 240s BC. These were among the worst famine incidences in African history both in intensity and spatial coverage.

Chronology of major climate-induced famine incidences in Ethiopia since 1950s

Year	Major incidences
1953	Drought and famine in Wollo and Tigray
1957-58	Devastative famines in Tigray, Wollo, and south-central Shewa. About 1,000,000 farmers in Tigray might have been affected of which about 100,000 peasants migrated and 100,000 of them are said to die.
1962-66	Many parts of the northeastern Ethiopia suffered from droughts and famine. Tigray and Wollo were severely hit.
1973-74	This was one of the most widespread famine in which many parts of Eastern Hararge, Southern Region and Bale lowlands were severely hit. About 100,000 to 200,000 peoples died of this extensive famine.
1977-78	Most parts of the Wollo were severely hit by famine owing to shortage/excess

	famine, pest damage, and frost actions. About 500,000 peasants were said to be affected.
1984-85	Most parts of Ethiopia including famine-free areas like Walaita, Kambata and Hadiya were hit by famine. The causes were drought and crop diseases. It is estimated that about 1,000,000 people died though some estimate the death to be about 500,000.
1987-88	Tigray, Wollo and Gonder were severely affected by famine owing to drought incidence and civil wars.
1990-92	Rain failure and regional conflicts, estimated 4,000,000 people suffering food shortages
1993-94	Very severe and widespread famine occurred. But no or little deaths and displacement were reported because of the responses by the government and international aids
2002-2003	One of the major drought occurred in Ethiopia. This resulted in widespread famine. No death was occurred because of quick responses by the government and international aids
2010-2011	One of the major drought occurred in Ethiopia leaving the country home to 2.8 million people in need of emergency food aid. No death was reported. Severe famine occurred in southeastern lowlands of the country.

Source: Compiled from Markos (1997), Webb *et al.* (1992); Cochrane (2011) & Messay (2012)

An estimated 250,000 to 300,000 peasants of Tigray and Wollo died during the 1973/4 famine alone; whereas, more than 1 million people again died, and over 8 million suffered from severe hunger as a result of the 1984/5 drought hazard. Some writers estimate the deaths to be between 100,000 and 200,000. The 2002 drought also caused food shortage distresses to 14.3 million Ethiopians though no considerable number of deaths was reported. Similarly, due to the shortage of rainfall in 2011 in most lowland areas of Ethiopia, over 4.5 million inhabitants have been severely affected by food shortage. The government also recently (in August 2012) reported that over 3.7 million Ethiopians are in need of food aid mostly owing to drought incidences.

Generally, food insecurity and malnutrition have remained the greatest threat to the people in Ethiopia thus far despite the government's earnest effort to develop the agricultural sector.

Many believe that a range of natural and man-made hazards like environmental degradation, erratic rainfalls, epidemics, poor but improving governance, rapid population growth rate (2.6 percent per annum) and social conflicts plunged the country into a widespread poverty precarious livelihoods situation over years. Especially, the livelihoods situation of most of rural residents (about 84 percent of the 80 million people of Ethiopia is precarious. These groups of people derive their livelihoods from subsistence agriculture which is highly susceptible to change in climate such as rainfall variability. This gives the impression that the basic cause of food insecurity in Ethiopia is partly attributed to climatic risks, natural resource depletion of which the most notable ones are exhaustion of soil fertility, water depletion, shrinking of vegetated lands, expansion of desert ecological conditions, disturbance of local and/or regional climates, loss of biodiversity and erratic rainfalls, the overall impact of which is thought to be food insecurity prevalence and related humanitarian crises.

7.2. Livelihood and food security policies and strategies



Activity 36

Mention the policies/strategies targeting to reduce food insecurity in Ethiopia. Are the objectives of the strategies achieved? What do you think is the reason? Try to note down your brief answers and compare against what you will read in the subsequent paragraphs.

Effective and efficient institutional and policy framework forms the basis to ease the problems related to livelihoods and food insecurity. Several countries try to enhance the livelihoods of

their citizens through regional agreements and national strategies or legal frameworks of which the most notable one is MDGs.

Some countries are also working hard to promote the livelihoods of their people through policy and legislative provisions. They formulate appropriate policies/strategies for the proper management, performance and funding of some crucial sectors so as to get the most out of them. A case in point is Ugandan, a country where urban/peri-urban agriculture is found to have been guided by appropriate policies/strategies. Urban/peri-urban agriculture in Kampala city, for instance, is a constituent sector of Kampala City Council under the Department of Production, Marketing and Environment. The City Council has now streamlined urban agriculture through policy provisions and guidelines embodied in a number of urban agriculture ordinances which were approved in May 2005. The department is comprised of 5 sub sectors such as Crop Production and Extension services, Animal Production and Extension Services, Fisheries and Aquaculture Production and Extension Services, Commercial Services, Trade and Cooperatives, and Environment and Natural Resources Management Services. The Department is guided by policy guidelines such as Plan for Modernization of Agriculture (PMA) and Urban Agriculture Ordinances and the National Environment Statute (NES) (www.cityfarmer.info.)

