

AMBO UNIVERSITY WOLISO CAMPUS



COLLEGE OF BUSINESS AND ECONOMICS DEPARTMENT OF AGRICULTURAL ECONOMICS

HANDOUT

OF

**FOOD SECURITY AND AGRICULTURAL POLICY;
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CHAPTER ONE

INTRODUCTION

1.1. Rationale, Definition and Scope

Agriculture is the art and science of cultivating crops, raising livestock, provision of raw materials for industries and agricultural products for man's use. There are many branches of agriculture which among others include: agricultural economics, crop science, soil science, animal science, fishery, forestry and agricultural engineering. Agricultural economics involves the application of economic principles in agriculture.

Agricultural production of a country is the sum of the contributions of the individual farm units and the development of agriculture means the development of millions of individual farms. Hence, welfare of a nation depends upon accomplishments of each farm unit. The prosperity of any country depends upon the prosperity of farmers, which in turn depends upon the rational allocation of resources among various uses and adoption of improved technology. Human race depends more on farm products for their existence than anything else since food, clothing, the prime necessities are products of farming industry. Even for industrial prosperity, farming industry forms the basic infrastructure.

The relative weight of the agricultural sector in the economy varies from country to country and in general is between 3 and 40 % of the total value of production, and may count for as much as 70% of total labor.

Moreover, modern agriculture is usually an important component of the demand for industrial products and for other services. Finally, agriculture provides inputs to the food industry. When considered in its entirety, the *agribusiness* weighs for more than 30 percent even in highly industrialized economies.

1.1.1. The Rationale for Agricultural Policy

When studying agricultural policies, it is very important to understand the characteristics of the *agricultural system*. How production is organized in terms of number and size of farms, availability of infrastructures, technology level, institutional settings, marketing arrangements, availability of reliable outlets for farm's resources, etc. The reason why it is so important to understand the structure of the agricultural sector is that the same policy action can have very different effects depending upon how the production sector is organized. For example, if there are limited infrastructures for processing and transporting vegetables product, high prices for vegetables may not be sufficient in effectively stimulating vegetable production.

Two main aspects are common to many traditional agricultural systems across the World:

- Family production organization
- Size of operations

Family production organization (Peasant Organization) means that agriculture gives employment opportunities to members of the household, which may or may not have other employment opportunities available to them, and the output of the production process can be self-consumed before being destined to the market for sale.

What are relevant are the implications that household production can have for policy:

- When self-consumption is a relevant share of production, output price policies may be less effective in enhancing farmers' income
- Economy wide policies or industrial sector policies aimed at developing other sectors, such as industry or services, may have the indirect effect of releasing labor force from the farm sector and thus increase incomes for those who remain - reaction to price policies may be different by peasants when compared to fully commercial farms.

The second point is that traditional agriculture usually operates through small size farms. Dimension of the operation can be measured in several ways: amount of land, value of production or number of labor units employed. While the amount of land per farm or the value of total production per farm varies, the number of labor unit employed is quite constant over time and space, i.e., in different regions of the world and in different periods in time. Small farms mean that the agricultural sector is highly competitive. In other words, farmers usually cannot exercise market power to increase prices or profits, and this have strong consequences on how the rents generated by high consumption prices may be appropriated by the various actors in the food marketing chain.

What is Policy?

Policy is the *course of action chosen by government towards an aspect of the economy, including the goals that the government seeks to achieve, and the choice of methods to pursue those goals* (Ellis, 1991).

Policy is typically described as a principle or rule to guide decisions and achieve rational outcome(s). Policies are generally adopted by the senior governance body where as procedures would be developed and adopted by senior executive officers. The term may apply to Government, Private sector Organizations and Groups, and Individuals.

Government is the group of people in charge of running a country, and who are responsible for making policy decisions. The **State** is defined as the *whole set of public institutions responsible for the administration and enforcement of policy decision*.

Policy differs from rules or law.

While law can compel or prohibit behaviors, policy merely guides actions toward those that are most likely to achieve a desired outcome.

Policy or policy study may also refer to the process of making important decisions, including the identification of different alternatives such as programs or spending priorities, and choosing among them on the basis of the impact they will have.

Policies have **Political, Management, Financial, and Administrative Mechanisms/tools** arranged to reach explicit goals.

Public policy is an attempt by the government to address a public issue in terms of laws, regulations, decisions, and actions. Public Policies are developed by officials within institutions of government to address public issues through the political process. Public Policy-making is the process by which governments translate their political vision into programs and actions to deliver 'outcomes' desired change in the real world.

Thus policy-making is a fundamental function of any government. There are three parts to public policy-making: **Problems, Actors, and the Policy**. The problem is the issue that needs to be addressed. The actors are the individual or group that is influential in forming a plan to address the problem in question. Policy is the finalized course of action decided upon by the government

Public policy

The term public policy always refers to the actions of government and the intentions that determine those actions. Various Authors described it as follow:

- The outcome of the struggle in government over who gets what
- Whatever governments choose to do or not do.
- Political decisions for implementing programs to achieve societal goals.
- The sum of government activities, whether acting directly or through agents, as it has an influence on the life of citizens.
- What the government intends to do.

Eight Steps of policy Analysis

- ❖ Policy analysis
- ❖ Policy instrument development
- ❖ Consultation
- ❖ Coordination
- ❖ Decision
- ❖ Implementation
- ❖ Evaluation
- ❖ Impact

□ Impact:

A) The Intended effects/objectives: - The intended effects of a policy vary widely according to the context in which they are made. Broadly, policies are typically instituted to avoid some negative effect that has been noticed in the, or to seek some positive benefit.

B) The Unintended effects: - Policies frequently have side effects or unintended consequences. Because the environments that policies seek to influence or manipulate are typically complex adaptive systems (e.g. governments, societies, large companies), making a policy change can have counter intuitive results. For example, a government may make a policy decision to raise taxes, in hopes of increasing overall tax revenue.

Depending on the size of the tax increase, this may have the overall effect of reducing tax revenue by causing capital flight or by creating a rate so high that citizens are deterred from earning the money that is taxed.

Content of Policy and Its Documents

Policies are typically circulated through official written documents. Policy documents often come with the endorsement or signature of the executive powers within an organization to legitimize the policy and demonstrate that it is considered in force. Such documents often have standard formats that are particular to the organization issuing the policy. While such formats differ in form, policy documents usually contain certain standard components including:

1. A **purpose statement**, outlining why the organization is issuing the policy, and what its desired effect or outcome of the policy should be.
2. An **applicability and scope**: who the policy affects and which actions are impacted by the policy. The applicability and scope may expressly exclude **certain people, organizations, or**

actions from the policy requirements. Focus the policy on only the desired targets, and avoid unintended consequences where possible.

3. An **effective date:** This indicates when the policy comes into force. Retroactive policies are rare, but can be found.
4. A **responsibilities** section, indicating which parties and organizations are responsible for carrying out individual policy statements. Many policies may **require the establishment of some ongoing function or action.**
5. **Policy statements** indicating the specific **regulations, requirements, or modifications to organizational behavior that the policy is creating.**
6. Policy statements are extremely diverse depending on the organization and intent, and may take almost any form. *Some policies may contain additional sections, including:*
7. **Background**, indicating any reasons, history, and intent that led to the creation of the policy, which may be listed as
8. **Motivating factors.** This information is often quite valuable when policies must be evaluated or used in ambiguous situations, just as the intent of a law can be useful to a court when deciding a case that involves that law.
9. **Definitions**, providing clear and unambiguous definitions for terms and concepts found in the policy document.

1.2. Goals of Agricultural Policy

Historically the objectives of agricultural policies have evolved with society's attitude towards agriculture. The objective of producing adequate amounts of food at reasonable prices to feed the growing urban population in the industrializing society is of less relevance now in OECD (Organization for Economic co-operation and Development) countries. Today the stated objectives of agricultural policies in OECD countries are numerous, many of which have not changed over time. These include:

<i>Objectives related to farmers</i>	<i>Objectives related to consumers</i>	<i>Objectives related to society at large</i>
<ul style="list-style-type: none"> • Achieve an acceptable level of farm income (or income for farm families) • Reduce income variability (or downward fluctuations of income) • Improve competitiveness of the agricultural sector 	<ul style="list-style-type: none"> • Assure provision of safe and high quality food (at fair prices) • Assure food security • Contribute to energy security 	<ul style="list-style-type: none"> • Protect the natural environment and biodiversity • Preserve cultural landscapes • Contribute to the viability of rural areas

In general, the Goal of the Ethiopia Agriculture policy is to “*contribute to Ethiopia’s achievement of middle income status by 2020*”. The Development Objective aims to “*sustainably increase rural incomes and national food security*”. This objective embodies the concepts of producing more, selling more, nurturing the environment, eliminating hunger and protecting the vulnerable against shocks; all of which are embodied in various national policy instruments, and are expressed in terms of four main themes, each with its own Strategic Objective:

Thematic Area	Strategic objectives(SOs)
<ul style="list-style-type: none"> • Productivity and production 	<ul style="list-style-type: none"> • SO1: To achieve a sustainable increase in agricultural productivity and production.
<ul style="list-style-type: none"> • Rural commercialization 	<ul style="list-style-type: none"> • SO2: To accelerate agricultural commercialization and agro industrial development.
<ul style="list-style-type: none"> • Natural resource management 	<ul style="list-style-type: none"> • SO3: To reduce degradation and improve productivity of natural resources.
<ul style="list-style-type: none"> • Disaster Risk Management and Food Security 	<ul style="list-style-type: none"> • SO4: To achieve universal food security and protect vulnerable households from natural disasters.

CHAPTER TWO:

ANALYSIS OF FOOD PRODUCTION SYSTEMS

2. Introduction

Agriculture is the basic source of food, and farmers are the basic food producers. Farmers are remarkably diverse people, ranging from near-subsistence peasants to corporate businessmen. Nevertheless; private agriculture is a markedly homogeneous industry in the kinds of decisions that must be made day in and day out and in the kinds of uncertainties that condition those decisions.

Perhaps half the world's farm households are part of collectivized or communal agriculture, and yet these households, like their private counterparts, must still make many decisions that are not made by higher authorities. Much of farmers' daily work is done at their own initiative, and the incentives that induce them to work in a timely and careful fashion strongly influence the quality and quantity of agricultural output. In both private and collective agricultures the decision making environment is conditioned by incentives to work. Identifying the factors that influence the size and composition of agricultural output is impossible without an understanding of the decision making environment of the farm household.

2.1. Food Production Issues

Production in agriculture can be defined as the process of combining resources (labor, fertilizer, mechanical implements....) in the creation of agricultural products. Producing a ton of wheat, for example requires in addition to suitable climatic conditions, some amount of arable land, seed, fertilizer, equipment such as ploughs, and human labor.

The food production issues important to the policy analyst begin with understanding why agriculture as a sector is so different from other industries and why agriculture itself is so heterogeneous from farm to farm and even from field to field.

Five features set apart the agricultural sector from other productive sectors of an economy:

- *its large contribution to national income,*
- *the large number of participants,*
- *The peculiarities of the agricultural production function,*
- *the role of the agricultural sector as a resource reservoir, and*
- *The importance of home consumption of output.*

These features are more evident in traditional societies, and their distinctiveness tends to erode during the process of economic modernization. Indeed, perhaps the most striking characteristic of agriculture is its almost universal tendency to diminish in importance relative to other, more rapidly growing sectors of the economy.

2.2. Characteristics of Agricultural production

The only way to produce output is to combine the necessary ingredients-the inputs or factors of production-in suitable proportions so that the overall process yields the desired product. Several other features contribute to the uniqueness of agricultural production functions. The most important are:-

- **Dependence of seasonal and weather condition:** agricultural production is heavily dependent on weather condition, especially in developing countries like Ethiopia. It heavily depends on seasons because most of the crop production system is rain fed agriculture. The quality of agricultural product is subject to many conditioning factors as the agro-ecological zones of the regional states is one of the cases, and the weather, again being not the least among them. Good quality and large yields go hand in hand; in that when yields are poor, quality is frequently poor. Wide variations in quality tend to disorganize the market, because wide price complicate dragging and makes transportation difficult.
- **Time lag of agricultural products:** there is a long difference in time of commencement and getting the produce. For annual crops it may take 60days, 90days, 120days, and 150days and may be more and for perennial crops like coffee, fruit, cotton it takes more time. Because of this time difference, there may be a change in the demand for the commodity and this makes marketing difficult.
- **Nature of perishability and bulkiness:** the bulkiness character of farm products can affect marketing in such a way that it needs huge storage facility, transport facility, which in turn increases the marketing margin. The extent of perishable of farm products may be reduced by the processing function but it cannot be non perishable like manufactured products. Perishable farm products are sensitive to price fluctuation which an implication that it demands effective and efficient storage and distribution systems.
- **Control over the conditions of production:** Agriculturalists have little control of production processes and thus it is difficult to plan accurately. Farming business return compared to industry: Farming business is slow and of low return over time when compared to industrial products and this can be ascertained by analyzing payback period.
- **The law of diminishing returns:** This begins to operate at earlier stage which means the marginal productivity of the same quality of labor is more in industrial sector than in agricultural sector.

Size of land holding and low farm production: farmland holdings are small in size and production is scattered of farm products in the country which can be a problem to estimate market supply and to set market prices.

2.3. Food Production Analysis

Because of agriculture's extraordinary diversity and heterogeneity of decisions required daily from farm to farm and in the entire marketing system, the sector is unique among major productive activities. The nature of the production decisions that need to be made and the choices of individuals in the agricultural sector as they work to improve their personal or household returns from farming.

