MEKELLE UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF MARKETING MANAGEMENT

MKTM 3101: AGRICULTURAL and COMMODITY MARKETING

[Module]

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SECTION A: ORGANIZATIONAL COMPONENTS

1. Module objectives

The module specifically aims at:

- Acquainting you with the nature and generic concepts of agricultural and commodity Marketing.
- Enable you know about the key functionaries of agricultural marketing.
- Enable you know market shock measurement models for agricultural products.
- Providing you with an overview of marketing of agricultural commodities and products.
- Making you appreciate the important decisions to take during the management of each element of the marketing mix: product, pricing, place, and promotion.
- Making you recognise how to develop marketing plan for agricultural products.
- Imparting you with skills to assess the performance of the marketing systems of agricultural commodities and products.
- Enabling you acquire the basic knowledge and skills of managing risks associated with the fluctuation of price.

2. Expected learning outcomes

By the end of this module you will be able to:

- Define the generic concepts of agricultural and commodity marketing.
- Understand the marketing systems for agricultural commodities and products.
- Develop efficient and effective marketing plans for agricultural commodities and products.
- Measure market shocks of agricultural products.
- Develop marketing plan for agricultural products.
- Assess the performance of the marketing systems of agricultural commodities and products.
- Manage agricultural marketing risks that would be created as a result of un-stable price trend.

3. Contact information

	Name	Room No. and building	Telephone number, E-mail address, and Contact hours
Lecturer	**Alemayehu Hadera**	**B6, R 108**	**Tel: (251) 914-009708** **Email: auahadmaz@gmail.com**

4. Mode of delivery

The module will be delivered in a probing, scientific and innovative manner through class lectures, case studies, discussion, and assignments. There will be 3 lecture hours per week for a 16 weeks semester**.** For each topic, references are given for reading. You are therefore advised to embark on a well-structured and systematic study program. You are expected to read assigned material before attending the lecture in which the material will be discussed. Additional readings that will enhance your understanding of the subject matter will be also provided in class.

CHAPTER 1: NATURE OF AGRICULTURAL MARKETING

Content

1.0 CHAPTER OBJECTIVE

At the end of this chapter, students will be able to:

- Internalize the evolution of agricultural marketing
- Define agricultural marketing
- Explain the role of agricultural marketing to LDCs
- Explain the basic characteristics of agricultural products
- Understand the problems encountered in marketing of agricultural products
- Conceive the suggested solutions to improve agricultural marketing
- Differentiate marketing of agricultural and manufacturing products
- Discuss the key agricultural marketing infrastructures
- Know about the producer's surplus of agricultural commodities

1.1 INTRODUCTION

Activity 1: *Dear students! Had you ever been think/heard about the evolution of agricultural marketing? Or what do you think/heard about the contributors to the emergence of agricultural marketing? If so, please take a moment to write about it then you will compare your pre-reading and post-reading knowledge of the issue.*

During the agrarian or backward economy the societies were largely self-sufficient which means they were build their own homes, they were make their clothes, tools, etc. only for themselves. In general the agrarian/backward societies had done everything important to their life by themselves. Thus, there was no marketing because there was no an exchange.

As time passes the society moves from pure agricultural economy and self-sufficiency to an economy build around division of labor, industrialization and urbanization. Consequently, individuals grow and produce more goods/foods than he/she needed for him/her self.

When they started to produce more than what they can consume, marketing had its beginning in agriculture. It developed only after man was able to produce more food than he/she needed for him/herself and only after he/she had found a way of exchanging the products of his labor for those of others. Marketing come into existence in terms of barter trade when someone realized that exchange adds value and produces more. This transition from "production for

consumption" to production for exchange" comes about slowly. In fact, the marketing economy of today is still a part of this transition stage. So, the traditional marketing comes in to existence due to the two reasons explained in this paragraph.

The emergence of modern marketing is associated with the World War I which is the main reason for the emergence of industrial revolution. Before the industrial revolution the world economy had been dominated by small scale manufacturers where demand was exceeded supply. Then selling products to nearby customer was an easy task of the manufacturers. Therefore, there was no need of formally organized marketing efforts. Because, as you know marketing programs not only demand effort, creativity, etc. but also budget for proper implementations of the planned programs. Therefore, the then strategists didn't want to invest on such programs that don't add value on sales which was not the then problem of producers.

But after the industrial revolution machine producer machineries were introduced. Because of this the world economy slowly comes to be dominated by large scale manufacturers. Not only production capacity of the existed companies was up-scaled, but also the number of firms which engaged in production and delivery of similar product were dramatically increased. As a result of this truth supply exceeds demand. Selling becomes challenging task and selling to nearby could not enough to manage the over headed stocks of the manufacturers. To simplify the challenging task of selling, different marketing functional areas, such as sales, advertising and distribution were established. In general there was a need of well-organized marketing efforts, i.e., the implementation of modern marketing practices. Now marketing is unavoidable social, managerial, political, cultural and organizational concern of developed and developing economies around the world.

Activity 2: Dear students did you find it well! Please compare what did you wrote at the beginning and what you find in this module about the emergence of agricultural marketing. If possible, please share and discuss what you got about the topic with your class mates or any other person who you think that he/she knows about it. Thank you!