As a result, Uganda has turned out to be one of the countries getting the most out of the sector improving the livelihoods of the poor. Urban agriculture has become integral part of Kampala's economy and an important livelihood strategy for the urban poor, especially women. Over 35 percent of the city's population practice some form of agriculture. For instance, they provide about 70 percent of poultry needs. In Kampala, 55 per cent of the urban producers obtain 40 percent or more, and 32 percent obtain 60 percent or more of their household food from their own urban garden.

Similarly, Kenya is one of the most notable countries with suitable policy/strategy for urban/peri-urban agriculture and well-organized governmental administrative offices and research centers charged with duties and responsibilities of UPA. Despite the significant role of urban agriculture, the sub-sector had over the years operated with little support in terms of policy, legal, and

regulatory framework. In addition, the sub-sector had insufficient technical capacity to keep abreast with changing trends in technology. This situation has raised concerns regarding safety of the food, environmental pollution, and increasing number of conflicts over resources such as land and water. In a bid to mitigate these challenges and in order to spur further growth and sustain the development of the sub-sector, the government of Kenya has developed the National UPA and Livestock Draft Policy in 2010. In addition to the national policy, the National Urban and Peri-urban Agriculture and Livestock Steering Committee (NUSC) has been instituted to oversee the policy implementation. Other committees instituted include the UPA Coordinating Committee that is charged with the responsibility of handling technical matters; and the Municipal and Town Councils Agriculture and Livestock Committees (MCAL) that are mandated with responsibilities of managing UPA and Livestock programs and projects at the municipal and town council level.

Cuba is also another most notable country in making the best out of urban agriculture through well-organized management and policy formulation. The government's first and most important step was to officially license unused space to be utilized for cultivation with the adoption of a law in 1994. The law makes it relatively easy for individuals or groups of people to gain access and usufruct ownership of land for UPA. Since then, Cuba has developed a comprehensive and detailed policy framework for urban agriculture. Existing rules and regulations governing the agriculture have been adapted and adjusted accordingly, and others were adopted specifically for the purpose of urban agriculture. These other laws also support public research and development of highly diversified organic production technologies and fertilizers; the provision of high quality seed and technical advice, information and education services; as well as the encouragement of on-site vending. As a result, organic urban farming makes very efficient use of whatever plot of land is available, thereby creating employment opportunity for many persons and providing fresh produce with zero transportation costs or emissions. Today, over 26,000 gardens (2,439 hectares) are available for UPA in Havana producing 25,000 tons of food annually. Generally, about 40% of households are involved in urban agriculture in Havana.

Similarly, Ethiopia drafted and implemented several policies, programs and strategies targeting the betterment of the livelihoods of its people. The Federal Democratic Republic of Ethiopia has developed a number of comprehensive policies, strategies and programs for accelerated and sustainable economic development since it assumed power in 1991. Such policies and strategies include the Agricultural Development Led-Industrialization (ADLI) Strategy, Rural Development Policy and Strategies (2003), the Sustainable Development Program to Reduce Poverty (SDPRP), Plan for Accelerated and Sustained Development to End Poverty (PASDEP), Growth and Transformation Plan (GTP) and Climate Resilient Green Economy Strategy. By implementing these productive policies, strategies and programs, remarkable progresses have been made in the last 2 decades in various sectors in Ethiopia.

7.3. Planned resettlement program as a policy response to food insecurity in Ethiopia

Activity 37

What is resettlement? Jot down a brief history of planned resettlement program in Ethiopia and compare your answers against what you will read in the subsequent paragraphs. Do you think that the objectives of the programs have been achieved? What do think are the major reasons?

Ethiopia began to practice planned population relocation most notably since 1958 when the Imperial Government (1930-1974) established the first known planned resettlement scheme in the present day SNNP National Regional State. The planned resettlement schemes during the *Imperial* Period involved only 20,000 households. Besides, it was designed to achieve specific and limited objectives. In fact, the state-sponsored-resettlement was undertaken largely to promote two objectives though the government failed to meet either. The first of these was to