With an understanding of the features that make agriculture a unique sector, analysts are ready to address the basic production decisions farmers must make to function effectively year in and year out: what crops to produce, what combination of inputs to use to produce them, and what total output to produce. These decisions are related to each other in an economic decision making framework that provides a rationale for farmer response to changed incentives.

The decisions individually and then combines all three to relate output decisions to changes in output (or input) prices in order to construct a supply curve. The supply curve is a very convenient conceptual and empirical tool which summarizes a great deal of complicated producer decision making in a simple two-dimensional diagram. In combination with the consumer demand curve for the same commodity, the supply curve is an essential tool in economists' understanding of price formation in market economies.

2.4. Policy Analysis Matrix(PAM)

Group Assignments 1 (paper submission and presentation)

1. Discuss the basic concept of PAM and list the phases in process of constructing a PAM?
2. Define coefficients of price distortion; and list and compare major coefficients of distortion?

CHAPTER THREE

FOOD SECURITY AND NUTRITION

3.1. Understanding the Hunger and poverty

3.1.1. Meaning of Poverty

Poverty can be understood in many senses, which includes:

- Description of material needs including necessities of daily living foods, shelter, clothing, health etc). Can be understood as the deprivation or lack of essentials for a minimum standard of life.
- Description of social relationships and needs including social exclusion, dependency, problem to participate in society, information and education exclusion.
- Described as a persistent lack of income and wealth. World Bank indicator for poverty is 1 or to 2 dollar daily income indicates poverty. Disparity in income and wealth indicates poverty. The conditions of poverty are linked with a question of resource scarcity, distribution, and power. Extreme poverty is living with less than dollar and moderate poverty is living with less than 2 dollar per day, according to World Bank definition.
- It always means a reduced (or complete lack of) access to material, economic, social, political or cultural resources needed to satisfy basic needs. As a multidimensional phenomenon, poverty is defined and measured in multitude of ways.

3.1.1.1. Types of poverty

The UN, perhaps the most prominent international institution dealing with hunger and poverty, divides poverty into two general classifications: income poverty and human poverty.

a. Income Poverty: - is an understanding of poverty that is solely based on levels of monetary income. It is used by both the WB and the UN. According to the World Bank, people living on less than US\$1 per day are living in extreme poverty, and people who earn less than US\$2 a day are in moderate poverty (WB, 2008).

Income poverty is also used to determine a poverty threshold or poverty line. This is the boundary between poverty and non-poverty as determined by governments. It is based on the cost of subsistence needs in a given country so, while US\$1 a day is the international poverty line, for countries where the cost of living is higher, the poverty line is higher. In the United States, for example, the poverty line is at about US\$28 a day (UN, 2008).

b. Human Poverty: - Whereas income poverty is based on only one indicator, human poverty encompasses the multiplicity of dimensions associated with poverty. It includes deprivation on a material level, e.g. lack of proper diet, clothing, shelter, and work. It also includes social deprivation, such as denial of employment, participation in social institutions, and education.

The UN utilizes the human poverty framework as well as income poverty. The UN's Economic and Social Council has described human poverty as:

“... a denial of choices and opportunities, a violation of human dignity. It means lack of basic capacity to participate effectively in society. It means not having enough to feed and clothe a family, not having a school or clinic to go to, not having the land on which to grow one's food or a job to earn one's living, not having access to credit. It means insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living on marginal or fragile environments, without access to clean water or sanitation” (ECOSOC, 2008).

Other classification

Poverty is a relative term, a condition that can only be defined by comparing the circumstances of one group of people or an entire economy with another one. **Two types of poverty** are identified: namely, relative poverty and absolute poverty.

- a. Absolute poverty** refers to absolute deprivation of certain basic necessities of life, the most obvious being food, in order to maintain a minimum level of living. It refers to subsistence below minimum, socially acceptable living conditions, usually established based on nutritional requirements and other essential goods (e.g. per capital income under a certain arbitrarily fixed poverty line in USD per unit of time, a daily intake of less than 2150 calories/person/day, or Human Development Index).
- b. Relative poverty** compares the lowest segments of a population with upper segments, usually measured in income quintiles or deciles may be quantified by concentrating on a small number of key indicators such as the share, in national wealth or income, possessed by 20% of the poorest inhabitants of a country.

When people unable to do the normal customized experiences they are in state of relative deprivation /poverty .e.g. unable to celebrate Easter, Edialfetir, charismas or if for example in America having a car is a normal custom/experience but if an individual does not have a car, he/she is found to be in relative poverty (poverty in relation with the other).

3.1.1.2. The relationship between hunger and poverty

Hunger and poverty are powerful but familiar terms. Everyone knows what they mean, yet, they evoke different images for everyone. Even major international organizations mandated to alleviate hunger and poverty use a variety of interpretations.

From the most comprehensive perspective, hunger describes the feeling of discomfort that is the body's signal that it is in need of more food. All people experience this feeling at times but, for most people, particularly in the developed world, this phenomenon is a fleeting event that is

alleviated once the next meal is taken, causing no deep or permanent damage (WFP, 2008). When hunger or lack of food persists, however, the consequences can be devastating.

Hunger is often described in terms of its medical implications; hunger can also be viewed as representative of all the tragic and horrific circumstances that cause it. Poverty causes hunger. Resignation causes hunger. Gender discrimination causes hunger. The Hunger Project treats hunger as a symptom of the problem of poverty, dependence, and inequality.

Not every poor person is hungry, but almost all hungry people are poor. Millions live with hunger and malnourishment because they simply cannot afford to buy enough food, cannot afford nutritious foods, or cannot afford the farming supplies they need to grow enough good food of their own (Anderson, 2007). Hunger can be viewed as a dimension of extreme poverty. It is often called the most severe and critical manifestation of poverty.

Historical trends suggest that poverty declines more quickly than undernourishment (FAO, 2006). This suggests that poverty reduction usually first benefits those who are not so poor as to be hungry.

3.1.1.3. Dimensions of poverty

- **Socio cultural dimensions:-** It can be expressed in terms of lack of self – confidence, having low self –esteem, dependence proneness and alienate (isolate/separate from) of people from mainstream of social development and the like.
- **Intellectual dimension of poverty:** - can be explained by when people perceive a sense of worthlessness and believe that they know nothing. When the majority is dominated by elites and upper class people.
- **Institutional dimensions:-** Unorganized or no solidarity among people for their betterment and well-being
- **Economic deprivations:-** Economic limitations to satisfy the needs and wants of the household
- **Ecological dimensions:-** According to ecologists the cause for poverty are population growth and population pressure on natural resources. The ecologists for this type of problem proposed solutions are controlling population growth and wise utilization of resources.
- **Political economics of poverty:** - According to political economists the cause for poverty is unequal resources, wealth and power distribution or unfair/injustice resource, wealth, prestige, privilege concentration. i.e. resources used to satisfy few minorities but disregard majorities.

Solutions proposed by political economists are redistribution of wealth and power justice resource and power distribution.

3.1.1.4. Causes of rural poverty

Many factors are explained and no single explanation for the causes of poverty. Some of the factors can be explained as: natural and environmental factors- access to fertile land, irrigation, , the climate determine the type of crop, livestock to be produced; inadequate nutrition in childhood in poor nations lead to mental and physical stunt/limit; diseases that affect poor nations and the poor people in these countries give a chance to continue poverty consistently; unemployment, under employment, poor infrastructure; lack of education, lack of democracy, lack of well-paying jobs , lack of free trade etc; unplanned population growth, lack of freedom , lack of social integration; and the impact of colonization , monarchy/domination of socialism and communism-

3.1.1.5. Effects of Poverty

Poverty may have enormous effect such as increase vulnerability; hunger and starvation; increase different violence (social, political, war, etc); lack of different opportunities and increase discrimination and the like.

3.1.1.6. The Vicious Circle of Poverty

There are both internal and external factors which affect a country's development. One internal factor affecting a country's development is its economy. By economic factors one usually means factors that are essential for production, for example labor, and land resources and capital. In the model "The vicious circle of poverty" the link between lack of capital and underdevelopment is emphasized. The theory of the vicious circle of poverty can be used both at the national and individual levels, but we will concentrate on the individual level in this topic. We think that by studying poverty on the individual level one can more concretely see what causes poverty.

On the individual level, the vicious circle of poverty starts with the statement that a poor person (A) cannot pay for an adequate supply of food, and (B) thus is physically weak (C) and cannot work efficiently (D), and unable to earn much money (E), and thus is poor (A). The circle starts all over again with a situation where the person does not have money to get nutritious food (B). This process goes on and on.

There have been some criticisms raised against this model which state that the circle is inadequate as a total explanation of poverty and underdevelopment. The model does not explain why the person is poor or what the cause of their poverty is. Another thing is that the model does not consider the difference between LDC's; it assumes that all countries are on the same level of poverty. Social conditions are not taken into account either; the model implies that these societies

are static and unchanging. The vicious circle of poverty does not tell you anything about how an individual or a country can break out of the circle.

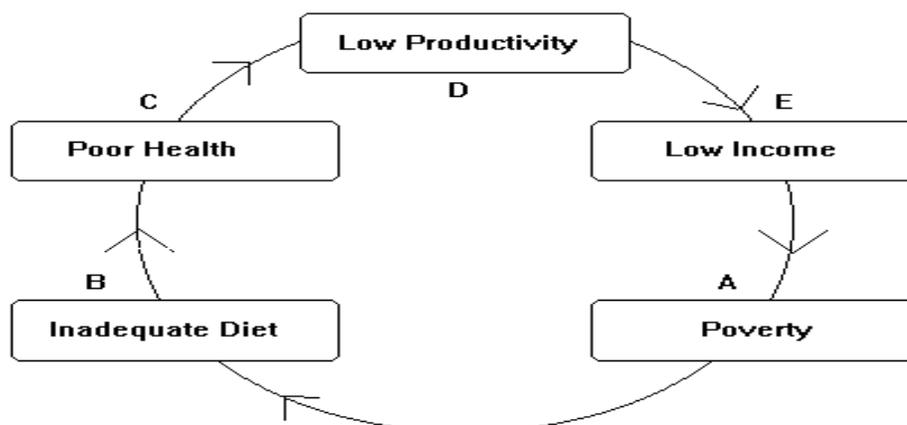


Figure 3.1: *The vicious circle of poverty - Individual level.*

Poverty Reduction

The anti-poverty strategy depends heavily on reducing poverty through the:

- **Promotion of economic growth:-** An overview of many studies show that:
 - Growth is fundamental for poverty reduction, and in principle growth as such does not affect inequality.
 - Growth accompanied by progressive **distributional change** is better than growth alone.
 - **High initial income inequality is a slow down** on poverty reduction.
 - Poverty itself is also likely to be a **barrier for poverty reduction**; and **wealth inequality seems to predict lower future growth rates.**
- **Reduction of barriers to the creation of new businesses**, or reducing barriers for existing business, as having the effect of bringing more people into the formal economy.
- **Improving the social environment and abilities of the poor**
 - Subsidized education.
 - Subsidized health care.
 - Assistance in finding employment.
 - Subsidized employment
- Encouragement of political participation

3.2. Basic Concepts of Food Security

- Food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis.

- The initial focus of attention was primarily on food supply problems - of assuring the availability and to some degree the price stability of basic foodstuffs at the international and national level.
- That supply-side, international and institutional set of concerns reflected the changing organization of the global food economy that had precipitated the crisis.

A process of international negotiation followed, leading to the World Food Conference of 1974, and a new set of institutional arrangements covering information, resources for promoting food security and forums for dialogue on policy issues.

The issues of famine, hunger and food crisis were being extensively examined. The outcome was a redefinition of food security, which recognized that the behavior of potentially vulnerable and affected people was a critical aspect. Factor in modifying views of food security was the evidence that the technical successes of the Green Revolution did not automatically and rapidly lead to dramatic reductions in poverty and levels of malnutrition.

*1974, World Food Summit as was on the **volume and stability of food supplies.***

- *“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.*

In 1983, FAO: *“Ensuring that all people at all times have both physical and economic access to the basic food that they need”*

In 1986, the highly influential World Bank report: *“Access of all people at all times to enough food for an active, healthy life”.*

Exercise what is common and what is the difference between the two recent concepts

The 1996 World Food Summit adopted a still more complex 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”.

This definition is again refined in The State of Food Insecurity 2001: *“Food security is 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 needs and food preferences for an active and healthy life”.*

Definitions of Food Security

- Over time a large number of different definitions have been proposed there are approximately 200 definitions and 450 indicators of food security. In general at least four similar definitions of food security have been used by international Organizations:
- *“Access by all people at all times to enough food for an active, healthy life.” (World Bank)*

- *"All people at all times have both physical and economic access to the basic food they need." (FAO Committee on World Food Security)*
- *"Access by all people at all times to sufficient food and nutrition for a healthy and productive life." (The Agricultural Trade Development and Assistance Act of 1990)*
- *"When all people at all times have access to sufficient food to meet their dietary needs for a productive and healthy life." (USAID, 1986)*

3.3. Pillars of food security

The WHO states that there are three pillars that determine food security: food availability, food access, and food use. The FAO adds a fourth pillar: the stability of the first three dimensions of food security over time. In 2009, the World Summit on Food Security stated that the “four pillars of food security are availability, access, utilization, and stability”.