1.2 MEANING OF AGRICULTURAL MARKETING

Activity 3: As a third year student of marketing management, it's believed that your knowledge about marketing is even beyond defining terms. So, keeping this in mind have you ever been imagine about the application of marketing concepts in the agricultural sector, did you ever been heard/think about the meaning of agricultural marketing? Please take this opportunity to define marketing in the perspective of agriculture. Great! Keep thinking, writing, and reading.

The term *agricultural marketing* is composed of two words – agriculture and marketing. Agriculture, in the broadest sense, means activities aimed at the use of natural resources for human welfare, *i.e.*, it includes all the primary activities of production. But, generally, it is used to mean growing and/or raising crops and livestock. Therefore, we are confident to say agriculture is the science and art of cultivating plants and livestock. Marketing encompasses a series of activities involved in moving the goods from the point of production to the point of consumption. It includes all activities involved in the creation of time, place, form and possession utility.

Philip Kotler has defined marketing as a human activity directed at satisfying the needs and wants through exchange process.
American Marketing Association defined marketing as the performance of business activities that directs the flow of goods and services from producers to users.

According to Thomsen, the study of agricultural marketing comprises all the operations, and the agencies conducting them, involved in the movement of farm-produced foods, raw materials and their derivatives, such as textiles, from the farms to the final consumers, and the effects of such operations on farmers, middlemen and consumers.

For the sake of common understanding agricultural marketing is the study of all the activities, agencies and policies involved in the procurement of farm inputs by the farmers and the movement of agricultural products from the farms to the consumers.

Agricultural marketing has its own system which plays critical role in the smooth flow of commodities and ensuring balanced benefits of the farm and non-farm societies. The agricultural marketing system is a link between the farm and the non-farm sectors. It includes

the organization of agricultural raw materials supply to processing industries, the assessment of demand for farm inputs and raw materials, and the policy relating to the marketing of farm products and inputs. Agricultural marketing is a process which starts with a decision to produce a saleable farm commodity, and it involves all the aspects of market structure or system, both functional and institutional, based on technical and economic considerations, and includes pre- and post-harvest operations, assembling, grading, storage, transportation and distribution.

Agricultural marketing system in developing countries including Ethiopia can be understood to compose of two major sub-systems *i.e.*, product marketing and input (factor) marketing. The actors in the product marketing sub-system include farmers, village/primary traders, wholesalers, processors, importers, exporters, marketing cooperatives, regulated market committees and retailers. The input sub-system includes input manufacturers, distributors, related associations, importers, exporters and others who make available various farm production inputs to the farmers.

However, as **Acharya** has described, in a dynamic and growing agricultural sector, the agricultural marketing system ought to be understood and developed as a link between the farm and the non-farm sectors. A dynamic and growing agricultural sector requires fertilizers, pesticides, farm equipment, machinery, diesel, electricity, packing material and repair services which are produced and supplied by the industry and non-farm enterprises. The expansion in the size of farm output stimulates forward linkages by providing surpluses of food and natural fibres which require transportation, storage, milling or processing, packaging and retailing to the consumers. These functions are obviously performed by non-farm enterprises. Further, if the increase in agricultural production is accompanied by a rise in real incomes of farm families, the demand of these families for non-farm consumer goods goes up as the proportion of income spent on non-food consumables and durables tends to rise with the increase in real per capital income. Several industries, thus find new markets for their products in the farm sector.

Agricultural marketing, therefore, in this study can be defined as comprising of all activities involved in supply of farm inputs to the farmers and movement of agricultural products from

the farms to the consumers. Therefore, the term "agricultural marketing" as used in this material describes nothing more than a series of services involved in getting goods from the point of production to the point of consumption.

Agricultural marketing system includes the assessment of demand for farm-inputs and their supply, post-harvest handling of farm products, performance of various activities required in transferring farm products from farm gate to processing industries and/or to ultimate consumers, assessment of demand for farm products and public policies and programmes relating to the pricing, handling, and purchase and sale of farm inputs and agricultural products. Of late trade in the domestic and international markets also become the part of it.

Agricultural marketing is a form of marketing that encompasses all goods and services related to the field of agriculture. All these products directly or indirectly support the effort to produce and deliver agricultural products from the farm to the consumer. The range of this type of marketing includes such varied products as real estate support, equipment used in cultivation and harvesting, storage facilities for harvested crops, and delivery services that transport the harvest to consumers. In addition, financial services that make it possible to secure products necessary for agriculture to function are also normally included as part of agricultural marketing.

1.3 THE ROLE OF AGRICULTURAL MARKETING TO LDCs

Activity 4: Dear students, before reading this topic, do you believe that agricultural marketing is important? If so, please discuss why agricultural marketing is important for less developed countries (LDCs) such as Ethiopia? If not indicate your rationality. Thank you!

The primary concern of agricultural marketing is efficient marketing of farm products, i.e., moving products from producer to consumer at the lowest possible cost commensurate with service provided. Thus, we are interested not only in understating consumer wants and how the present marketing system functions, but also, more fundamentally, in how we as students of agricultural marketing can take advantage of that knowledge to bring about a more efficient system, no matter who derives the benefit from such efficiencies.

The objective of a study of the whole marketing system thus becomes nothing more than an understanding of the means of providing efficient services in the transfer of goods from the producer to consumer.