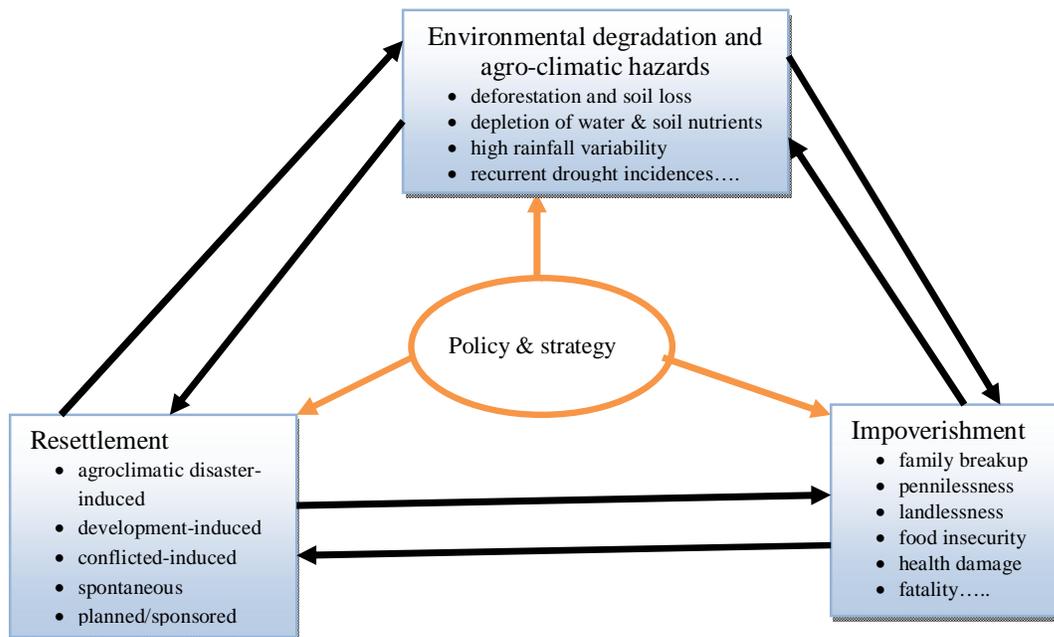
rationalize land use and thus raise state revenue. The second was to provide additional resources for the hard pressed northern peasants by relocating them to the southern regions.

For the Imperial Regime, resettlement was a means of redistributing population and of promoting development of less populated areas. By 1974, the government resettled some 10,000 households. The projects were set up with ambitious economic, social and political objectives: to deal with famine, to provide land to the landless, to increase agricultural production, to introduce new technologies, to establish cooperatives, to get rid of urban unemployment, to prevent charcoal burning, to settle pastoralists and shifting agriculturalists, to form defense at the border of Somalia and to rehabilitate repatriated refugees. The results were generally poor, the schemes tended to fail, and most resettlers deserted the area because of inappropriate settler selection, inadequate budgetary support, inadequate planning and inexperienced executive staffs.

It was during the Military Government/commonly known as *Derg*/ (1974-1991) that the bulkiest and the severest planned resettlement schemes took place in Ethiopian history. The *Derg* designed a series of proclamations, and organized and reorganized offices/authorities to create 'a legal basis' for the implementation of the program. A case in point is the 1975 Land Reform Proclamation (No. 31/1975) of Article 18 that states: 'The government shall have responsibility to settle peasants...to accommodate those who, as a result of the distribution of land,...remain with little or no land'. Similarly, the Resettlement Authority was established in 1976 with the aim of coordinating the resettlement program in the country. The Settlement Authority passed a decree in 1976 that any landless/land-deficit or unemployed person who is volunteer, in good health and working age was required to resettle where there was sufficient land to maintain his/her livelihoods. In 1979, the RRC was reorganized by merging three organizations: RRC itself, the Resettlement Authority (RA) and the Awash Valley Authority. This new organization picked up the pace of the resettlement program in the country.

Like the Imperial Regime, *Derg*'s resettlement plan looked splendid and praiseworthy. It pretended to promote economic development and improve the living standards of the rural people through easing the problems associated with rapid population growth, recurrent drought, ecological degradation, famine and nomadism. Initially, it insisted on the resettlement program

as if it were purely voluntary and the only mechanism to organize the haphazardly drifting population from overworked and drought-stricken parts to the more fertile and sparsely populated sections of the country. Practically, however, the implementation of the program seemed to have the characteristics of forced or compulsory-voluntary relocation. So *Derg* implemented it forcefully and even on quota bases without the consent of the potential resettlers. Forceful mass dislocation went to the extent of forcing the potential resettlers from market places and farms and sending them off collectively to the new areas where they had no prior information. In the new areas (for example Beles Resettlement Scheme), settlers had been deprived of their basic human rights, such as freedom of movement and social gatherings, thinking that the resettlers may get away otherwise.