3.3.1. Availability

Food availability relates to the food supplied through production, distribution, and exchange. Food production is determined by a variety of factors including land ownership and use; soil management; crop selection, breeding, and management; livestock breeding and management; and harvesting. Crop production can be impacted by changes in rainfall and temperatures. The use of land, water, and energy to grow food often competes with other uses, which can effect food production.

☛ **Food Availability:** *Sufficient quantities of appropriate, necessary types of food from domestic production, commercial imports or donors are **consistently available** to the individuals or are within **reasonable proximity** to them or are within their reach.*

Constraints to food availability include:

- inappropriate agricultural knowledge, technologies, and practices;
- Inappropriate economic policies, including pricing, marketing, tax and tariff policies; lack of foreign exchange; inadequate agricultural inputs; non-existent or ineffective private sector; population growth rates that offset increased production or imports; marketing and transportation systems which inhibit the cost-effective movement of food from source to need;
- Inability to predict, assess and cope with emergency situations which interrupt food supplies; natural resource, climatic, and disease constraints;
- Donor disinterest or fatigue; and political choice on the part of the government at any level.

3.3.2. Access

Food access refers to the affordability and allocation of food, as well as the preferences of individuals and households. The UN Committee on Economic, Social, and Cultural Rights noted

that the causes of hunger and malnutrition are often not a scarcity of food but an inability to access available food, usually due to poverty. Poverty can limit access to food, and can also increase how vulnerable an individual or household is to food price spikes. Access depends on whether the household has enough income to purchase food at prevailing prices or has sufficient land and other resources to grow its own food. Households with enough resources can overcome unstable harvests and local food shortages and maintain their access to food.

- ☛ Food Access: Individuals have adequate incomes or other resources to purchase or trade to obtain appropriate foods needed to maintain consumption of an adequate diet/nutrition level.

Constraints to individual food access include:

- inadequate economic growth that in general, leading to a lack of job opportunities or lack of incentives to become a productive participant in the economy;
- inadequate training and/or job skills; lack of credit or other means to exchange assets and
- Food losses associated with ineffective and inefficient harvesting, storage, processing and handling; political decisions favoring one group over another.

Accessibility to Food: Food security can be attained only when physical and economic access to food is secured.

- While physical accessibility to food will be affected by unforeseen events such as wars, export embargoes/restrictions,
- Economic accessibility will be hindered by factors such as lack of purchasing power -- poverty.
- While the factors that determine the physical accessibility to food are common to both developed and developing countries, the factors hampering economic access are especially serious in developing countries.

3.3.3. Utilization

The final pillar of food security is food utilization, which refers to the metabolism of food by individuals. Once food is obtained by a household, a variety of factors impact the quantity and quality of food that reaches members of the household. In order to achieve food security, the food ingested must be safe and must be enough to meet the physiological requirements of each individual. Food safety impacts food utilization, and can be impacted by the preparation, processing, and cooking of food in the community and household. Nutritional values of the household determine food choice. Access to healthcare is another determinant of food utilization, since the health of individuals controls how the food is metabolized. For example, intestinal parasites can take nutrients from the body and decrease food utilization. Sanitation can also decrease the occurrence and spread of diseases that can affect food utilization. Education about nutrition and food preparation can impact food utilization and improve this pillar of food security.

- ☛ **Food Utilization/Consumption:**-It is when Food is properly used; proper food processing and storage techniques are employed; adequate knowledge of nutrition and child care techniques exists and is applied; and adequate health and sanitation services exist.

Constraints to food utilization include: nutrient losses associated with food preparation; inadequate knowledge and practice of health techniques, including those related to nutrition, child care, and sanitation; and cultural practices that limit consumption of a nutritionally adequate diet by certain groups or family members.

3.3.4. Stability

Food stability refers to the ability to obtain food over time. Food security can be transitory, seasonal, or chronic. In transitory food insecurity, food may be unavailable during certain periods of time. At the food production level, natural disasters and drought result in crop failure and decreased food availability. Civil conflicts can also decrease access to food. Instability in markets resulting in food-price spikes can cause transitory food insecurity. Other factors that can temporarily cause food insecurity are loss of employment or productivity, which can be caused by illness. Seasonal food insecurity can result from the regular pattern of growing seasons in food production.

- ☛ **Stability of Food Supply:** Food should be supplied at reasonable prices in a stable manner. Food price tends to be unstable by nature due to the price inelasticity of supply and demand for major agricultural commodities.

Table 3.1: Summary of four main dimensions of food security

Availability	Access	Utilization	Stability
<ul style="list-style-type: none"> • Domestic production • Import capacity • Food stocks • Food aid 	<ul style="list-style-type: none"> • Income, purchasing power, own production • Transport and market infrastructure • Food distribution 	<ul style="list-style-type: none"> • Food safety and quality • Clean water • Health and sanitation • Care, feeding and health-seeking practices 	<ul style="list-style-type: none"> • Weather variability, seasonality • Price fluctuations • Political factors • Economic factors

3.4. Food security at different levels of analysis

3.4.1. National Level

- Food security at the national level is perhaps best described as a satisfactory balance between food demand and food supply at reasonable prices.

- This may intended to indicate a situation where there have been no major disorders in food markets, where adequate food is available and where most of the population have access to that food.
- Changes in food security can be identified over time by rising prices. These will affect the poorest first, as they spend a higher proportion of their income on food.
- There are countries where the overall supply of food is clearly inadequate to meet its citizens' needs,

3.4.2. The household level of food security

- The household level of food security is probably the most important for the analyst, insofar as the household is the basic economic unit which determines the level of consumption by the individual.
- At this level, households are identified as food secure if their entitlement for food is greater than their needs, defined as the aggregation of individual requirements

3.4.3. The individual level of food security

- At the individual level, the definition of food security is much more straightforward.
- An individual is food secure if his or her food consumption is always greater than need, as defined by physiological requirement.
- This may be affected by individual earnings and assets, or by the individual's position in the household.

The relationship between the levels of food security

- It is clear that food security at one level does not imply food security at a lower level of aggregation. A country which is food insecure will almost certainly contain groups of the population which are food secure, and many countries which are food secure at a national level will contain groups of the population who suffer from severe food insecurity.
- Food security at the household level does not imply that all members of the household are food secure.
- A food insecure household may equally contain food secure members.

3.5.Types of food insecurity

3.5.1. Chronic food insecurity

- When individuals or groups of people suffer from food insecurity all of the time, then they can be said to suffer from **chronic food insecurity**

3.5.2. Transitory food insecurity

When households face a temporary decline in access to food, it is called as **transitory food insecurity**. Transitory food insecurity may lead to chronic food insecurity, depending on its frequent occurrences. For example, a two years drought may force the households to sell their assets to survive. Then, this leads to chronic food insecurity from transitory food insecurity. Transitory food insecurity can be further divided into temporary food insecurity and cyclical or seasonal food insecurity.

- a) Temporary food insecurity occurs when sudden and unpredictable shocks, such as drought or pest attack, affect a household's entitlements. For urban households, sudden unemployment may also be a cause of transitory food insecurity.
- b) Seasonal food insecurity occurs when there is a regular pattern of inadequate access to food. This is often linked to agricultural seasons, particularly when it is difficult for households to borrow foods

Generally, Food security analysts have defined **two general types of food insecurity**:

	Chronic food insecurity	Transitory food insecurity
<i>Is...</i>	Long-term or persistent.	Short-term and temporary.
<i>Occurs When...</i>	People are unable to meet their minimum food requirements over a sustained period of time.	there is a sudden drop in the ability to produce or access enough food to maintain a good nutritional status.
<i>Results From...</i>	Extended periods of poverty, lack of assets and inadequate access to productive or financial resources.	Short-term shocks and fluctuations in food availability and access, including year-to-year variations in domestic food production, food prices and household incomes.
<i>can be overcome with...</i>	Typical long term development measures also used to address poverty, such as education or access to productive resources, such as credit. They may also need more direct access to food to enable them to raise their productive capacity.	Transitory food insecurity is relatively unpredictable and can emerge suddenly. This makes planning and programming more difficult and requires different capacities and types of intervention, including early warning capacity and safety net programmes

Model to analyze the structure of aggregate food deficits

Analyzing the overall food situation of a country enable to determine the priority areas of policy interventions to improve food security and help answer questions such as

- should food security policies focus on improving access??*
- or on increasing availability??*
- or on both sides of the food equation simultaneously???*

The overall structural food deficit of a country, defined as short-fall of domestic food production below aggregate national requirements, is often composed of two different types of sub-deficits with clearly distinct features, namely: a supply deficit and a demand deficit.

Typical food deficit scenarios and its implication for Food Security policy

Scenario 1: Supply problems arising from structural production problems.

- *A structural food deficit, defined as permanent short-fall of domestic food production below aggregate food requirements does not mean food insecurity if a country has the capacity to fill the gap through food imports. However, food insecurity in terms of in-sufficient availability occurs if, due to foreign exchange constraints, a country lacks the capacity to finance the food import requirements.*

In such situations, strategic approaches to mitigate food insecurity have to **put emphasis on increasing food availability**. Depending on the conditions, this can either be achieved by promoting domestic food production, or by measures to increase foreign exchange earnings. As a transitory measure, external assistance in terms of food aid deliveries or balance of payments support can help to overcome availability constraints.

Scenario 2: Access problems and demand deficits as a result of mass poverty

- *This scenario refers to countries where, due to wide-spread poverty and/or large income differentials, access to food is the major problem for a significant proportion of the population. Food supplies from domestic food production may, in such cases, cover or even exceed the existing market demand for food.*

Policy Measures to improve Food Security in this case, have to emphasize employment and income generation and targeted assistance to the vulnerable and food insecure population groups. The appropriate type of assistance targeting (e.g. transfers in cash or in kind of food, food relief assistance, food subsidies, food-for-work, temporary or safety-net approaches, etc.) depends on the specific local situation, the groups to be assisted, and the availability of resources.

Scenario 3: Instability of food production and / or demand

- *Food insecurity in terms of instability, caused by sudden or repeated short-falls of supply or demand, can arise from factors affecting either food production (e.g. droughts, floods, other natural disasters) or income and demand (e.g. income losses due to depressed world market prices for major export commodities, or due to war and displacement). Either production or demand short-falls would lead to a shift of the production. Major policy approaches to prevent*

or mitigate the adverse effects of production and supply instabilities on food security, particularly in areas prone to natural disasters, comprise Early Warning Systems, Food Security Reserves, Buffer Stocks, and Emergency Food Aid.

Scenario 4: Availability and Access problems as a result of conflict / crisis situation

- *Most of the armed conflicts take place in regions heavily dependent upon agriculture. Due to civil war and displacements, fields can no longer be cultivated and whole regions lie fallow. Armed conflicts destroy crops, cattle herds and land; they ruin a country's infrastructure and markets. Even worse, they destroy the ecological and social resources needed for food production. These attacks on food systems are common instruments of war. Even after conflicts are settled, certain areas cannot be accessed due to land mines and other 'dormant weapons', and it takes much time and many resources (which often farmers do not have) to re-establish the production.*

In case of open armed conflicts, populations often leave the region and settle within a short time at a different place – often in a different country due to security reasons. A sudden shortfall of demand due to displacement or a sudden demand at the new location overextends the local market. Food aid – sometimes over long periods – helps to mitigate this acute food insecurity situation. The longer such a situation lasts, the more difficult it will be to re-establish the production system back home. Interventions in such acute crisis situations therefore are crucial.

Scenario 5:

Combination of different scenarios

- *Very often, the situation in countries with Food Security problems is characterized by a combination of the different types of food deficits. The case of a combined demand and market supply/ import deficit. The implications for Food Security are particularly severe if a country with structural production and/or demand deficits is hit by an acute food crises resulting from natural or man-made disasters.*

On the other hand, there are also cases where a demand deficit, caused by mass poverty, goes hand in hand with domestic "surplus" food production. Such surpluses may be exported or stockpiled while, at the same time, the poor have no access to such "surpluses" for want of purchasing power.

In this case, targeted food assistance programs should be combined with local procurement of food commodities, in order to compensate for the insufficient effective demand of the poor population groups, and to absorb the existing market surpluses. Local purchases will also enhance domestic food production, rural incomes and contribute to an improved food. External assistance

in terms of budgetary and balance of payments support can help to finance local purchases to be used for targeted food assistance.

Current analyses, concepts and policies regarding food security

A case of Malawi

- *One country that has grown increasingly vulnerable to food insecurity in recent years is Malawi. A recent assessment concluded that there has been “a gradual but steady deterioration of agricultural productivity per capita while eroding livelihoods. With the majority of the population depending on subsistence agriculture as their primary food source, much of the population is vulnerable to acute food insecurity from economic, climatic or other shocks”. A key assumption of a recent investigation into food security is that a large proportion of individuals and households there have less food security and more limited coping strategies now than they did in 1990. (Incidentally, a second assumption highlighted the fact that this situation stems more from policy choices made between 1980 and 2000 than from exogenous factors such as drought).*

3.6.Food Consumption Patterns

Food consumption surveys, also known as food intake surveys or dietary surveys are used to estimate food consumption patterns at the national, regional, household and individual level. The *Food Consumption Score* (FCS) combines the elements of ‘quantity’ and ‘quality’ of food. It measures food diversity (the types of food consumed), food frequency (the number of days each food group is consumed) and the relative nutritional importance of different food groups.

The FCS uses standardized and calibrated thresholds that divide households into three groups: *poor food consumption, borderline food consumption and acceptable food consumption*. In analysis, those households with poor and borderline food consumption are combined to describe households with less than acceptable food consumption.