In many countries, and virtually every less developed country (LDC), agriculture is the biggest single industry. Agriculture typically employs over fifty percent of the labour force in LDCs with industry and commerce dependent upon it as a source of raw materials and as a market for manufactured goods. Hence many argue that the development of agriculture and the marketing systems which impinge upon it are at the heart of the economic growth process in LDCs. Moreover as Kriesberg[1] points out; in LDCs the consumer frequently spends in excess of fifty percent of the household's income on basic foodstuffs - much of which is inadequate both in quality and nutritional content. By contrast Americans spend approximately twelve percent of their total disposable income on food. In Western Europe the figure ranges from about sixteen to nineteen percent of disposable income. Furthermore, whereas in developed countries the poor are relatively few in number, and therefore it is economically possible to establish special food distribution programmes to meet their needs, the scale of poverty in most LDCs is such that the commercial marketing system must be relied upon to perform the task of food distribution to poor and not-so-poor alike. This being so, it is imperative that the marketing system performs efficiently.

Agricultural marketing play an important role not only in stimulating production and consumption but also in accelerating the pace of economic development.
The importance of agricultural marketing in economic development has been indicated in the paragraphs that follow.

1.3.1 Optimization of Resource Use & Output Management

An efficient agricultural marketing system leads to the optimization of resource use and output management. An efficient marketing system can also contribute to an increase in the marketable surplus by scaling down the losses arising out of inefficient processing, storage and transportation.

1.3.2 Increase in Farm Income

An efficient marketing system ensures higher levels of income for the farmer by reducing the number of middlemen or by restricting the commission on marketing services. An efficient marketing system guarantees the farmer better prices for farm products and induce them to invest their surpluses in the purchase of modern input so that productivity and production may increase.

1.3.3 Widening of Markets

A well-knit marketing system widens the market for the product by taking them to remote corner both within and outside the country, i.e., to areas far away from the production point. The widening of the market helps in increasing the demand on a continuous basis, and there by guarantees a higher income to the producer.

1.3.4 Growth of Agro-based Industries

An improved and efficient system of agricultural marketing helps in the growth of agro-based industries and stimulates the overall development process of the economy. Many industries depend on agriculture for the supply of raw materials.

1.3.5 Adoption and Spread of New Technology

The marketing system helps the farmer in the adoption of new scientific and technical knowledge. New technology requires higher investment and farmers would invest only if they are assured of the market clearance.

1.3.6 Employment

The marketing system provides employment to millions of persons engaged in various activities, such as packaging, transportation, storage and processing persons like commission agents, brokers, traders, retailers and packagers are directly employed in the marketing system. According to United Nations Ministerial Conference of the Least Developed Countries (2007), Agriculture is the backbone of the LDCs. In most cases it creates 70% employ opportunities to the people that accounts more than any other sector in the LDCs, such as Ethiopia.

1.3.7 Addition to National Income

Marketing activities add value to the product thereby increasing the nation's gross national product and net national product. According to United Nations Ministerial Conference of the Least Developed Countries (2007), Agriculture is the backbone of the LDCs. It accounts for between 30 to 60 percent of the gross domestic product (GDP) among the LDCs, represents a major source of foreign exchange, supplies the bulk of basic food and provides subsistence and other income to more than half of the LDCs' population. The strong forward and backward linkages within the rural sector and with other sectors of the economy provide added stimulus for growth and income generation.

1.3.8 Better Living

The marketing system is essential for the success of the development programmes, which are designed to uplift the population as a whole. Any plan of economic development that aims at diminishing the poverty of the agricultural population, reducing consumer food prices, earning more foreign exchange or eliminating economic waste has, therefore, to pay special attention to the development of an efficient marketing for agricultural products.

1.3.9 Creation of Utility

Marketing is productive, and it is as necessary as the farm production. It is, in fact, a part of production itself, for production is complete only when the product reaches a place in the form and at the time required by the consumer. Marketing adds cost to the product, but, at the same time, it adds utilities to the product.

The following four types of utilities of the products are created by marketing:

Form utility: the processing function adds form utility to the product by changing the raw material into a finished form.

Place utility: the transportation function adds place utility to products by shifting them to a place of need from the place of plenty.

Time utility: the storage function adds time utility to the product by making them available at the time when they are needed.

Possession utility: the marketing function of buying and selling helps in the transfer of ownership from one person to another.

Thus, significant progress in promoting economic growth, reducing poverty and enhancing food security cannot be achieved in most of these countries without developing more fully the potential human and productive capacity of the agricultural sector and enhancing its contribution to overall economic and social development. A strong and vibrant food and agricultural system thus forms a primary pillar in the strategy of overall economic growth and development. Agriculture in LDCs cannot continue to be treated as a residual sector for policy attention and investments.

Activity 5: Well done! Now you are in a position to share adequate knowledge about the above issue with your colleagues, classmates, or any other person. Even I'm confident to invite you for an argument with any person about the importance of agricultural marketing. Therefore, you are invited to share what you know to or argue with others who are reading this material in any plat form, such as social medias, mobile/phone calls, face-to-face discussion (this platform needs keeping your distance to protect from covid-19), or any other platforms.