Vicious circle of resettlement schemes during *Derg* Regime in Ethiopia. The arrows indicate the interconnection between each event. (Source: Own construction based on literature review)

The *Derg* government had resettled 38,818 households by 1976 in 88 resettlement sites. By 1982, there were 112 planned resettlement centers inhabited by more than 120,000 resettlers. During the ten-year development plan period (1984-1994), the *Derg* planned to move about 300,000 famine victim households (equivalent to 1.5 million peoples) from the northern parts of the country to areas in the west and southwest which had adequate natural resources such as rainfall and ample fertile soil. Of these, the government managed to resettle about 600,000 people in to

three settlement areas as of 1986. More than 250,000 displacees went to Wollega; about 150,000 were resettled in Gambela, and over 100,000 resettlers¹ went to *Pawe* in the present day Benishangul-Gumuz National Regional State. In addition, another 78,000 resettlers went to Kafa, Shewa, and West Gonder. Of these, some 33,000 resettlers died as a result of lowland diseases, hunger and exhaustion.

The major causes of population displacement during the *Derg* Regime were environmental degradation, rainfall variability and recurrent drought incidence as portrayed in Figure 4.3. A wide-ranging ethnic conflicts of the period and 'development projects' also instigated population displacement incidents which took place in the form of planned and spontaneous episodes. The resettlement schemes ultimately resulted in vicious circle of impoverishment which specifically resulted in family breakup, pennilessness, health problems and famine and death episodes.

Derg's resettlement schemes were entirely involuntary and were implemented hastily and haphazardly though the government argued that it was meant to support and organize the famine-stricken and spontaneously drifting people. No appropriate studies, detailed planning and site selection activities were executed prior to the actual implementation of the schemes. Often times, the Head of State and other high government officials themselves planned and selected resettlement sites based on aerial maps, helicopter tours and short visits to the potential receiving areas. Consequently, the outcomes remained contrary to the expectations although the government argued that the program helped to relieve population pressure, actualize the country's potential resources and transform settlement patterns. The program entirely failed resulting in further impoverishment, deaths, desertion and in some areas unrecoverable environmental degradation. None of the objectives were achieved and yet the cost in human lives and resources was immense. *Derg's* resettlement program, coupled with other adverse socio-economic and political factors such as nationalization of land and private business institutions, political crackdowns and civil wars, was highly disruptive to economic activities.

Any review of *Derg's* resettlement program would not be comprehensive without paying attention to *villagization*. As another practice of population relocation program, *villagization* was

initiated in 1985 with the objective of transforming the rural community from scattered villages to nucleated settlement patterns. Under this program, *Derg* had attempted to gather the scattered farming communities throughout the country into larger clustered villages to promote rational land use; conserve natural resources; provide access to clean water, health and education services; and to strengthen national security. The intention was to promote land productivity, conserve natural resources, and provide access to public services like clean water, clinics and schools, electricity, market and cooperatives. It was also meant to promote public self-defense and guarantee peace and security throughout the country.

The guidelines of *Derg's* villagization scheme stipulated that each village should be able to house 200 to 300 households, with 100m² compounds for each family. As a result, by March 1986, about 4.6 million people in Shewa, Arsi, and Hararge had been relocated into more than 4,500 cramped villages. In total, the government had villagized about 13 million people by 1989 in 12 of the 14 administrative units (*kiflehagers*), with the exceptions of Tigray and Eritrea. This program uprooted over 30 million peasants over a nine years period if had it run its course of action.

Similar to the resettlement program, *Derg's* villagization scheme eventually collapsed. Thousands of people fled to avoid villagization; others lived in deplorable conditions after being forcibly resettled. The services that were supposed to be delivered in new villages were not provided or provided with paltry resources because the government lacked the necessary resources'. Moreover, the program was severely criticized by international organizations and local academia for its deleterious social and environmental impacts. This, coupled with deteriorating security conditions and meager national resources, doomed the villagization plan to failure. Owing to critical international and local criticisms, *Derg* eventually abandoned its villagization program and announced a new economic policy (i.e. mixed-economy) in March 1990 with the intention of relaxing the command economic system.

Regarding the current government-sponsored resettlement practice in Ethiopia, the Federal Democratic Republic of Ethiopia (FDRE) was initially reluctant to consider resettlement as a viable option for development. It was the occurrence of severe drought in early the 2000's along

with the resultant food security crises that urged the government to launch an intra-regional resettlement (also known as Access to Improved Land) program in 2003.

This was noted by late FDRE's Prime Minister Meles Zenawi at a large conference for development agencies in June 2003. He explained that the government '... had initially been reluctant to consider resettlement as a viable option for alleviating food insecurity, but had been swayed by what he saw as widespread public support for resettlement. He noted that in some areas, people were already resettling themselves, moving ... in their tens of thousands in a haphazard manner in a way that is not good for their future....'. The program was justified as a measure to help people move in a more organized manner in order to avoid conflict with local hosts and putting too much pressure on natural resources in destination areas.