Individual food consumption patterns are affected by a number of cultural, geographical and socio-economic factors and can be used to quantify consumption patterns from the household level to the national level.

In Ethiopia, the capacity for dietary diversification efforts to improve the nutritional status of the population is limited in the short term due to issues related to availability, access and behaviours.

The burden of under nutrition is very high in both peri-urban and rural areas. Nationally, more than one in four households (26%) consume less than acceptable diets: 10% of households have poor food consumption and 17% borderline.

The Ethiopian diet chiefly consists of cereals (maize, sorghum, teff), tubers and root crops (ensete, potatoes, sweet potatoes), pulses and oil seeds. The national staple 'injera' is typically made from teff, which is grown in the highlands, or sometimes from millet or sorghum. Despite a large livestock population, dairy and meat supply is limited, with consumption of these products especially low in rural areas, except in nomadic pastoralist districts (Somali and Afar) where milk is a major component of the diet, consumed 4-5 days a week compared with 1.5 days on average nationally. Staples are usually accompanied by vegetables (5 days a week) except in Addis Ababa, Gambela, Somali and Afar where they are consumed far less frequently. Fruit consumption is low across all districts.

3.7. Food and Nutrition Security

According to a currently accepted definition (FAO, 2000), '**Food Security**' is achieved when it is ensured that "all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life". Food is here defined as any substance that people eat and drink to maintain life and growth. As a result, safe and clean water is an essential part of food commodities.

The **nutrition** focus adds the aspects of caring practices and health services & healthy environments to this definition and concept. This aims at what is more precisely called '**Nutrition Security**', which can be defined as adequate nutritional status in terms of protein, energy, vitamins, and minerals for all household members at all times.

"Food and nutrition security is achieved, if adequate food (quantity, quality, safety, socio-cultural acceptability) is available and accessible for and satisfactorily used and utilized by all individuals at all times to live a healthy and active life."

This definition combines food and nutrition security and emphasizes several aspects, i.e., '**Availability**', '**Accessibility**', and '**Use and Utilization**' of food. The inclusion of the use and utilization aspect underscores the fact that '**Nutrition Security**' is more than '**Food Security**.'

3.8. Food Safety and Food Security

Food safety is an umbrella term that encompasses many facets of handling, preparation and storage of food to prevent illness and injury. Included under the umbrella are chemical, microphysical and microbiological aspects of food safety. A priority of food chemical quality is control of **allergens** (are substances that, in some people, the immune system recognizes as "foreign" or "dangerous" but cause no response for most people) which can be life threatening to some people that are highly sensitive. Other chemical properties of food such as vitamin and mineral content are also important and affect the overall quality of the food but are not as significant in terms of food safety. To prevent injury, the absence of foreign microphysical particles is crucial. Microphysical

particles such as glass and metal can be hazardous and cause serious injury to consumers.

Pathogenic (Causing, or being capable of causing, disease) bacteria, viruses and toxins produced by microorganisms are all possible contaminants of food and impact food safety.

Foods can become contaminated at any point along the production process. Thus, control programs such as Hazard Analysis and Critical Control Points (**HACCP**) have been designed and implemented in the industry to reduce food safety risks. Because the relative numbers of illness are due to microorganisms rather than foreign objects or allergens, HACCP plans typically focus on pathogen reduction and prevention (Gorham and Zurek 2006). However, control of microorganisms, allergens and foreign objects are considered individually rather than as a whole. Some materials are considered unavoidable and thus tolerance levels have been set.

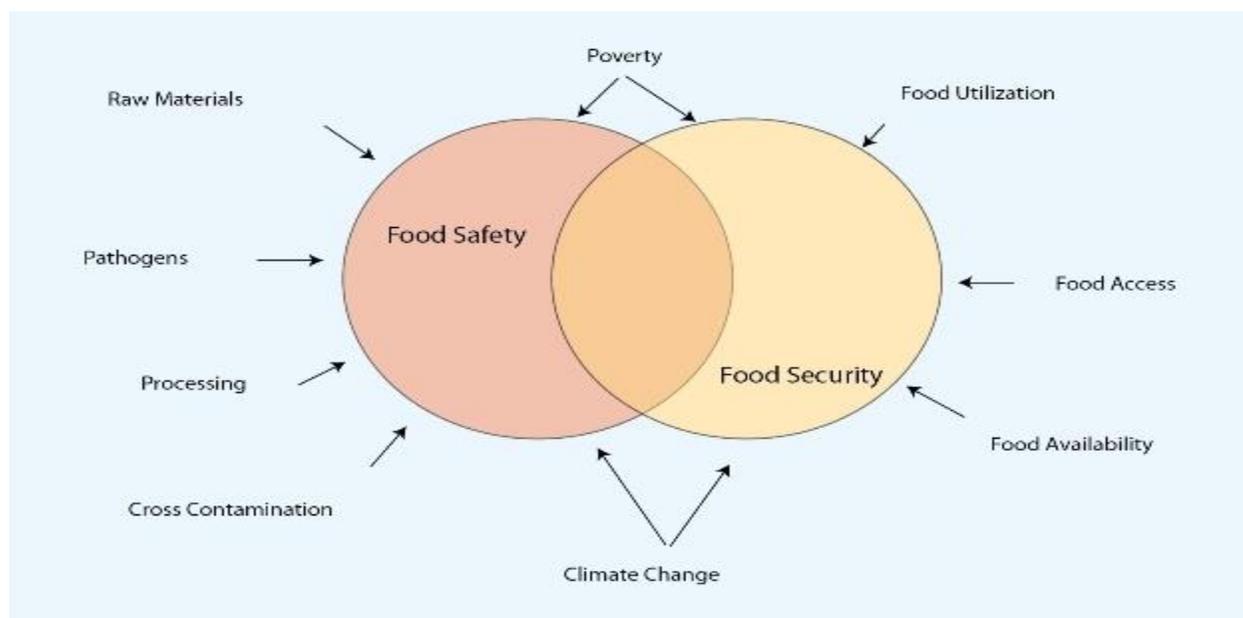


Figure 3.2: Interrelationship of food safety and food security.

Most of the undernourished people in the world live in developing countries, 2/3 of them in just seven countries (Bangladesh, China, the Congo, Ethiopia, India, Indonesia and Pakistan) and over 40 percent live in China and India alone. Sub-Saharan Africa has the highest proportion of undernourished with 30% of the population being in this category. Food security is affected by climate change, dependence on fossil fuels, and the loss of biodiversity and use of food crops for biofuels, among many other factors

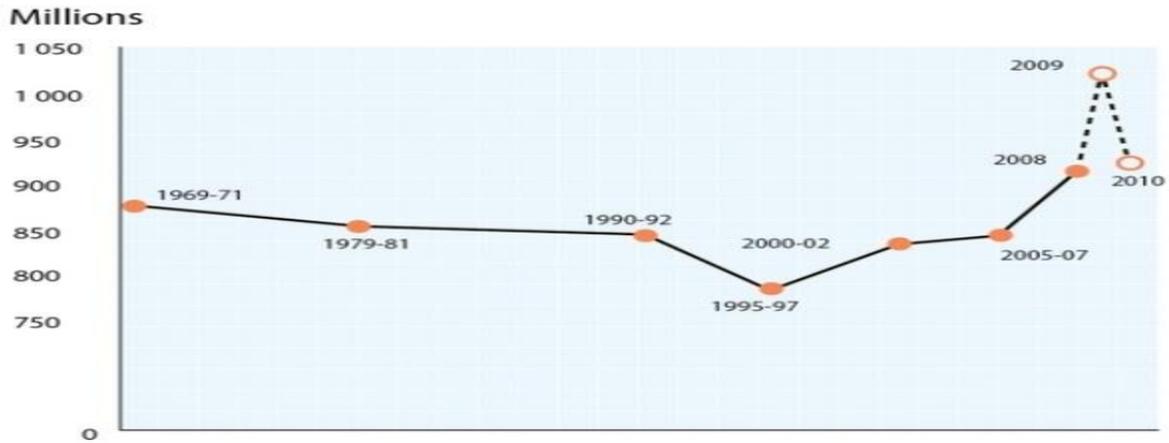


Figure 3.3: Number of people, worldwide who lack food security 1969-2010 (FAO 2011).

3.9. The Food Balance Sheet

A food balance sheet presents a comprehensive picture of the pattern of a country's food supply during a specified reference period. The food balance sheet shows for each food item i.e. each primary commodity availability for human consumption which corresponds to the sources of supply and its utilization. The total quantity of foodstuffs produced in a country added to the total quantity imported and adjusted to any change in stocks that may have occurred since the beginning of the reference period gives the supply available during that period. On the utilization side a distinction is made between the quantities exported, fed to livestock used for seed, losses during storage and transportation, and food supplies available for human consumption. The per capita supply of each such food item available for human consumption is then obtained by dividing the respective quantity by the related data on the population actually partaking in it. Data on per capita food supplies are expressed in terms of quantity and by applying appropriate food composition factors for all primary and processed products also in terms of dietary energy value, protein and fat content.

Generally, Food quality & safety is measured across five indicators which includes; Diet diversification, Nutritional standards, Micronutrient availability, Protein quality, Food safety

CHAPTER FOUR

MARKETING FUNCTIONS, MARKETS AND FOOD PRICE FORMATION

4.1. Marketing Issues

Marketing is a total system of business activities designed to plan, price, promote and distribute want-satisfying products to target markets and to achieve organizational objectives. *Market* refers to a collection of buyers and sellers who transact over a particular product or product class as a housing market, stock market, financial market, etc. The food marketing sector transforms the raw agricultural commodities produced by farmers into the foods purchased and eaten by consumers. *The costs of storage, transportation, and processing-the marketing transformations are an integral component of food price formation.* The term "marketing functions" is used to refer specifically to the commodity transformations in time, space, and form that are associated with storage, transportation, and processing. Marketing encompasses so many activities that are at the core of all food systems, understanding the full range of marketing issues is a central task for food policy analysis.

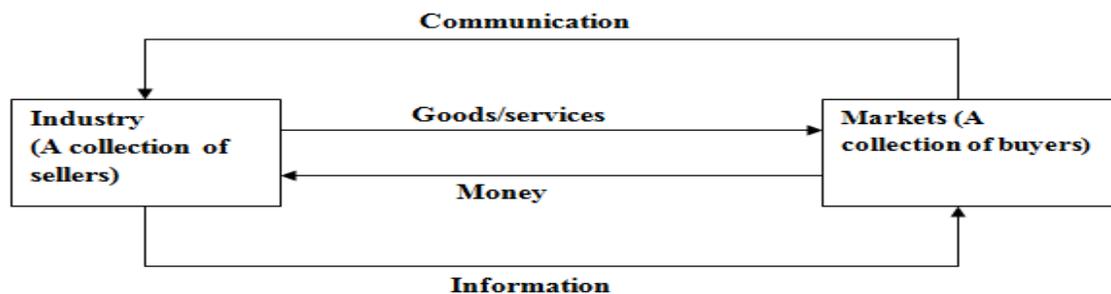


Figure 4.1 A simple marketing system

Just as with food production, marketing is a means to an end. The objectives a society can reasonably hold for its marketing sector are analogous to the four basic objectives for the food system as a whole: *efficient economic growth, a more equal distribution of incomes, nutritional well-being, and food security.*

4.2. Price and Income policy

Price analysis is an indirect approach for determining market efficiency. Efficient marketing systems are characterized by a high degree of price integration closely correlated movements of connected series of price over space, form, and time. In an efficient market economy, price integration is caused by arbitrage. In these economies market participants respond when they notice that prices in two markets are sufficiently different that profits can be made by buying in the low-price market and selling in the high-price market. If competitive conditions prevail and

enough merchants respond in this way, the abnormal price difference disappears because supplies in the low-price market decline, placing upward pressure on prices, and supplies in the high-price market increase, causing prices to fall.

However, expectations about future price levels are an important ingredient in price formation. Price analysis of marketing margins involves statistical comparisons of pairs of price series that should be connected by the marketing system, and it applies to interrelated markets (over space), degrees of product processing (in form), and periods of storage (over time).

4.3.Domestic Markets and Price Policy

"Food prices are too high." "Crop prices are too low." Both complaints are heard in virtually all countries. All consumers would like food prices to be lower, to take a smaller portion of their family budgets. All farmers would like their crop prices to be higher, to provide them greater return for their effort and investment. The tension between the two, the food price dilemma, inevitably focuses the attention of consumers, producers, and policymakers alike on the margin between farm prices and consumer prices. All these groups point to the middleman and say "marketing costs are too high."

Several factors common to all food marketing systems lead to this impression, whether it is true or not. First, the marketing system is the narrow point in an hourglass-shaped distribution pattern which first concentrates the crop sales from millions of farmers and then disperses the food to millions of consumers in the time, place, and form in which they want it. Politically, millions of farmers or millions of consumers are forces to be reckoned with; the hundreds or thousands of middlemen usually are not.

Second, operating as a middleman is a very risky business even in developed countries where information is excellent. Many middlemen are quite rich, in sharp contrast to the poverty of both their supplying farmers and consuming households. It is a very short step between the observation of rich middlemen and the conclusion of high-cost, inefficient, and monopolistic marketing. The conclusion, however, is wrong as a logical necessity, and, in a broad array of developing countries, wrong as a matter of fact.