1.4 CHARACTERISTICS OF AGRICULTURAL PRODUCTS

The special characteristics of farm products have pronounced influence on where and when they are produced and marketed. Some of the major characteristics as follow:

i. ***Perishablity***

All farm products, being parts of living organisms, are good Medias for bacteria and are therefore perishable. Because of their perishablity they are vulnerable to price fluctuations (price decrease) so we need to have an effective and efficient distribution system.

Perishable, too, can be measured only in relation to other products. All products ultimately deteriorate. Some agricultural products, like fresh strawberries or fresh peaches, must move into consumption very quickly or they completely lose their value. Such products as cattle or poultry continue to grow and change if storage in the form of withholding them from market is attempted. Wheat, on the other hand, can be stored for a considerable length of time without much deterioration. Even the most storable agricultural products, however, are usually more perishable than other industrial products. Perishable products require speedy handling and

often special refrigeration. Quality control often becomes a real and costly problem. From the farmer's viewpoint, withholding from the market is extremely difficult; when the products are ready, they must move.

ii. ***Bulkiness*** – in addition to being perishable, most farm products have a low value in relation to their volume or weight. This bulkiness further complicates marketing. The cost of transportation generally restricts the production of bulky and perishable items to areas near the market, so any improvements or advances in the transportation system extend the profitable areas of agricultural production. Bulk affects the marketing functions concerned with physical handling. Products that occupy a lot of space in relation to their value almost automatically raise unit transportation and storage costs. A truckload of drugs would be considerably more valuable than a truckload of wheat. In this sense, fruits, vegetables, grain, and meats are all quite bulky.

iii. ***Seasonality:*** agricultural products are also subject to all the varying conditions of nature. Volume of production varies with the weather, from one season to another, and from one region to another. Some of the fluctuation in production can also take on the characteristics of cycles, which vary in length with the biological process involved. For example, it takes about seven years to build up sufficient numbers of beef cattle to depress their purchasing power, and it then takes a similar number of years to liquidate enough cattle so the purchasing power will rise again.

In addition to the annual production variability, much of agricultural production is highly seasonal. Livestock receipts may vary substantially throughout the year. The harvest of such crops as paddy, fruits, and vegetables is crowded into a relatively short period. Egg and poultry production is larger in seasonal fest and remain stable after the period. To the extent that the product is storable, storage facilities must be furnished to hold the product until it is consumed. This means that during part of the year, storage will be used at near capacity, at other times it will be almost empty. If the product cannot be stored it must either be processed or consumed immediately. This may result in processing plants running at capacity for some periods and well below capacity, or even shut down, for other periods. If the product must move directly into consumption, transportation and refrigeration facilities must be available immediately. These situations affect the costs of the marketing process.

iv. ***Quality Variation:*** the quality of agricultural product is subject to many conditioning factors, the weather again being not the least among them. Good quality and large yields go hand in hand. When yields are poor, quality is frequently poor. Wide variations in quality tend to disorganize the market, cause wide price fluctuations, add to the costly storage, complicate grading and make transpiration difficult.

The general quality as well as the total production of agricultural commodities varies from year to year and from season to season. During some years the growing conditions are such that the crop in general is of high quality. In other years, unfavorable conditions prevail and the crop is of much lower quality. Such variations in the quantity of production make it very hard to apply uniform standards for grades from year to year. If the quality of the apple crop is uniformly high, the standards for top-grade apples may be strictly adhered to. On the other hand, if the quality of the apple crop is poor, grading standards may be relaxed somewhat to permit some apples to be marketed as top quality. Variations in the quality may also change marketing patterns. For example, during a year in which corn does not mature properly, large amounts of 'soft' corn are harvested. The corn will spoil if it is not used before the following years. Farmers may then buy additional feeder stock in order to utilize this corn. The marketing pattern of these feeders, however, will be different from the usual pattern because the feeding period is adjusted to the condition of the corn.

v. ***Raw Materials:*** The output of agriculture is largely a raw material that will be used for further processing. This processing may be limited, as in converting livestock into meat. It may be highly complex, as in converting wheat into Wheaties/flour. Regardless of the complexity, however, the product sold by the farmer soon loses its identity as a farm product becomes simply food.

Activity 6: For a few minutes you were reading about the special characteristics of agricultural products. Now as a prospect marketing experts, you are challenged to write marketing implication/s of each characteristic. In another words, had you been marketing advisor of Farm Company, what you could do or advice to the firm in response to the characteristics of agricultural products? Your answers can be corrected either by mailing to your instructor, or

mailing to the address which is placed on the cover page of this module, or sharing with your classmates via social medias (telegram, face-book, etc.), or any other form.

1.5 THE COMMON PROBLEMS ENCOUNTERED IN MARKETING OF AGRICULTURAL PRODUCTS IN LESS DEVELOPED COUNTRIES (LDCs)

Activity7: Did you observed or faced any problem/s in marketing of agricultural products in your local area or your country? Pleas list them and discuss with your colleagues how they are challenging the farmers.