The first pilot program was, then, implemented in 2002 in Oromiya and Tigray. In Oromiya, for instance, victims of landslide in North Shewa were moved to *Lugama* (in *Dhedhessa* Valley), East Wollega. The main objective of the program was to resettle 2.2 million people, or 440, 000 households, from chronically food insecure and environmentally vulnerable areas to more fertile lowlands within three years. This incurred the government slightly over 217 million US dollars in cost. This is considered to be the largest ever recorded resettlement program in the country's history.

The current resettlement program is viewed by the government as a long-lasting solution to food insecurity and land scarcity in the highland parts of the country. The government argues that the program is planned so as to adequately provide the stressed rural people with improved land within their own region though some researchers argue that such large-scale resettlement programs may not be viable options to achieve the targeted goals and they barely result in food security.

The current resettlement program was mainly based on the National Food Security Strategy (issued in 1996 and updated in March 2002) which was part of the wider Sustainable Development and Poverty Reduction Program. It has been considered as one of the essential elements of the updated food security strategy which has been carried out only intra-regionally

on the basis of voluntary consent of the would-be resettlers without any imposition or a quota system unlike the *Derg's* case. Some researchers however, seem to argue that the current resettlement program in Ethiopia is not purely based on voluntarism and that it has failed to achieve its ambitious targets. This is because 'Settling people is a complex undertaking, and it [needs] careful planning, skilled personnel, and many years of hard work and considerable resources to achieve success'.

In both of the previous Ethiopian food security programs (First Phase: 2004-2009 and the Second Phase: 2010-2014), resettlement appears to be one of the vital components of Rural Development Policies and Strategies. This is a voluntary resettlement program targeting abating environmental stress and population pressure in the highland parts of the country. The program intends to provide the landless or land-poor with sufficient and fertile land, clean water, health services, education and other public services and natural endowments. After the experiences of forced resettlement under the *Derg* in the 1980s, resettlement programs in Ethiopia remained contentious, as a result of which donors remained reluctant to support it. Consequently, the Ethiopian government has been expected to cover the entire cost of the program.

The current resettlement program was launched when drought-affected people had already started moving to more sparsely populated productive areas in a spontaneous manner. The government, in the name of assisting the movers, initially began a pilot resettlement scheme in 2002/03 that has resulted in intraregional resettlement of about 45,000 households (180,000 people) in three regions: Amhara, Oromiya and Tigray. Six months after the pilot phase, the government planned to implement more intensive and prolonged intra-regional resettlement scheme targeting to resettle about 440,000 households (2.2 million people), who were assumed to be poor and landless living in overworked and moisture-stressed areas. They were thought to be victims of prolonged food insecurity attributed to erratic rainfall conditions, degraded environment and population pressure. However, only 213,917 households (48.62 percent) /equivalent to about 1.4 million people/ were reported to have resettled in four major crop producing regions (Amhara, Oromiya, SNNPRS and Tigray) as of 2010. Of these, about 95 percent were reported to have achieved food self-sufficiency by the government. According to

the MoA/FSCD Resettlement Team Case, the government has targeted to resettle about 83,559 households within Amhara, Oromiya, and SNNP regions by 2015.

In many ways, the current resettlement program seems quite different from those during the previous two governments. The most important variations are the fact that the current program considers ‘only voluntary’ households and that the resettlers are offered the right to return to their home if unhappy in the new areas and to keep their holdings in their original homeland for 3 years. It also employs intra-regional approach to prevent conflicts between the resettlers and the host community. Moreover, the potential resettlers are recruited after intensive awareness creation campaigns at kebele and sub-kebele levels. Many of the abuses, shortcomings and failures of the earlier phase (in 1980s) are avoided in the current program.

Review questions to be submitted to the instructor/tutor

Part I: Multiple Choice Items

1. In your future career in Ethiopia, if you are required to use Household Food balance Model (HFBM) to investigate the dietary calorie level of a community, which one of the following instruments will be very basic for your study?
 - A. GPS appliance
 - B. GIS software
 - C. EHNRI/FAO Food Composition Table
 - D. Weighing machine
 - E. No correct answer
2. The medically recommended level of calorie intake per day per adult for Ethiopia is
 - A. 1200 kcal/day/person
 - B. 2100 kcal/day/person
 - C. 3000 kcal/day/person
 - D. 2500 kcal/day/person
 - E. No correct answer
3. *'Did you worry that your household would not have enough food in the last 30 days?'* This is a generic question taken from which one of the following techniques?
 - A. Household Food Insecurity Access Scale
 - B. Coping Strategy Index
 - C. Household Hunger Score
 - D. Household Dietary Diversity Scale
4. A food security analysis technique that has been specifically developed and validated for cross-cultural use is
 - A. Household Hunger Scale
 - B. Household Food Balance Model
 - C. Household Food Insecurity Access Scale
 - D. Household Dietary Diversity Scale
 - E. All
5. *'What did you do when you did not have adequate food and did not have the money to buy it in the last 7 days?'* This generic question belongs to
 - A. Household Food Insecurity Access Scale
 - B. Coping Strategy Index
 - C. Household Hunger Score
 - D. Household Dietary Diversity Scale
 - E. No correct answer