A third reason, marketing margins are high for developing countries because the real costs of marketing are high. But roads and communications are poor, when interest rates and storage losses

are high, and when processing facilities are poorly maintained and operated because of difficulties in obtaining working capital or spare parts.

The purpose of marketing analysis is to locate these areas of high costs, to identify any inefficiencies and monopoly profits if they exist, and to propose policy initiatives and investments that will lower the real costs of marketing. Governments can attempt to set all the important prices to reflect social priorities, or, through a variety of trade and subsidy policies, governments can affect the level of the overall price structure. This analysis is relevant to socialist economies as well as to market economies because allocating resources efficiently and generating and utilizing information are important to both kinds of societies.

4.4.Trade Restrictions

A trade restriction can be applied to either the price or the quantity of the commodity to reduce the amount traded internationally and to drive a wedge/block between the world price and the domestic price. For imports, the trade policy imposes either a per unit tariff (import tax) or a quantitative restriction (import quota) to limit the quantity imported and raise the domestic price above the world price. Likewise, trade policy for exports limits the quantity exported through imposition of either a per unit export tax or an export quota, and the result is to cause the domestic price to be lower than the world price.

If, for example, a trade policy restricts imports of textiles through imposition of a tariff, producers of textiles gain because the domestic price rises above the world price. In response to higher local textile prices, production expands, consumption declines, and the quantity of imports is reduced. Since the domestic price is raised, consumers transfer income to producers and to the government budget because of the duties paid on imports.

To increase both the production and consumption of food would require maintaining a dual price policy involving subsidies to both producers and consumers.

	Policies benefiting producers	Policies benefiting consumers
Subsidy policies	Producer subsidies on importable	Consumer subsidies on importables
	Producer subsidies on exportable	Consumer subsidies on exportable
Trade policies	Restrictions on imports	Restrictions on exports

4.5. Food Stamps and Rationing

Food stamps have been widely used in the United States as the main government program for reducing hunger among poor people. Nearly 20 million people received a net value of over \$6,000 million in food stamps in 1981. Despite the theoretical efficiency of food stamps in providing food subsidies targeted precisely to those most in need, the actual implementation record so far is quite mixed.

Where serious attempts are made to limit food stamps to the most impoverished/poor households, all the problems of implementing an honest and efficient means test arise. Many relatively well-off households slip into the system, many of the most destitute fall outside, and the bureaucratic costs become very large. Food stamp programs as an efficient targeting mechanism for food subsidies can probably be used effectively only in middle-income countries with a skilled civil service and accurate statistical records on at least the urban population. For poorer countries and in the rural areas of even the middle-income countries food stamps are not likely to be effective.

4.6. Poor people's Foods

The poor in most societies eat different foods from those consumed by middle- and upper-income groups. Poor people's foods tend to be root crops (cassava, sweet potatoes, and Irish potatoes) or coarse grains (corn, sorghum, millet, and others). The preferred staple in most societies is either rice or wheat although corn is preferred in some African and Latin American countries. In rice cultures wheat is sometimes regarded as an inferior good. Such sharp contrasts in food consumption patterns by income class within a country are not caused by differences in taste but by economic necessity. If only the poor choose to eat the subsidized inferior staples, only the poor capture the subsidy.

At the same time, many of the inferior foods are produced by very poor farmers on marginal lands at considerable distance from major urban centers. Marketing subsidies that raise the returns to these farmers while lowering the costs to the consumers may work simultaneously on both dimensions of poverty. Simply forcing down prices, however, would have a devastating impact on the incomes and welfare of some of the poorest of the rural poor.

The implementation of food subsidies for poor consumers through the regular channels of the marketing system is the most efficient way to protect food intake of the poor when price incentives to farmers are improved.

CHAPTER FIVE

POLICY ANALYSIS OF THE PRODUCT MARKETS

5.1.Improving the Marketing System

The new-institutional view of agricultural policy: Markets are economic institutions that permit trade. At the beginning of the economic development of a country, government action may be needed to favor the *emergence* of markets that do not exist. For example, a fundamental precondition for a market to exist is that property rights are well defined and enforced. It is obvious to consider that, in order to trade something; the property right must be clearly defined.

Even where markets are well developed, however, there may be the need for government intervention to achieve the efficiency predicted by the classical theory of general equilibrium. The presence of *transaction costs*, in fact, may prevent some of the potential beneficial trades from taking place. That of *transaction costs* is a very general concept that may be used to define a very broad set of phenomena, including asymmetric information, strategic behavior, geographical distances and lack of infrastructure.

Transaction costs are *all costs that must be paid when operating a transaction*. They include transportation, administrative costs, information gathering, etc. According to the transaction cost interpretation of market failures, the role of the government should be that of *reducing or eliminating transaction costs*. **Institutions** are *sets of rules and agreements that regulate economic activity*.

Agricultural policies too may have distributional effects. Low food prices, for example, have a larger beneficial impact on poor consumers than on rich consumers. Unfortunately, there are trades-offs between efficiency and equity objectives: by keeping agricultural prices at a low level, for example, investments are discouraged, and the growth of the sector in the long run is compromised.

5.2.Price ceiling and Floor

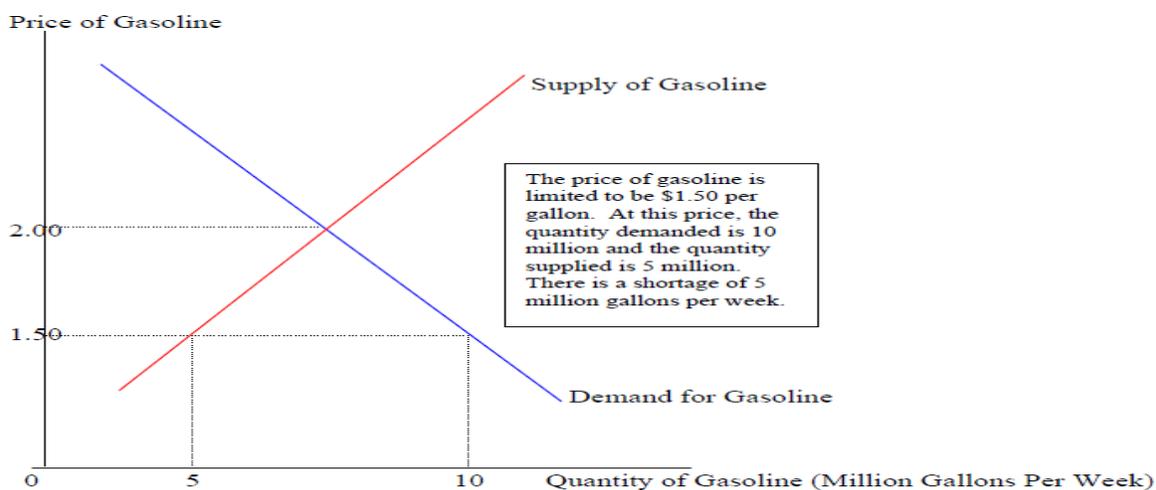
5.2.1. Price Ceilings

One interference with the market process is called a price ceiling. ***A price ceiling occurs when the price is artificially held below the equilibrium price and is not allowed to rise.*** There are many examples of price ceilings. Most price ceilings involve the government in some way. For example, in many cities, there are **rent controls**. This means that the maximum rent that can be charged is set by a governmental agency. This rent is usually allowed to rise a certain percent each year to keep up with inflation. However, the rent is below the equilibrium rent.

During World War II, there were price ceilings on most products. Occasionally, price ceilings are imposed by the seller. In the graph below, assume that the equilibrium price is \$2.00 per gallon of gasoline. The maximum price is set by the government at \$1.50 per gallon. At the price of \$1.50 per gallon, the quantity demanded is 10 million gallons per week and the quantity supplied is 5 million gallons per week. There is a *shortage* (5 million gallons per week). **Price ceilings lead to shortages.**

Shortages create a rationing problem --- somehow, it must be determined who will get the product and who will not. There are many ways to resolve the shortage problem.

1. The most common way is **first-come, first-served**. Shortages are typically associated with long lines. In the case of apartments, there are perhaps hundreds of people looking for each apartment that is vacant. In the case of gasoline and sports teams, people stand in line for hours or even days to be able to buy.
2. Another common way to resolve the problem of shortages is for the **sellers to choose** which buyers they will sell to. Landlords often rent to preferred renters. These are likely to be married couples, probably over 30, and without children or pets. Gasoline station owners sell gasoline to those customers who regularly have their cars repaired at that station. The Chargers and Padres assure that season ticket buyers get tickets for the playoffs.
3. A third way to resolve the problem of shortages is by **lottery**. Those who pick the right numbers are allowed to buy. The Chargers used a system such as this to determine who would be able to buy some of the tickets for their Super Bowl game.
4. And fourth ways to resolve the problem of shortages is to have the government make **the choice** of buyer. In 1979, the California government decided that those with license plates that ended in an odd number could buy gasoline only on odd days of the month.



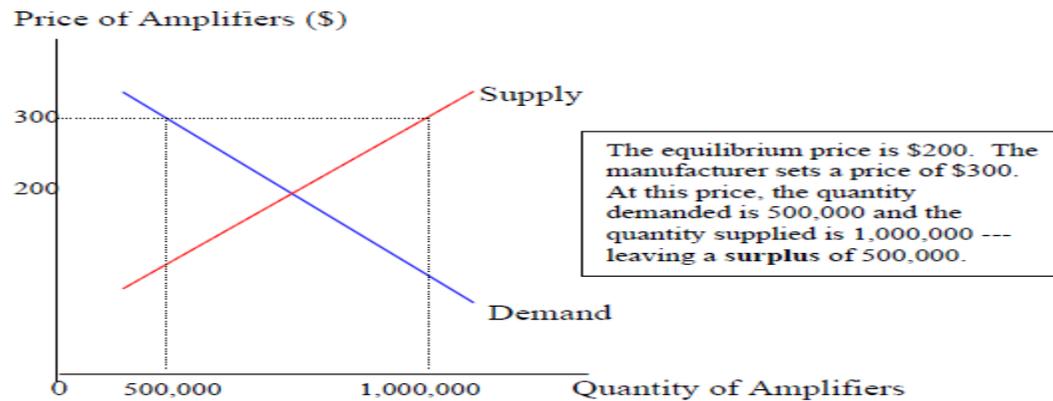
Price ceilings provide a gain for buyers and a loss for sellers. Sellers would like to avoid the loss if they can. One way to do so is called a *black market*. In this case, the sellers illegally raise the price and hope to get away with it. So, for example, tickets to popular events are sold by scalpers at high prices. While there are many other examples, black markets are not smart; it is just too easy to be caught. It is also not smart because of the existence of gray markets. A *gray market* is a way of getting around the price ceiling without actually doing anything illegal. There are two forms of gray market.

- ® *One form of gray market involves charging for goods or services that were formerly provided free.* If the rent cannot be raised on the apartment, there is nothing preventing the landlord from charging for the parking space, charging for use of the elevator, charging for gardening and cleaning services, forcing the tenants to pay for electricity and water, and so forth.
- ® *The second form of gray market is to provide less service for the same price.* The apartment owner would not repair, clean, paint, nor otherwise maintain the apartment building.

5.2.2. Price Floors

A price floor exists when the price is artificially held above the equilibrium price and is not allowed to fall. There are many examples of price floors. In some cases, private businesses maintain the price floor while, in other cases, it is the government that maintains the price floor. One price floor that was maintained by the private businesses used to be called “**fair trade**”. In the case of fair trade, the manufacturer would set a price for the product that was above the equilibrium price. The manufacturer then told the retail stores that the price could not be lowered or the store would not be able to sell any of the manufacturer's products. From the late 1930s through the 1980s, this practice was legal. It is still occasionally conducted. Many familiar items were fair traded --- your textbook, televisions, radios, stereo sets, washing machines, automobiles, gasoline, liquor, and so forth.

In the graph below, the equilibrium price for stereo amplifiers is assumed to be \$200. The floor on the price set by the manufacturer is \$300. The price is not allowed to fall below \$300. At this floor price, the quantity demanded is 500,000 and the quantity supplied is 1,000,000. As you can see, there is a **surplus** of 500,000 amplifiers. **Price floors always generate surpluses.** All who wish to buy at the floor price (\$300) will be able to do so. The problem is: "what to do with the surpluses"?



There were many ways to solve the problem of surpluses. **Occasionally, a store simply broke the manufacturer's policy.** The store lowered the price to get rid of the surplus. The manufacturer had threatened that the store would be prohibited from selling the manufacturer's product; the store either believed that the manufacturer would not carry-out the threat or did not care. Washing machine stores used to virtually give away the dryer. Gas stations gave away glasses, knives, and Blue Chip Stamps. A second solution was to simply **absorb the surplus.** Your textbook producers would have a surplus of textbooks. At the end of each edition, the books would be returned to the publisher and the paper was recycled. A third solution was to **change the name of the product** in order to reduce the price. Surplus gasoline was sold to independent dealers who would sell it as Thrifty, 7-11, or Discount Gas at a lower price. Surplus liquor was bottled with a different label and sold as Slim Price, or Yellow Wrap at a lower price. Surplus washing machines and refrigerators were sold, for example, to Sears and marketed as Kenmore at a lower price. When automobiles were fair-traded, the dealers could not lower the price; however, they would give a trade-in value that was much greater than the trade-in car was actually worth. *The main point here is that, even if someone interferes with the market process, there are powerful forces to return to equilibrium.*

5.3. Agricultural Risks and Crop Insurance

Alternative policy implications of risk-aversion may be grouped broadly in line with the categories of hazard they are designed to overcome as follows:

1. Natural hazards

- **Irrigation:** is not only just for risk avoidance strategy; it also has a major impact on output via its complementarities with multiple cropping, increased fertilizer use, and improved seed. Large-scale irrigation schemes are unlikely to attract private investment and hence better to involve in smaller scales manageable by households.