Over the years, major changes came into effect to improve the agricultural marketing system. Many institutions such as, the regulated markets, marketing boards, cooperative marketing institutions, warehousing cooperatives etc., have been established primarily to help the farmers. However, various studies indicated that modernization in agricultural marketing couldn't keep pace with the technological adoptions in agriculture. The various marketing functions viz., grading, standardization, storage, market intelligence, etc., need to be improved to meet the present day requirements of the farmers. In improving the marketing system for food and livestock in developing countries as Ethiopia, it is pertinent to understand the nature of marketing problems as it is only by doing this that workable solution can be found to them. Indeed such knowledge of marketing problems would give information as to why markets are not developing and what measures are required to develop the markets. These problems include the following:

1. **Large Number of Middlemen**

The field of agricultural marketing is viewed as a complex process and it involves a large number of intermediaries handling a variety of agricultural commodities, which are characterized by seasonality, bulkiness, perishability, etc. The prevalence of these intermediaries varies with the commodities and the marketing channels of the products.

Because of the intervention of many middlemen, the producer's share in consumer's birr (pocket) is reduced.

2. **Small and Scattered Holding**

The agricultural holdings are very small and scattered throughout the country, as a result of which the marketable surplus generated is very meager. It is not an easy task organizing how

the products can be assembled for efficient marketing. Moreover there are many varieties of particular crops such as teff **(ጤፍ)** and this poses problems in pricing.

3. Forced Sales

The financial obligations committed during production force farmers to dispose the commodity immediately after the harvest though the prices are very low. Such forced sales or distress sales will keep the farmer in vicious cycle of poverty. Report has it that the farmer, in general, sells his produce at an unfavorable place and at an unfavorable time and usually he gets unfavorable terms.

4. Technological Development Problems in Farm Production

Evidence has it that technological change in performing certain farm operations brought in new problems in agricultural marketing. For example, mechanical picking of cotton associated with the problem of mixing trash with cotton; potato diggers are found to cause cuts on the potato; sugarcane harvesters effects the problem of trash mix with the cane, etc. These problems lead to the reduction of price for the farm products. Unless corrective measures are affected, the production technologies accentuate the marketing problems.

5. Lack of Transport Facilities

This problem has many dimensions. Lack of transport services refer to absence of the transport service in reasonable agricultural marketing areas, seasonality of transport service, high freight charges due to inadequacies, lack of all-weather roads and transport vehicles, unsuitability of the present transport facilities for transportation of some products like fruits, vegetables, eggs, etc. In some cases there are insufficient vehicles to carry goods from the farms to the rural markets and from the rural markets to the towns. In other cases, transport accounts for a large proportion of marketing costs. In some instances, there are no roads or where they exist, they might be seasonal. Feeder roads are usually few and, in most cases, have to be constructed and maintained by communal efforts.

6. Poor Handling, Packing, Packaging, and Processing Facilities

For efficient and orderly marketing of agricultural products, careful handling and packing are required. Present packing and handling are inadequate. For instance, many times we see rough and careless treatment in the packing and initial handling of fruits and vegetables. Green vegetables are packed in heavy sacks which will be heated up quickly at the centre, wilt and

rot soon. Workers or passengers are allowed to ride on top of a load of vegetables, which will result in physical damage. Careless handling of fruits and insanitary handling of the produce are other problems. Poor handling and packing expose the products to substantial physical damage and quality deterioration. If there are no processing facilities, say, for tomatoes, it means all the harvested crops must be sold within a given time and because there are packaging problems, quite a substantial part of the produce may be lost before getting to the market. Not only do these losses cut down the supply of products reaching the consumers, but also raise the price of the remaining portion, which must bear all costs.

7. Lack of Uniform Standardization and Grading

Inadequacies exist in scientific grading of the produce in the country. In the absence of standardization and grading, adulteration is the consequence. Each middleman may adulterate the produce to his short run advantage. This poses a problem in assigning prices to the commodities as per the quality specifications. In most markets different types of measures are used. These range from bags to cigarette tins. Weights are rarely used in marketing food and livestock products. Pricing is usually haggling and the prices paid depend on the bargaining power of the buyer. It is alleged that no proper relation exist between the prices and quality of the agricultural commodities and this situation thwarts the farmers getting a remunerative price inconsistent with quality of the product. The transaction of such products hardly encourages the farmers and the consumers who are also denied the privilege of buying a good in relation to the price he pays. Sometimes buyers pay prices according to their social status. When weights are used, they are always debased or tampered with and the true beneficiary in this situation of such inadequacies of standardization and grading are the market intermediaries as they are at liberty to quote any commodity as offer low price.

8. Inadequate Storage Capacity and Warehousing Facilities

Inadequate storage facilities are the cause of heavy losses to farmers in many parts of the world; and this result in serious wastage of foodstuffs, and increased costs to producers. There are no scientific storage facilities for perishable products (fruits, milk, meat, vegetables, fish, etc.). The storage loses of food grains occur at all stages between the farm level and the final level of consumption. Such losses occur from physical damages due to pest infestations, rodents and quality deterioration, discoloration and unpleasant odour which would make the product unfit for human consumption. Most markets lack storage and warehousing facilities

and the amount of wastage that occurs due to the lack of these facilities often account for increasing cost of marketing and, hence, retail prices.

9. Adulteration of Produce and Malpractices in Market

In some cases inferior commodities are mixed with superior ones and are sold as superior commodities. This is possible since there are no grades and there are no quality control measures. Also the manipulation of weights and measures is still prevalent in the unregulated markets in spite of the introduction of uniform system of weights. Arbitrary deductions in the name of sampling are a common feature. Sale under cover is also another feature of these unregulated markets.