6. Which one of the following does not belong to the basic food groupings in HDDS?
 - A. Fish and seafood
 - B. Pulses, legumes and nuts
 - C. *Injera*, roasted barely and French beans
 - D. Meat, poultry and offal
 - E. Roots and tubers
7. The argument of household dietary diversity, as a technique of food security analysis, does not include
 - A. a more diversified diet is an important outcome in and of itself
 - B. more diversified diet is associated with improved birth weight, child anthropometric status, and improved hemoglobin concentrations
 - C. a more diversified diet is highly correlated with such factors as caloric and protein adequacy
 - D. questions on dietary diversity should not be asked at the household or individual level, making it impossible to examine intra- household food security issues
 - E. All are correct
8. The maximum score that can be obtained from the respondents in case of Coping Strategy Index (CSI) is
 - A. 30
 - B. 7
 - C. 365.25
 - D. 12
 - E. No correct answer
9. Household responses like '*borrow food, skip the whole day without food, eat less preferred food, eat immature food crops, etc*' are most likely related to
 - A. Household Food Insecurity Access Scale
 - B. Coping Strategy Index
 - C. Household Hunger Score
 - D. Household Dietary Diversity Scale
 - E. No correct answer
10. Which one is wrong about household dietary diversity score (HDDS)?
 - A. It is a simple technique in food security analysis
 - B. HDDS is a rigorous technique
 - C. It is and straightforward to analyze the sustainability component of food security
 - D. HDDS is recommended for analyzing the access component of food security
 - E. B and C
11. Which one of the following is wrong regarding contemporary Ethiopia?
 - A. Ethiopia is one food insecurity countries and characterized by prevalence of chronic dietary energy deficiency at present
 - B. About 90% of the Ethiopian population is food poor who have access to below the minimum requirement of 2100 kcal per day per person
 - C. Only 5% of Ethiopian children (under five) are stunted at present in Ethiopia
 - D. B and C
 - E. A and B

12. What is the current strategy that Ethiopia implemented targeting the betterment of the livelihoods of its people?
- A. Rural Development Policy and Strategies (2003)
 - B. Sustainable Development Program to Reduce Poverty (SDPRP)
 - C. A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)
 - D. Growth and Transformation Plan (GTP)
 - E. Climate Resilient Green Economy Strategy
13. The major cause of rainfall variability, which in turn is the cause of persistent food insecurity, in Ethiopia is
- A. the El Niño Southern Oscillation (ENSO)
 - B. location of the country in the tropics
 - C. policy mismanagement
 - D. the mountainous landscape of the country
 - E. No correct answer
14. The guiding principles of Sustainable Livelihoods Approach are expected to be
- A. people-centered
 - B. holistic and dynamic
 - C. promote micro-macro links
 - D. encourage broad partnerships
 - E. All
15. What is the pivotal issue in Sustainable Livelihoods Framework?
- A. Economically well-off people
 - B. The Poor
 - C. Reduction of greenhouse gases
 - D. Environmental sustainability
 - E. All
16. *'Did you or any household member eat less preferred food because there was not enough food?'* This is a key question in
- A. Household Food Insecurity Access Scale (HFIAS)
 - B. Household Dietary Diversity Index (HDDI)
 - C. Coping Strategy Index (CSI)
 - D. Household Food Balance Model (HFBM)
 - E. No correct answer
17. In sustainable livelihoods framework the so called 'natural asset' does not include
- A. Adequate farmland
 - B. Fertile soil
 - C. Potable water
 - D. Affordable energy sources
 - E. All