- **Crop insurance:-** Establishing insurance scheme to save the times of disaster Growing crops like sweet potato
- **Resistant Varieties:-** Plant breeding or selection designed for resistant to pests, diseases, and drought and for stability of yields.

3. *Market risks*

- **Price stabilization:** - State intervention ranging in setting minimum floor prices for key strategic staples to fixed producer prices across a wide range of crops. Where crop yields remain highly variable, price stabilization may serve to exacerbate rather than reduce income variance.
- **Marketing information:-** Where risk-aversion is attributed to inadequate information [about prices, about new seeds, etc] then information provision is considered a useful component of risk policy.
- **Diffusion of information** to peasants can take many forms through extension work, training and visit programs, radio, leaflets, and farmer education in schools
- **Provision of credit** for consumption is a means of reducing risk-aversion in farm households subject to wide seasonal variations in income.
- **Credit** has also been considered relevant on the production side, for overcoming resistance to the adoption of new technologies.

However, various drought risk management strategies are exist, those includes;

® **Household strategies (Micro-level)** Households which specialize in farming are more vulnerable to the effects of weather variability compared to those which diversify. However, diversification may result in lower yields and in lower income and assets, which could have been used for mitigating risks through financial markets, such as insurance.

Hence, developing drought-tolerant varieties and investing in small-scale irrigation should also be key risk management strategies for low income countries in their medium- and long-term plans.

® **Community-based arrangements (Meso-level)** Sharecropping is a traditional risk sharing arrangement in developing agrarian economies. Social capital and networks provide various community-based risk management arrangements, but, although effective in protecting against risks affecting households in isolation, they are not effective in protecting households from correlated risks, unless households have established networks outside of their community or regions.

® **External assistance (Macro-level);-**Low income countries may sometimes require external assistance to manage large scale disaster risks. An important challenge with this kind of risk

management strategy is the time lag between a disaster and the arrival of donor funds and the required aid to save lives at risk. In widespread disaster situations, timing of interventions will have substantial impact on averting famine conditions as well as the ability of vulnerable households to withstand future shocks. In many cases, humanitarian assistance arrives late in the season and after people has already lost their most valuable assets such as livestock, or has a diminished health/nutritional status to a level that will undermine future recovery and resilience. In some cases, donor support may be limited either due to aid fatigue or the internal political conditions and insecurity in the affected country that may affect delivery of relief and development assistance.

CHAPTER SIX

MACRO FOOD POLICY

6.1. Food aid

Food aid is providing food and related assistance to tackle hunger, either in emergency situations, or to help with deeper, longer term hunger alleviation and achieve food security.

Food Assistance Programs (Also food-related transfers): any intervention to address hunger and under nutrition (e.g., food stamps, food subsidies, food price stabilization, etc.).

Food Aid International concessional flows in the form of food or of cash to purchase food in support of food assistance programs. The key distinction they make is: *international sourcing* of concessional resources *tied to the provision of food*, whether by a donor or to a recipient.

The major players in the food aid game

Food aid constituted over 20% of global aid flows in the 1960s, but is now less than 5%. Yet, it is still important because of the prevalence of world hunger and the increase in food emergencies in the past decade. The decline of food aid, as well as the way in which it is delivered and used, are therefore of importance. As Barrett and Maxwell also summarized, food aid started off in the 1950s with the US and together with Canada accounted for over 90% of global food aid until the 1970s when the United Nations World Food Programme (WFP) became a major player.

Mousseau summarizes that the WFP is currently the largest humanitarian organization in the world. It handles 99% of multilateral food aid, generally in partnership with NGOs and government institutions, which are in charge of food distributions in recipient countries. In 2004, WFP food aid reached 89 million people worldwide. In-kind food aid from the US is the WFP's main resource.

A relatively small number of relief NGOs specialize in food-related emergency relief and are predominantly US-based, such as World Vision, CARE, and Catholic Relief Service (CRS). These three account for about 80% of the gross revenues (over \$1.5 billion in 2001) of the top 8 such relief agencies.

Types of food aid

Mousseau's summarizes 3 types of food aid:

- 1. Program Food Aid:** - Is a form of in-kind aid whereby food is grown in the donor country for distribution or sale abroad. This is typically a government to government transfer. Rather than being free food as such, recipient countries typically purchase the food with money borrowed at lower than market interest rates.
- 2. Relief or Emergency Food Aid:** - This is typically for emergency situations, such in cases of war, natural disasters, etc, where food is distributed for free.
- 3. Project Food Aid:** - Food aid delivered as part of a specific project related to promoting agricultural or economic development, nutrition and food security, such as food for work and school feeding programs.

Relief aid used to be a minor form of aid until the 1990s when it shifted to being the dominant factor, signifying both the increase in emergencies, and the end of the Cold War where food aid as a political tool (to aid the donor) seemed to be less important.

As with relief aid, project food aid is typically distributed by the World Food Programme (WFP), Non-governmental organizations (NGOs), and occasionally by government institutions.

Problems with food aid

Some core problems that Mousseau identifies with international food aid are that;

- It is a donor-driven system
- It promotes domestic interests of donor countries
- It is a foreign policy tool
- International institutions are driven by exporters
- Development is not necessarily the objective

Benefits of Relief Aid

Emergency, or relief aid, has become increasingly streamlined amongst relief organizations. They are better at responding to emergency situations quickly and manage to reach and save countless lives.

Relief aid results in more aid going directly to the relief organizations, rather than via governments who could divert its use. This direct delivery can help with rapid responses.

Problems with Relief Aid

Inefficiencies in execution

While relief aid goals seem worthy and have certainly saved many lives, some general problems have been identified. For example,

- Some delivery of emergency food aid can be too late
- Some deliveries require a mobilization of effort and media attention before anything happens
- Often aid does not cover the need
- Food is not always needed; sometimes cash may be better

Mousseau details some examples in Niger, Ethiopia and Malawi where such delays have caused more deaths or greatly increased the cost of providing the aid. The shorter time frame in which the aid is needed also means that many responses often go unfulfilled.

According to the WFP, “the number of food emergencies has been rising over the past two decades in Niger, Malawi and Ethiopia from an average of 15 per year during the 1980s to more than 30 per year since the turn of the millennium.” These countries face recurrent or permanent food deficits that they find increasingly difficult to meet, and have to deal with a growing population that is chronically hungry.

6.2. Stabilizing Agricultural Markets

6.2.1. Buffer Stocks

The prices of agricultural products such as wheat, cotton, cocoa, tea and coffee tend to **fluctuate** more than prices of manufactured products and services. This is largely due to the **volatility in the market supply** of agricultural products coupled with the fact that demand and supply are **price inelastic**. One way to smooth out the fluctuations in prices is to operate price support schemes through the use of **buffer stocks**.

Buffer stock schemes seek to **stabilize the market price** of agricultural products by buying up supplies of the product when harvests are plentiful and selling stocks of the product onto the market when supplies are low.

Advantages of a successful buffer-stock scheme:

1. Stable prices help maintain farmers' incomes and improve the incentive to grow legal crops
2. Stability enables capital investment in agriculture needed to lift agricultural productivity
3. Farming has positive externalities it helps to sustain rural communities
4. Stable prices prevent excess prices for consumers – helping consumer welfare

Problems with buffer stock schemes

In theory buffer stock schemes should be profit making, since they buy up stocks of the product when the price is low and sell them onto the market when the price is high. However, they do not often work well in practice. Clearly, perishable items cannot be stored for long periods of time and can therefore be immediately ruled out of buffer stock schemes. Other problems are:

1. **Cost of buying excess supply** can cause a buffer stock scheme to run out of cash
2. A guaranteed minimum price might cause **over-production and rising surpluses** which has economic and environmental costs
3. Setting up a buffer stock scheme also requires a **significant amount of startup capital**, since money is needed to buy up the product when prices are low.
4. There are also high administrative and storage costs to be considered.

The success of a buffer stock scheme however ultimately depends on the ability of those managing a scheme to correctly estimate the average price of the product over a period of time. This estimate is the scheme's target price and obviously determines the maximum and minimum price boundaries.

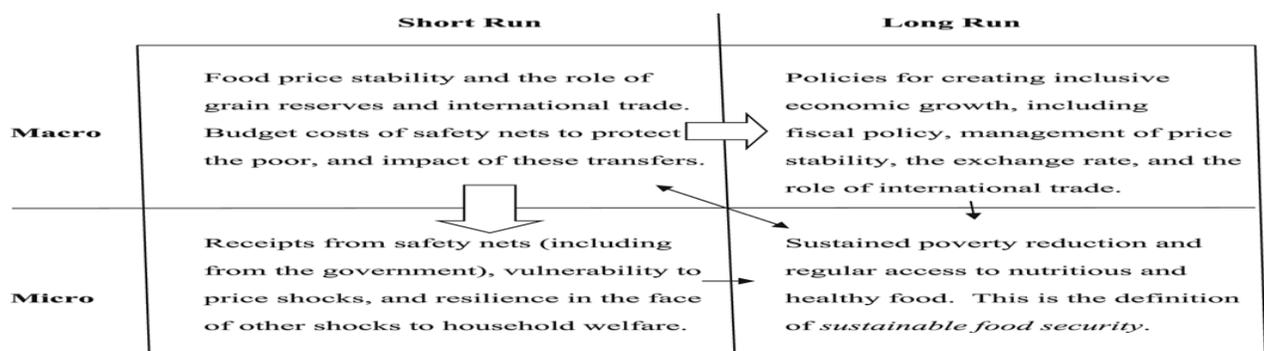
6.3.Increasing Domestic Flexibility

Amartya Sen's findings indicate that endemic hunger is not a problem of supply but of distribution, and which can be solved by an *entitlement approach* (Sen, 2009). Just by considering the many policy tools which directly or indirectly impact on food security, one is reminded of the complexity of the challenge facing especially a poor net food-importing country like Ethiopia.

Indeed, each of the following instruments can both increase and decrease national food security, depending on the way they are handled, financed, and harmonized:

- **Agricultural and food production:** research & development/extension, vocational and management training, investment and production finance/credits, insurance schemes for production, commercial and investment risks, input subsidies, (small) farmer support, land use legislation and administrative practice, and infrastructure support.
- **Social policies** like (staple) food price guarantees and food aid in various forms.
- **Trade instruments** such as tariffs, safeguards, quotas, market interventions, price risk insurance, commodity exchanges, futures and other hedge instruments, export restrictions, various forms of food reserves, and trade and export promotion.
- **Investment policies** e.g. multilateral trade and bilateral investment agreements, foreign investment legislation and agreements including fiscal incentives, concessional finance, investor protection and *stabilization clauses* (“regulatory chill”), with biofuels and biotech technologies demanding special regulatory attention.

Food Security, Structural Transformation, Markets and Government Policy



Source: Timmer 2014

CHAPTER SEVEN: TYPES OF AGRICULTURAL POLICIES

7.1. Price policy

Economic activities are guided by **prices**. For this reason, one of the most important ways of trying and affect economic activity is through the modification of prices and the policies that aim at modifying producer incentives can be described as *price policies*. The result of any firm is measured by profits, which depends on both outputs’ and inputs’ prices.

Thus, what really matters for the incentives for farmers are the *relative trend of output versus input prices*, rather than the absolute value of output and input prices. In other words, only if *output prices rise proportionally more than inputs’ prices*, there is an increase in profits.

7.2. Input policy

There are also options for the government to affect the incentives to producers through input price and availability. One most obvious way of supporting producers is by granting subsidies on input prices. Payments for variable inputs such as fertilizers, pesticides, other chemicals, but also water and electricity are what constitute a farm's costs. By subsidizing the price of inputs, the farm's cost will be reduced. In the history of agricultural development, the availability of new and improved varieties has been one of the successful elements that allowed productivity growth. However, to switch to the new variety, usually requires a complete *change of technology*, such as for example, to abandon the tradition of utilizing self produced seed and to buy commercial, certified seed.

Small farmers might have problems in adopting the new technology, and the provision of subsidized inputs may be required to provide incentives for the adoption. For example, farmers may be risk averse, and would underestimate the benefits of the new technology. Also, the adoption of new technology may need to be accompanied by improved knowledge on input use and cropping technology.

For all of these reasons, input subsidies and input distribution on the part of the government are best designed within a more general *input package* transfer, which includes seeds, fertilizers, pesticides and the technical knowledge on the best agricultural practice. One other aspect of subsidized inputs is related to the potential distortion they induce in resource allocation. By providing cheap pesticides, an incentive is created, for example, to substitute chemicals for labor.

7.3. Agricultural and rural credit policies

Farmers need funds for three major reasons:

- ☛ **Working capital.** Given that the production is obtained only by the end of season, while costs are sustained throughout all of the season, farmers need to anticipate money.
- ☛ **Consumption smoothing.** Agricultural production is highly variable from year to year, whereas consumption needs to be kept constant. Farmers may need to borrow money during bad years and save money during good years.
- ☛ **Investments.** When an investment is realized, its cost is paid at the beginning, while the benefits are only obtained later on during many years.