10. Growth of Urban Centers

The growth of urban centers creates more marketing problems: concerned with inadequate supply to meet the increase in size; the need to create new markets; storage and even parking problems for prospective buyers who own cars.

11. Communication Problem

One of the key elements of efficient agricultural marketing system is the availability of proper communication infrastructure. Rural areas are inadequately placed with reference to posts, telegraphs and telephone. The literacy rate being low among the farmers, it poses difficulty of the communication tasks.

12. Lack of Information about Production and Marketing

Some marketing problems can be traced to lack of information about production. For instance, sellers may not be able to identify sources of supply of commodities, while producers may curtail their production as a result of poor sales. Some broiler producers for instance, keep their birds for longer periods because they cannot get people to buy them. On the other hand, sellers may not know that such broiler farm exists. Market information, however, is essential for producers, traders, consumers as well as the Government, if market mechanism has to work efficiently. The relevant market information deals with character and volume of supply of commodities, the present and expected level of consumers' demand, current price quotations and future price trends for different farm products and their probable impacts on prices. Market information is of two types' viz., market intelligence and market news.

Market intelligence indicates a record of past information in relation to prices, market arrivals, etc. It essentially helps to make decisions in future based on the past information. Market news on the other hand, provides current information on prices, arrivals, etc. But in reality the farmers more often than not, are in total dark as far as this information is concerned. The farmers do not know the information on the existing prices of the products in the important markets. By and large, the farmers rely on the price information furnished by the traders. The price information provided generally is quite advantageous to the traders, rather than to the farmers.

13. Lack of Farmers' Organization

The farmers are scattered over a wide area without any common organization. In the absence of such organization, farmers do not get anybody to guide them and protect their interests. On the other hand, traders are an organized body. Thus, the marketing system, therefore, constitutes unorganized farming community on one side and organized and powerful traders on the other side. Under such situations, farmers will be generally exploited and do not get remunerative prices for their produce.

14. Inadequate Research on Marketing

Until recently, all efforts have been geared towards producing more without thinking about how to market them. There is need to know about new technologies in food storage and preservation. There is also need for research on consumer demands and preferences, handling and packaging.

1.6 SUGGESTIONS TO IMPROVE AGRICULTURAL MARKETING

Activity 8: As you discussed above, there are a lot of problems encountered in the marketing of agricultural products. So, what do you think about the possible solutions to the problems encountered?

Improving the marketing system of agricultural products would help the farmer to better his economy. The following are suggested measures that could reflect an improved agricultural marketing system:

1. Establishment of Regulated Markets

A regulated market is one, which aims at the elimination of the unhealthy and unscrupulous practices, reducing marketing charges and providing facilities to producers. An example of such is the first regulated market (Karanjia Cotton Market) in India, which was established with a view to arranging supplies of pure cotton at reasonable prices to the textile mills in Manchester UK under the Hyderabad Residency Order in 1886. Similar policy could be enacted by the Ethiopian government to ensure sustainability in the production agricultural produce. Under the regulated markets, its management should be vested with market committees in which the members would be producers, traders, officials of the marketing societies, officials of agricultural and animal husbandry etc. The institute should be self-financed, statutory and autonomous. Funds would be raised through licensing fees and market fees on the notified agricultural produce transacted in the premises of the market yard. The regulated market however has the following benefits:

- Farmers are encouraged to bring their produce directly to the markets
- Farmers are protected from the exploitation of market functionaries
- Farmers are ensured better prices for their produce
- Farmers have access to up-to-date market information
- The marketable surplus of the farmers will be increased
- Marketing costs are lowered and producers share will be increased.

2. Standardization and Grading

Standard specifications and grading should be designed to be useful to as many producers, traders and consumers as possible i.e., standards should reflect market needs and wants. One grade should have the same implications to producers, traders and consumers in the quality of the product. It must have mutually acceptable description. They should reflect commodity characteristics that all types of buyers recognize. The grading should be simple, clear and easy to understand.

The Ethiopian government can enact policies that enforces the standardization of agricultural produce such that graded product would have a form of a logo or label mandatorily attached to it to signify that the product meets all the standardization and grading requirement for packing, sealing etc., and only traders who are willing to follow the regulation are given "Certificate of Authorization". In this case coffee and some other commodities are good

examples of standardization and grading in Ethiopia. But it's un-deniable most of farm commodities in Ethiopia runs out of standardization and grading system.

3. Improvement in Handling and Packing

This refers to the adoption of new techniques for the physical handling of commodities throughout the various phases of marketing, for instance, the use of cold storage (mechanical refrigeration) in handling of perishables, new methods of packing etc. The most appropriate handling and suitable containers among the available ones are meant to use against dust, heat, rain, flies etc., to prevent considerable physical losses and quality deterioration.

4. Provision of Storage Facilities

Reduction of physical damage and quality deterioration in the products can be brought about through the application of the scientific techniques and provision of appropriate storage facilities depending on the nature and characteristics of products and the climatic conditions of an area. To this effect, a licensed warehouse is required. A licensed warehouse has the following benefits:

- Reduces the wastage in storage of various commodities by providing scientific storage facilities
- Assists the government in orderly marketing of agricultural commodities by introducing standard grade and specifications
- Issues warehouse receipts, a negotiable instrument in which commercial banks advance finance to the producers and dealers
- Assists government in the scheme of price support operations.