18. What is the equivalent dietary calorie of a kilogram of sauce made of beef + tripe + tomato + potato + oil + chili + fenugreek + shallot + garlic + salt? (Use the annex attached to this exam)
- A. 191 kcal
 - B. 1910 kcal
 - C. 1.91 kcal
 - D. 0.91kcal
 - E. No correct answer
19. A greatly influential scholar who pioneered the idea of ensuring **access** to food, not merely increasing food supplies, should be regarded as critical component of food security was
- A. Amartya Sen
 - B. D. Maxwell
 - C. Marisol Smith
 - D. Michael Cernea
 - E. Richard Caldwell
20. In the analysis of food security of a community, analysis of environmental issues such rainfall variability and temperature can be used as indicator of
- A. Consumption/utilization pattern
 - B. Level of access to food diversity
 - C. Sustainability of food supply
 - D. Supply component of food security
 - E. No correct answer
21. What is the following is a major food security attainment intervention program in Ethiopia at present?
- A. Household Asset Building Program (HABP)
 - B. Productive Safety Net Program
 - C. Complimentary Community Investment (CCI)
 - D. Resettlement Program
 - E. All
22. Which one of the food factors doesn't affect food accessibility?
- A. Physical infrastructures such as road
 - B. Purchasing power of a household or an individual
 - C. Cultural acceptability of food
 - D. None of the above
23. In sustainable livelihoods framework the so called 'physical asset' does not include
- A. Technical and interpersonal skill
 - B. Local farming knowledge
 - C. Road and electric network
 - D. Employability and earning power
 - E. All

Part II: Short Answer Item

24. Explain how Household Food Balance Model is used in food security analysis
25. Explain briefly how you analyze the sustainability component of food security? What are the data required?
26. What is/are the most important data source/s for Household Food Insecurity Access Scale to come up with the clear food security status of a community?
27. Mention the necessary steps required in Household Food Balance Model to find out the food security status of a household or a community
28. What is/are the most important data source/s for Household Food Insecurity Access Scale to come up with the clear food security status of a community?
29. What is Food Composition Table? Where do you get it in case you need to use in your future career?
30. What is the current operational definition of food security?
31. Mention the major **outcome indicators** in the analysis of food security status of a community?
32. What are the four core components that are needed to investigate the status of food security?
33. Mention the components of physical manmade assets in sustainable livelihoods framework
34. Explain the core concept of Food Entitlement Decline Model in famine studies briefly
35. What are the crucial data to analyze the **supply component (supply indicator)** of food security status of a community?
36. Mention and sketch any livelihoods framework you know and explain it in brief?

Reference

- Degefa Tolossa (2002). Household Seasonal Food Insecurity: Causes. Social Science Research Report Series No. 26. Addis Ababa: OSREA
- Degefa Tolossa (2003). Issues of Land Tenure and Food Security: The Case of Three Communities of Munessa Woreda, South Central Ethiopia. In Norwegian Journal of Geography Vol. 57, pp. 9-19. Taylor & Francis Group
- Degefa Tolossa (2005). Rural livelihoods, poverty and food insecurity in Ethiopia. A case study at Erenssa and Garbi communities in Oromiya Zone, Amhara National Regional State. PhD Thesis 2005 Department of Geography Faculty of Social Sciences and Technology Management Norwegian University of Science and Technology, NTNU: Trondheim
- Degefa Tolossa (2007). The Role of Local Institutions and Social Capital in Household Food Security: A Case Study of Two Rural Communities in Oromiya Zone, Amhara Region. In Ethiopian Journal of the Social Sciences and Humanities. AAU
- Dessalegn R. (1991). Famine and Survival Strategies. A Case Study from Northeast Ethiopia. SIAS: Uppsala
- Haidar, M. (2009). Sustainable Livelihood Approaches: The Framework, Lessons Learnt from practice and Policy Recommendations. Expert Group Meeting on Adopting the Sustainable Livelihoods Approach for Promoting Rural Development in the ESCWA Region. December 21-22, 2009. Beirut
- Maxwell, D. and Richard Caldwell (2003). The Coping Strategies Index: A Tool for Rapidly Measuring Food Security and the Impact of Food Aid Programs in Emergencies. CARE/UNWFP, Nairobi: Eastern and Central Africa Regional Managing Unit
- Maxwell, D. and Richard Caldwell (2008). The Coping Strategies Index: A Tool for Rapid Measurement of Household Food Security and the Impact of Food Aid Programs in Humanitarian Emergencies, Field Methods Manual, 2nd Edition. Nairobi: CARE
- Maxwell, S. and Smith, M. (1992). Household Food Security: A Conceptual Review. Institute of Development Studies. Brighton: University of Sussex
- Maxwell, S. and T. Frankenberger (1992). Household Food Security: Concepts, Indicators and Measurements. A Technical Review: UNICEF/FAD
- Messay Mulugeta (2001). Rural Household Food Security Status: A Case from Kuyu Woreda, North Shewa Zone of Oromiya National Regional State. MA Thesis, Addis Ababa University: Addis Ababa
- Messay Mulugeta (2009a). Food Security Attainment Role of Urban Agriculture: The Case of Adama Town. In the Ethiopian Journal of Business and Economics, Addis Ababa University
- Messay Mulugeta (2009b). Causes of Rural Household Food Insecurity: A Case from Kuyu District, Central Ethiopia. In Journal of Sustainable Development in Africa, Volume 11, No.4. Clarion University of Pennsylvania, USA
- Messay Mulugeta (2012). Resettlement and Food Security Nexus in Ethiopia: Case Studies from