Within the economy, high productivity could be achieved by allowing a *market for credit* that is to allow for the possibility for capitals to be moved from those who have saved it to those who are in need of it.

Markets for credit: - In any economy, a market for credit always exists, either formally or informally. Those who have availability of excess capitals may find ways of lending it to those who are in need, in exchange for compensation. Usually, the formal credit is only possible when there is personal knowledge and reciprocal trust between the private lender and the borrower.

For this reason, usually we witness the appearance of *financial intermediaries*, whose function is to allow for supply of and demand for credit to meet. In modern economies the role of financial intermediation is played by the *banking system*.

New objectives and instruments of credit policy;-

- ❖ The first objective should be that of *local saving mobilization*.
- ❖ The second objective should be that of reducing the margin of the financial intermediary, especially by reducing transaction costs.

Experiences of successful rural credit initiatives: - There are now several experiences of successful strategies for setting viable rural finance systems. Saving mobilization has proven a powerful mechanism for inducing the development of viable credit systems. One fruitful way this has been done is through group lending schemes, where responsibility for loan repayment is given to a group of farmers rather than to the individual farmer.

This has been done, for example in the Grameen Bank in Bangladesh, which has proven to be a very successful institution. Groups are formed according to predetermined criteria reflecting homogeneity of interests (in the Grameen Bank case, for example only farms with less than 0.5 acres of land could enter in a group); usually they are small groups so that everyone knows what the others are doing (only five members in the Grameen Bank case); and they take collective responsibility for ensuring that loans are properly utilized and repayments are made. The penalty for default is that the entire group is prevented from further borrowing, thus powerful social pressure ensures compliance with group responsibilities. The Grameen bank in Bangladesh is the first of a series of micro-finance initiatives that are initiatives primarily intended to serve the needs of small rural borrowers.

The evidence is, today, if the savings are effectively mobilized, and transaction costs are reduced or eliminated, capital can become a much more effective factor of production of what has been in the past for the agricultural sector. Despite their success, however, Micro-finance initiatives cannot be the answer to the entire agricultural sector needs for credit. Medium size farms are usually in the position of being too large to access to microfinance and too small to have access to formal credit.

More needs to be done in terms of reforming the traditional, formal banking system to make it more effective in providing credit to agriculture in many developing countries. Authorization of *rural banks*, that is commercial banks specifically devoted to the needs of the agricultural sector, are a viable initiative, provided the main problems of agricultural credit are assessed. The main problems are related to:

- ☛ *covariant risk* in yields, that makes it very likely that all of the farmers in one area will have need for credit at the same time, or that they can have difficulties in repaying loans is a generalized drought or other widespread reduction in production occurs;
- ☛ *Limited local availability of savings*, which need to be provided enough incentive to be mobilized;
- ☛ *Lack of flexibility* in matching the needs of farmers with the appropriate interest rate and terms for repayments.
- ☛ Lack of *initial investment funds* to set up the rural bank.

Possible actions to solve these and other problems affecting rural banks include (Norton, 2002):

- ❖ To extend the user base to wide geographical area, so that covariant risk is reduced;
- ❖ adopt techniques for selecting clients and creating incentives for repayment similar to those adopted by MFI, such as group lending, or linking access to credit to the past repayment record;
- ❖ develop modern information systems so that loan officers can follow up with clients if loan payments are late by even one day;
- ❖ provide incentives to loan officers for good client selection and loan recovery rates;
- ❖ provide a multiplicity of financial services to the rural population;
- ❖ use donor funds or other external funds to start up the financial company

7.4.Mechanization policy

Agricultural Mechanization embraces the use of tools, implements and machines for agricultural land development, crop production, harvesting, and preparation for storage, storage, and on-farm processing. It includes three main power sources: human, animal, and mechanical. The manufacture, distribution, repair, maintenance, management and utilization of agricultural tools, implements and machines is covered under this discipline with regard as to how to supply mechanization inputs to the farmer in an efficient and effective manner.

Hand tool technology is the simplest and most basic level of agricultural mechanization: the use of tools and simple implements using human muscle as the main power source.

Draught animal technology refers to implements and machines utilizing animal muscle as the main power source.

Mechanical power technology is the highest technology level in agricultural mechanization. It embraces all agricultural machinery which obtains its main power from other sources other than muscular power. Within each of these three levels of mechanization technology, degrees of sophistication must be distinguished. For example, a simple locally made single-axle tractor without differential gears and gear box, a single axle tractor with gearbox and power-take-off, and a 70 kW tractor, are all mechanical power technology, but with a large difference in sophistication and capability.

Terminology such as "intermediate technology" and "selective mechanization" are either inappropriate or have no practical meaning. The term **appropriate mechanization** may be used, and refers to the level of mechanization and how it is used for a specific situation. "Appropriateness" can only be determined after carefully considering the technical, economic and social characteristics of each situation. No generalizations can be made concerning the appropriateness of a particular type of mechanization or particular agricultural tool, implement or machine for rural development. For the purpose of simplicity, the term **mechanization** in this section will be used to cover all levels of mechanization technology and their degrees of sophistication.

The **purpose** of an **agricultural mechanization strategy (AMS)** is to create a policy, institutional and market environment in which farmers and other end-users have the choice of farm power and equipment suited to their needs within a sustainable delivery and support system.

"Farmers and others" refer to all end-users of farm power, tools and equipment, such as small family operated farms, commercial farm businesses, farmers' organizations, irrigation groups, contractors, government operators and primary agricultural produce processors (FAO 1997). In this context, three principal purposes of mechanization may be summarized as follows:

- **Increase in labor productivity.** The introduction of machinery to substitute for labor ("laborsaving") is a common phenomenon associated with the release of labor for employment in other sectors of the economy or to facilitate cultivation of a larger area with the same labor force.
- **Increase in land productivity.** The purpose of mechanization is here to produce more from the existing land. Machinery is a complementary input, required to achieve higher land productivity, for example, through the introduction of pump sets, or faster turn-around-times to achieve higher cropping intensity. In labor surplus economies, net labor displacement or replacement should be avoided.

• **Decrease in cost of Production.** Introduction of a machine may lower production costs or offset increased costs of draft animals or labor. Usually, in various degrees, a combination of the three objectives will be achieved. Additional benefits to the user may be associated with a reduction in the drudgery of farm work, greater leisure, or reduction of risk. These are subjective benefits and difficult to translate into cash. Frequently mechanization increases an individual's workload, can be hazardous to health and may reduce the social interactions associated with farm work.

7.5.Land reform policy

Objectives of Land policy

It aims to achieve security and distribution of land rights, land use and land management, and access to land, including the forms of tenure under which it is held. A land-use policy is essentially an expression of the government's perception of the direction to be taken on major issues related to the proposed allocation of the national land resources over a fixed period of time. To achieve the policy objective of sustainable production and conservation of natural resources, governments should pursue strategies which actively promote forms of land use which are both attractive to the people and sustainable in terms of their impacts on land resources. It is a decision making process that "facilitates the allocation of land to the uses that provide the greatest sustainable benefits".

Land use planning is even more crucial today, with growing pressures from climate change, and urbanization.

a. Land tenure

Land tenure is an **institution, i.e., rules** defined to regulate how property rights to land are to be allocated within societies. They define **how access is granted to rights to use, control, and transfer land, as well as associated responsibilities** and restraints. In simple terms, land tenure systems determine **who can use what resources for how long, and under what conditions.** Land tenure **relationships may be well-defined and enforceable in a formal court of law** or through **customary structures in a community.** Alternatively, they may be relatively poorly defined with ambiguities **open to exploitation.**

Land tenure is categorized as:

- ☛ **Private:** the assignment of rights to a private party who may be an individual, a married couple, a group of people, or a corporate body such as a commercial entity or non-profit organization.
- ☛ **Communal:** a right of commons may exist within a community where each member has a right to use independently the holdings of the community. For example, members of a community may have the right to graze cattle on a common pasture.

- ☛ **Open access:** specific rights are not assigned to anyone and no-one can be excluded. it may include rangelands, forests, etc, where there may be free access to the resources for all. (An important difference between open access and communal systems is that under communal system non-members of the community are excluded from using the common areas.)
- ☛ **State:** property rights are assigned to some authority in the public sector. For example, in some countries, forest lands may fall under the mandate of the state, whether at a central or decentralized level of government.

Property rights can be classified as:

- **Use rights: rights to use the land** for grazing, growing subsistence crops, gathering forestry products, etc.
- **Control rights: rights to make decisions** how the land should be used including deciding what crops should be planted, and to benefit financially from the sale of crops, etc.
- **Transfer rights: right to sell or mortgage the land**, to convey the land to others through intra community reallocations, to transmit the land to success or through **inheritance**, and to reallocate use and control rights.

Formal or “informal tenure rights

In broad terms, land tenure rights are often classified according to whether they are —**formal**” or “**informal**.

Formal property rights may be regarded as those that are explicitly acknowledged by the state and which may be protected using legal means. Informal property rights are those that lack official recognition and protection. In some cases, informal property rights are illegal, i.e., held in direct violation of the law.

b. Land administration

Land administration is —the regulatory framework, institutional arrangements, systems and processes that encompass the determination, allocation, administration and information concerning land. There are three components of land administration: land rights registration and management; land use allocation and management; and land valuation and taxation. Land administration is the way in which the rules of land tenure are applied and made operational. Land administration, whether formal or informal, comprises an extensive range of systems and processes to administer:

- **Land rights:** the allocation of rights in land; the delimitation of boundaries of parcels for which the rights are allocated; the transfer from one party to another through sale, lease, loan, gift or inheritance; and the settlement of doubts and disputes regarding rights and parcel boundaries.

- **land-use regulation:** land-use planning and enforcement and the settlement of land use conflicts
- **Land valuation and taxation:** the gathering of revenues through forms of land valuation and taxation, and the settlement of land valuation and taxation disputes.

Land administration is implemented through *sets of procedures* to manage information on rights and their protection, such as:

- Procedures for land rights.
- Procedures for land use regulation
- Procedures for land valuation and taxation include

c. Access to land

Access to land for the rural poor is often based on custom. Customary rights to land in indigenous societies, for example, are usually created following their traditions and through the ways in which community leaders assign land use rights to the community members. These rights of access may have their origin in the use of the land over a long period. They are often rights developed by ancestral occupation and by the use of land by ancestral societies. In such cases, it is through the act of original clearance of the land and settlement by ancestors that rights are claimed. People also use a wide range of strategies to gain access to land. These include:

1. Purchase, often using capital accumulated
2. Formal access to vacant or abandoned land and to bring it into productive use.
3. Leasing, or gaining access to land by paying rent to the owner.
4. Sharecropping, or gaining access to land in return for paying the owner a percentage of the production.
5. Inheritance or gaining access to land as an heir.
6. Occupying illegally on land.

d. Tenure security

Security of tenure is the **certainty that a person's rights to land** will be **recognized** by others and protected in cases of specific challenges. People with insecure tenure **face the risk that their rights to land will be threatened** by competing claims, and even lost as a result of eviction. Without security of tenure, households are significantly **weakened** in their **ability to secure sufficient food and to enjoy sustainable rural livelihoods**. For example, a person may have a right to use a parcel of land for a few years growing season, and if that person is safe from eviction during the season, the tenure is secure. The tenure is insecure **for long-term investments even if it is secure for short-term ones**.

7.6. Agricultural Research policy

During the 1950's and 60's national and international concerns over food shortages, particularly in Asia, led to large investments in public agricultural research organizations. The unambiguous agenda was to raise agricultural productivity as a means of increasing the aggregate food supply as a way of reducing hunger and the poverty associated with it.

With this agenda in mind, centralized public sector scientific research institutes were created to solve the generic problem of increasing the biological potential of important food crops. The institutional set up contained international agricultural research centers and, at the national level, sets of commodity and or disciplinary based research institutes. The task of transferring technology packages to farmers was given to the institutionally separate extension system. This approach resulted in the development and spread of input responsive, high yielding cereal varieties and the consequent "green revolution" phenomenon.

The new agendas:

Poverty: The green revolution, despite its success in increasing food production, demonstrated the difficulty of using advances in agricultural productivity to address complex social phenomena such as poverty. It brought to attention the fact that the poor did not always have the resources to benefit directly from new productivity enhancing technology. Moreover when the poor had land-based resources, research often had difficulty responding to their specific technological needs, usually in the less favorable production environments. For the landless and urban poor the need for better entitlements to food (through employment for example) restrained the benefits that would have otherwise arisen through cheaper and more abundant food (Lipton and Longhurst, 1989).

Environment: Concerns were also emerging as to the environmental consequences of an intensive agricultural development strategy reliant on chemical inputs and heavy consumption of water. As a consequence the environment is now a mainstream agenda for agriculture and development policy generally.

Stakeholder participation: There was also a growing realization that the hierarchical institutional arrangements typical of most centralized, public agricultural research organizations make it difficult to achieve a client focus in research. Farmer participatory research arose as a way of addressing this issue. Sustained advocacy during the 1990's placed the participatory "paradigm" in the mainstream. However the institutional context of many public research organizations has restricted the development of truly participatory and client focused working practices.

Public vs. Private: In the last decade economic liberalization along with shifts in globally held perceptions concerning the role of the State in society have emerged as a major new policy agenda. This has made institutional concerns of fundamental importance, focusing attention on the efficiency and proper role of the public sector in areas such as agricultural research. - Private sector agricultural research has also grown as a result of the opportunities that economic and trade liberalization are now presenting for private investments in agro-industries such as seed production, horticultural exports and so forth. Private research has also been encouraged by improved intellectual property protection regimes and technical advances associated with biotechnology.