However, there would be procedures for storage which are not too bureaucratic. The depositor intending to store the produce in the warehouse would have to present a written requisition in the application prescribed by the warehouse. The commodity meant for storage will be properly packed and delivered at the warehouse. The depositor would have to disclose all details of the commodity including the market value in the application form. The commodity brought for storage will be graded and weighed by trained technical personnel before the commodity can be stored. Different storage charges would also apply for different commodities and the stocks offered for storage will be insured against possible risks of fire, theft and floods, strikes and civil commotion.

5. Improving Transport Facilities

Link-up and associated road development is *determinant factor* for the success of market structure. The availability of efficient transportation encourages the farmers to the markets of their option to derive the price benefits. Rural roads particularly are in bad state during all seasons and more so during rainy season. Investment on roads should be given top priority. Also another problem is that perishables cannot be transported in closed wagons hence there is a need to provide necessary ventilation in whichever means they are to be transported.

6. Market Information

As such we have newspapers, price bulletins, reports of the government agencies etc., which provide market information. This information would be much more useful if an educational programme is made available to analyze and interpret the information at the markets. The raw data no doubt provides valuable information but skillful interpretation makes it useful to the farmers.

7. Market Research

Market research can be defined as the study of consumer demand by a firm so that it may expand its output and market its product. It centers on consumers' needs, preferences, impressions of a product, accessibility of markets, efficiency of marketing etc. Marketing research needs to be given top priority to improve up on the marketing system.

8. Market Extension

This involves the dissemination of needed information on marketing to producers. The farmers will be advised on consumer preferences, grading, packaging, transport, etc., in order to help them to secure better returns.

9. Provision of Agricultural Marketing Training to Farmers

Provision of training is of utmost importance in view of the malpractices resorted to by various market functionaries. The farmer needs to be trained in product planning i.e. crops and varieties to be grown, preparation of produce of produce for marketing, malpractices and rules and regulations, market information, promotion of group marketing, etc.

10. Cooperative Marketing

Cooperative marketing is the organized sale of farm products on a non-profit basis in the interests of the individual producer. Cooperative marketing are organized by farmers themselves and the profits are distributed among the farmer-members based on the quantity of the produce marketed by them.

The agricultural marketing system should basically ensure that the producer is encouraged to increase production, besides assuring the farmer remunerative prices for his produce and supplying the commodities to the customers at reasonable prices. In view of this, cooperative marketing societies should be established for meeting the requirements of the farmer. The benefits of cooperative marketing include:

- Make arrangement for the sale of produce of the members
- Provides credit facilities to the members on the security of agricultural produce
- Provide grading facilities, which would result in better price
- Make arrangement for scientific storage of the member's produce
- Arrange the supply off inputs required by the farmers
- Undertake the system of pooling the produce of the members to enhance the bargaining power through unity of action
- Arrange for the export of the produce to enable the farmers get better returns
- Act as an agent of the government in procurement of food-grains, etc.

11. Provision of Cold Storage Facilities and Refrigerated Transport

For perishable commodities like fruits and vegetables, quality losses are enormous and hence it would be necessary to take measures and devise means or methods of controlling and minimizing losses. Preservation is, thus, a necessary adjunct of production and a vital link between production and consumption. Cold storage is the most important for the proper marketing of horticultural produce, because it had a definite season of production and the quality of the produce deteriorates quickly after harvest. Most fruits and vegetables losses moisture to the surrounding air almost any time in the humidity of the air is less than saturated. It is possible to maintain high humidity of the 80 – 95 per cent in proper cold storages and hence refrigeration is also beneficial in reducing moisture losses.

Refrigerated transport for perishables needs to be provided during their movement in marketing channels. Besides road transport, railway wagons should also be suitably modified for transportation of perishables.

12. Development of Physical Market

Physical markets handling fruits and vegetables suffer from operational and management inadequacies. A country level plan to identify markets of national importance for fruits and vegetables and provision of need-based infrastructure from export point of view in all these markets is imperative.

Activity 9: Brave! You completed reading the sub-topic. It's believed that you were immersed in reading the proposed solutions. Appreciating your concentrated reading, you are requested to indicate your excellence of the topic by proposing additional solution/s overlooked in the module.

1.7 DIFFERENCES IN THE MARKETING OF AGRICULTURAL AND MANUFACTURING PRODUCTS

The marketing of agricultural product differs from manufacturing products because of the special characteristics that the agricultural sector posses. Some of these characteristics are:

- **Perishability of the Product**

Most farm products are perishable by nature. However, the perishability may vary from a few hours to a few days, weeks or months. The perishability makes it impossible to fix the reserve price by the producer. The extent perishability of farm products may be reduced by the processing function but they cannot be non-perishable like manufactured products.

- **Seasonality of Production**

Most farm products are seasonal in nature. They are grown in particular season. In harvest season prices fall and their supply cannot be adjusted or made uniform throughout the year. Because of supply for farm products fluctuate from time to time, price also varies.

- **Bulkiness of the product**

If you observed, outputs of farm produce are bulky. The farm produces are large in volume but low in value before processing. This characteristic makes the transportation and storage of agricultural products difficult and complex.