- Nonno District, Oromiya Region. PhD Thesis, AAU
- Mesfin Wolde Mariam (1986). Rural Vulnerability to Famine in Ethiopia, 1958-1977. London: International Technology Publications
- Mesfin Wolde Mariam (1991). Suffering under God's Environment: A Vertical Study of the Predicament of Peasants in North-Central Ethiopia. The African Mountains Association and Geographica Bernensia, University of Berne
- Mesfin Wolde Mariam (1999). The Chronic problem of Food Security. Can We Overcome it? In Taye's (ed.) Proceeding of the First National Workshop of NOVIB Partners Forum on Sustainable Land Use, Addis Ababa
- Save the Children (2004). Food Security, Livelihoods and HIV/AIDS: A Guide to the Linkages, Measurements and Programme Implications. Save the Children UK
- Scaramozzino, P. (2006). Measuring Vulnerability to Food Insecurity. ESA Working Paper No. 06-12. UNFAO, Agricultural and Development Economics Division (ESA), Rome
- Swindale, A. and P. Bilinsky (2006b). Household Dietary Diversity Score for Measurement of Household Food Access: Indicator Guide, Version II. Food and Nutrition Technical Assistance (FANTA) Project, Academy for Educational Development, Washington, D.C.
- USAID (1992). Definition of Food Security. Policy Determination, No. 19, Document PN-AAV-468. Washington, D.C: USIDA
- USAID (2010). An Atlas of Ethiopian Livelihoods. Addis Ababa: USAID, The Livelihoods Integration Unit

Annex 1: Composition of major foods most commonly consumed in the area

S/N	Description of major food kinds in the area	Average calorie (kcal/100 gram)
Maize	(1)cooked maize flour with salt and water (porridge), (2) cooked maize flour with milk, salt and water (porridge), (3) split boiled maize with salt (<i>qinche</i>) cooked maize flour with meager salt and water (bread), (4) cooked maize flour, fermented (<i>buddena</i>)	127.83
Sorghum	(1) Boiled red sorghum (<i>mullu</i>), (2) sorghum + emmer wheat + water (<i>buddena</i>), (3) pure sorghum + water (<i>buddena</i>), (4) sorghum + tef + water (<i>buddena</i>).	185.83
Tef	(1)tef flour + sorghum flour + birds eye chili (<i>buddena</i>), (2) pure tef flour + water (<i>buddena</i>), (3) tef flour + sorghum flour (<i>buddena</i>)	161.20
Wheat	(1)boiled wheat (<i>mullu</i>), (2) wheat flour + maize flour + water (<i>buddena</i>), (3) wheat bread, (4) wheat flour + water (<i>buddena</i>), (5) porridge	170.18
Barley	(1) roasted barely flour + salt + water (<i>basso</i>), (2) barely flour + water (<i>buddena</i>), (3) barley flour + water (<i>bread</i>), (4) whole roasted barley (<i>akawi</i>)	226.27
Potato	potato + shallot + garlic + chili + oil + ginger + salt (sauce or <i>itto</i>)	63.00
Bean	(1)split broad bean + butter + chili (sauce or <i>itto</i>), (2) split broad bean + shallot + oil + chili + garlic + ginger + salt (sauce or <i>itto</i>), (3) split broad bean + roasted pea flour + oil + chili (sauce or <i>itto</i>), (4) split broad bean + pea flour + shallot + chili + butter+ garlic + fenugreek + salt (sauce or <i>itto</i>)	75.00
Chick Pea (<i>Shumbura</i>)	(1)split chick pea + shallot chili + oil + garlic + salt (sauce or <i>itto</i>), (2) roasted chick pea + salt (<i>qollo</i>)	227.00
Lentil (Missira)	(1) split lentil + butter + shallot + chili + salt (sauce or <i>itto</i>), (2) split lentil + chili + shallot + oil + salt (sauce or <i>itto</i>)	93.50
Pea	(1) roasted pea flour + butter + chili + shallot + salt + spices (sauce or <i>itto</i>), (2) roasted pea + salt (<i>qolo</i>), (3) roasted pea flour + shallot + oil + turmeric + salt (sauce or <i>itto</i>)	138.00
Beef	(1)Minced raw beef + butter + birds eye chili (main dish or <i>kitfo</i>), (2) Beef + tripe + tomato + potato + oil + chili + fenugreek + shallot + garlic + salt (sauce or <i>itto</i>)	191.00

Source: Organized based on EHNRI/FAO (1998) food composition table and survey data