CHAPTER EIGHT

AGRICULTURAL DEVELOPMENT POLICY IN ETHIOPIA

8.1.Overview of the Rural development and Agricultural Policy

Ethiopia has a consistent set of policies and strategies for agriculture and rural development that reflect the importance of the sector in the nation's development aspirations. The policy framework

is based on the concept of ADLI, which has been the central pillar of Ethiopia's development vision since the 1990s. ADLI is an economy and society wide strategy in which agriculture has a central role.

8.1.1. The Rural Development Policy and Strategies (RDPS , 2003)

Key elements of the RDPS include:

1. Rural and agricultural centered development as a means of:

- a. Ensuring rapid economic growth;
- b. Enhancing benefits to the people;
- c. Eliminating food aid dependency; and
- d. Promoting the development of a market-oriented economy.

It also sets out five basic directions for agricultural development:

- ❖ *The labor intensive strategy*, which sees the mobilization of underutilized and unproductive rural labor as a key driver of growth, rather than capital-intensive approaches
- ❖ *Proper utilization of agricultural land*, by guaranteeing the availability of land to people who seek to make a living out of land, and assisting them to utilize it productively on a sustainable basis through irrigation, multi-cropping and diversified production;
- ❖ *A "foot on the ground"*, which envisages moving ahead in a stepwise manner building on experiences and indigenous knowledge at the same time as exploring opportunities for deploying new technologies in conjunction with human resource development
- ❖ *Differentiation according to agro-ecological zones*, which recognizes that Ethiopia's enormous agro-ecological diversity calls for different approaches to agricultural development in different parts of the country. This also provides the opportunity for risk management through diversification; and
- ❖ *An integrated development path* among various activities and products in agriculture, as well as linking these to education, health and infrastructure development

8.1.2. PASDEP (2005/06 to 2009/10);

PASDEP also give high priority to agriculture and rural development. PASDEP included six fundamental agricultural development strategies:

1. Adequately strengthened human resources capacity and their effective utilization;
2. Ensuring prudent allocation and use of land;
3. Adaptation of development compatible with different agro-ecological zones;
4. Specialization, diversification and commercialization of agricultural production;
5. Integrating development activities with other sectors; and
6. Establishment of effective agricultural marketing systems

8.1.3. The New GTP: -

A number of the PASDEP principles have been rolled forward into the new FYGTP, which will correspond with the first five years of the Policy Implementation Framework. Smallholder agriculture, however, is expected to remain the principal source of agricultural growth. Increasing male and female smallholder productivity and production is the main thrust of the plan and will be achieved in three major ways.

- ☛ First, *by scaling up best practices* used by leading farmers whose productivity is 2-3 times higher than the average.
- ☛ Second, *by improving the management of natural resources* with a focus on improving water utilization and the expansion of irrigation.
- ☛ Third, *by encouraging farmers to change from low value to high value products* in order to increase their cash incomes, with complementary investments in market and infrastructure development.

These initiatives will be supported by farmer training and measures to improve access to agricultural inputs and product markets using cooperatives as the delivery mechanism. The FYGTP envisages differentiation among the three main agro-ecological zones.

- In the **adequate moisture areas** the focus will be on *scaling up best production and marketing practices* to increase productivity by supplying agricultural inputs and providing training to development agents (DAs) and farmers.
 - Particular attention will be given to *soil fertility management using organic and inorganic fertilizers; improved rain fed agronomic methods; irrigation and improved water use efficiency; production and distribution of seed; natural resource conservation; livestock and forage development; capacity building, and strengthening research-extension-farmer linkages.*
- In the **moisture deficit areas** the focus will be on *soil and water conservation, and watershed management using labor-based methods.*
 - Particular attention will be given to: *underground and surface water utilization; development of small ruminants, poultry and apiculture; and productive safety net initiatives to underpin food security for vulnerable households.*
- In the **pastoral areas** the **FYGTP will focus** on *livestock development; water for people and livestock; forage development; irrigation; improving the livestock marketing system; and strengthening implementation capacity*

8.1.4. Comprehensive Africa Agriculture Development Program (CAADP)

CAADP is a framework which African Governments agreed on and created to accelerate growth and eliminate poverty and hunger on the continent.

Ethiopia is in the process of institutionalizing the CAADP as its agriculture sector policy, strategy and program formulating framework, of which this PIF forms a part. CAADP embraces the principle of agriculture-led growth as a main strategy to achieve MDG1 of halving poverty and hunger by 2015. On this basis it sets principles and targets to guide national sector strategies in:

- I. Pursuit of a 6 per cent average annual growth rate for the agricultural sector;
- II. Allocation of at least 10 per cent of the national budget to the agricultural sector;
- III. Exploitation of regional complementarities and cooperation to boost growth;
- IV. The principles of policy efficiency, dialogue, review, and accountability;
- V. The principles of partnerships and alliances to include farmers, agribusiness, and civil society communities; and
- VI. Assigning responsibility for program implementation to individual countries; that of coordination to designated Regional Economic Communities; and that of facilitation to the NPCA Secretariat.

Ethiopia has surpassed the CAADP targets of 6% average annual agricultural growth rate and 10 per cent national public expenditure share for the agricultural sector for successive years before the launch of CAADP. This does not mean, however, that poverty and hunger are tackled to the level of expectation of the Government. Indeed the Government is committed to allocate more resources to tackle these problems.

The Ethiopia CAADP Study, and the CAADP Compact signed by Government and the key development partners, describes a strategy, consistent with the RDPS and PASDEP, which inform future planning frameworks including the FYGTP. The four pillars of the Ethiopia CAADP strategy which are embodied in the CAADP Compact are:

1. Pillar I: Improve natural resources management and utilization;

Heavy population pressure and inappropriate agricultural techniques combine to threaten the sustainability of the agro-ecosystem and its capacity to support food production, rural commercialization and poverty reduction.

The Ethiopian government is already addressing the issue through the Sustainable Land Management Project (SLMP). It has requested donor support for a major land administration and land use planning initiative (ELALUDEP). Under the SLMP only 55 watersheds out of the 177 that have been prioritized in food secure areas are financed and there are many more watersheds in

food insecure areas also in urgent need of attention. Additional watershed rehabilitation works in ongoing through the PSNP in food insecure *woredas*.

2. Pillar II: Improve rural infrastructure, market access and trade capacities;

Improved infrastructure and market access are important elements of such an enabling environment, but rural commercial development also requires access to financial services, development of commercial supply chains for agricultural inputs, market information services, telecommunications, product standards and quality assurance systems, post harvest storage and transport facilities, etc.

3. Pillar III: Enhance food security and improve disaster risk management;

Ethiopian rural households are highly vulnerable to shocks which can quickly reverse years of progress in building household assets. In particular, exposure to climatic risks is high in light of the low capacity to store water and irrigate, and the low level of household savings, which are principally in the form of livestock that often have to be sold and depressed prices during times of hardship. Improving the capacity to manage risk is critical in overcoming poverty and food insecurity. During the last three years (2007-08 to 2009-10) about 66 per cent of the total budget of MoARD goes to DRMFS and continued high levels of expenditure are committed over the next four years under funding from the PSNP.

4. Pillar IV: Improve the agricultural research and extension system.

Agricultural research and extension institutions are critical in the implementation of agricultural policies and strategies at both federal and regional levels. Ethiopia has invested heavily in development of the National Agricultural Research System (NARS), including the Ethiopian Institute for Agricultural Research (EIAR), Regional Agricultural Research Institutes (RARIs) and affiliates of the CGIAR. New research centers have been established for previously uncovered agro-ecologies, particularly in lowland, pastoral and agro-pastoral areas.

Core institutions are the Agricultural Technical and Vocational Education and Training (ATVET) centers and the Farmer Training Centers (FTCs). These institutions are currently functioning to produce, as well as use, the human capital that is embodied in Development Agents (DAs).

- ATVETs train DAs and the DAs in turn use FTCs to train farmers.
- At present the extension system deploys four DAs at each *kebele*: with responsibility for *crop production, livestock production, natural resource management*, and *home economics*.
- In addition, there is *one animal health assistant* per three *kebeles*, and *one cooperative expert* serving five *kebeles*.

- Furthermore, as part of the system, **Research-Extension-Farmer Linkage Councils** have been established to oversee technology generation, packaging and dissemination.
- These Councils are structured from *woreda* up to the federal level.
- ❖ **Seed multiplication and the distribution of improved genetics is a critical element of the drive for improved productivity.**
- In the public sector the major institutions are the Ethiopian Seed Enterprise (ESE), and the recently established Regional Seed Enterprises (RSEs).
- On the livestock side there is the National Artificial Insemination Centre, which is currently operating through four regional sub-branches.
- In the private sector there are Pioneer Hybrid and other small seed enterprises.

8.2. Food Security policy of Ethiopia

Food and nutrition policy goals include *security of food supply, safe and good quality food and adequate and healthy diets for everyone*. To a large degree, these goals are consistent with the broader objectives for SARD. Measures to improve the quality and safety of food have direct beneficial effects on health and nutritional status.

Widespread nutrition and diet education, delivered through formal schooling and the mass media, can promote good eating habits and healthy lifestyles, so reducing the incidence of nutrition-related diseases. Especially important for SARD are improvements in child nutrition to make sure that children grow up able to fulfill useful roles in the society of the future

Food Security Program of Ethiopia

Food Security Program (FSP) is a special arrangement, which focuses on addressing vulnerability, which exists in different parts of the country. Records shows that before the past 2- 3 decades in a worst year's millions of people in the drought prone areas of the country could face food shortage, which are either chronic or transitory in nature. Since 2003, the program has been under implementation in 319 chronically food insecure woredas /districts from 8 region, with chronically food insecure households - > 6.88 million beneficiaries

Targeting is the process by which chronically food insecure households are selected to participate in public works or receive direct support. A combination of administrative and community targeting systems will be applied in the selection of eligible participants

Criteria for selection of beneficiaries:-

- HH that have faced continuous food shortage (3 month of food gap or more)
- HH that have suddenly become more vulnerable as a result of a severe loss of assets and are unable to support themselves

Core objectives of the Food Security Programme

- ☛ Enabling chronically food insecure people attain food security
- ☛ Significantly improve the food security situation of the transitory food insecure people

Key interventions

The key interventions designed to attain household food security are:-

- Building the household asset through on- farm activities
- Undertaking a resettlement program
- Implementing a Safety Net Program which bridge food gaps while building community
- Introducing non –farm activities

Component of the FSP

1. Resettlement program: - The main objective of the resettlement program is to enable chronically food insecure households attain food security through improved access to land.

- ☛ **Intervention for the resettlement program:** Resettlement is purely on voluntary basis. Each settler household is guaranteed assistance of packages that includes provision of fertile farm lands, seed, oxen, hand tools, and food ration for the first eight months. The settlers are also provided access to essential infrastructures (clean water, health post, feeder roads).

2. Productive Safety Net program (PSNP): PSNP is intended to serve as a dual purpose of helping bridge the income gap of the CFI-HH.

❖ **Interventions for PSNP:-** PSNP has two components

- Labor intensive public works
- The able bodied will be engaged in public works for which they are paid a minimum amount while the labor poor are paid same amount free. A key feature of the Safety net program is its household focus. It is linked with the HABP and PSNP beneficiaries are getting priority in getting access to the HABP resources.
- Direct Support

Non Agricultural Income interventions:- As the food insecure households are resource poor, living in drought – prone and degraded areas, focusing on crop and livestock production alone may not entirely solve the problem of food insecurity. For these areas income diversification through non – agricultural activities is important. To this effect, the food security program concedes complementary income sources in non – farm activities

3. HABP (Household Asset Building Program):- HABP is one of the four components of the Food Security Program, and it contributes to achievement of the FSP’s expected Outcome of “improved food security status of male and female members of food insecure households living

in chronically food insecure woreda's. The major causes of food insecurity in the country are the depletion of household assets. Multiple causes can be cited in this regard

- Drought has been the major factor causing loss of crop and livestock
- Repeated food shortages have also forced many HH to sell their assets to address their immediate needs
- Building sustainable household assets is therefore the major solution to the problem of food insecurity

Interventions for HABP

- Introduction of appropriate technologies which helped improved production and productivity
 - Preparation and dissemination of different menu of technological packages through the extension service
 - Packages includes :-
 - provision of improved inputs to increase livestock's and crop production,
 - Moisture conservation and utilization,
 - Natural resource development,
 - Trainings
 - Support for additional income generating activities , and
 - Provision of market information
- 4. CCI (Complimentary Community Investment):-** CCI is an intervention which is designed to create community assets and complement household investment through creating an enabling environment.

Monitoring & Evaluation system of Ethiopia food security policy

The M&E system includes: -

- regular monitoring reports prepared at woreda level, consolidated at Regional and then sent to Federal levels;
- real-time data collected by the Regional and Federal Information Centres
- Bi –Annual government-donor Joint Review and Implementation Supervision mission
- Joint Strategic Oversight committee meeting
- Rapid Response Mechanism
- Agreed studies and assessments, including bi-annual impact surveys

Graduation

Graduation is a key goal of the Food Security Programme to which the Productive Safety Net Programme (PSNP) contributes. The term 'graduation' describes the movement of a HH From

food insecurity to the level of food security. There are two levels of graduation. Graduation from PSNP and graduation from FSP. Every year an assessment is done to check whether the HH is reached to the level graduation or not.