- **Small holding and scattered production**

Farm products are produced throughout the length and breadth of the country which makes the estimate of supply difficult and it also creates problem of marketing. In addition an individual farmer also faces a typical marketing problem. As his/her share in the total supply is small he/she cannot influence market price.

1.8 TYPES OF AGRICULTURAL MARKETING INFRASTRUCTURES

***Activity 10**: In a modern society where the production and marketing of agricultural products is modernized, flow of information is high, competition is continually intensified, and the farm and non-farm societies are well organized; an efficient marketing of agricultural products is un-thinkable with-out the basic infrastructure/s. Therefore, what do you know about agricultural marketing infrastructures? List and discuss their roles.*

This brief reviews three types of infrastructure– (a) road networks; (b) irrigation technology; and (c) post-harvest storage technology– as these all have a direct impact in boosting agricultural productivity. Other types of infrastructure (e.g. telecommunications and electricity supply) also play a major role but their impact is more evenly dispersed across all sectors, less specifically targeting agriculture.

(a) Roads: A well-maintained road network is crucial when infrastructural issues relating to agricultural productivity are being discussed. Roads link farmers not only with their input markets but also with their product markets. Lack of efficient transportation links and substandard roads decrease farmers' margins by increasing the cost of inputs and reducing their accessibility to their product market. The current state of the region's road networks is in dire straits and a scaling- up of investment is badly needed to confront the problem. Only about 30 percent of the region's rural residents have access to all-season roads (ADB 2009).

African region continues to lag behind other parts of the world in the quality of its road networks, which impacts not only agriculture but all other sectors of the regional economy. This acts as a constraint to conducting trade at all levels, both among African countries and at the international level, since the premium it adds to transaction costs renders African goods more expensive and less competitive in the global marketplace.

The ADB has been active in the financing of road project projects in Africa. This focus is evidenced by the fact that one of the pillars of its 2008-2012 Medium Term Strategy is

infrastructure development (ADB 2008). Another effect of the resulting high transportation is that it prevents price equalization of traded agricultural commodities, which induces shortages in some regions and surpluses in others that are separated by short distances. This issue can be easily demonstrated with the case of rice and maize in Eastern Africa. Given that both commodities are tradable and fairly homogeneous, there should be very a small price differential across cities within a given country, if transportation costs were kept within reasonable limits. This is, however, not the case. While small spatial price differences are to be expected, the scale of the differences presented in Table 1 is indicative of unusually high transaction costs.

Put differently, high transportation costs stemming from poor road networks inhibit market integration between countries and sub-regions. Another increasingly important complementary infrastructure in this area is telecommunications, which can enhance the multiplier effects of a good road network. Given the high penetration rate of mobile telecommunication in the African region over the past decade, there is scope for innovation that allows for both the aggregation of market information and its dissemination to farmers to take advantage of price information when road networks are improved.

Inadequate infrastructure in the form of poor road networks also exacerbates unequal access to credit, particularly for small and medium-size enterprises (SMEs). Given the reality of the low population density in most African countries, this inadequacy leads to higher financial intermediation costs, since long distances increase the administrative cost of lending, monitoring, and loan recovery.

(b) Irrigation: Another type of infrastructure of paramount importance for agriculture is irrigation technology. Agriculture in the region continues to be almost wholly dependent on rainfall, which is highly unpredictable. This leads the substantial shocks in agricultural outputs. It also increases the risk for individual farmers due to the fact that rainfall is spatially covariant, which reduces the scope for idiosyncratic risk-sharing among farmers located in a given area. The importance of irrigation stems from its ability to free farmers from these limiting factors. Studies show not only relatively low level of irrigation infrastructure on the continent but also the low growth rate over the period 1980–2008. Irrigation also

demonstrates high intraregional differentiation research outputs suggest the need for greater investments in certain sub-regions to ensure growth is more equitably distributed.

Investment in irrigation infrastructure has a major positive effect in terms of both outputs per unit of land and per worker. Study shows a positive relationship between agricultural value-added per worker and growth in irrigation investment for a number of African countries.

(c) Storage Technology to Reduce Post-Harvest Losses. Even when farmers manage to achieve higher crop yields through input subsidies, favorable rainfall patterns, or irrigation infrastructure, their harvests are still at risk because of inadequate storage facilities. For example, most existing storage facilities cannot protect crops from destructive pests or weather-accelerated decay. Sub-Saharan countries face huge post-harvest losses: for perishable agro-commodities such as fruits and vegetables, the losses average 35-50 percent of total attainable production, while for grains the loss varies between 15 and 25 percent. Food availability decreases just a few months after harvest because sellers find it difficult to store perishable commodities. The reduction in the food supply inevitably increases prices, leading to high temporal price variations, in addition to the existing spatial price variations caused by poor road infrastructure. The effect of poor storage facilities also limits the development of high-value agri-business industries that specialize in horticulture or other highly perishable agricultural products.

Efforts to reduce post-harvest losses are being undertaken by a number of African and pan-African organizations to include activities such as:

- Training on storage and processing techniques;
- Training and capacity building for agricultural extension, combined with capacity building for local farmers and artisans; and
- Establishment of seed store facilities.

The African Development Bank, as part of the African Food Crisis Response, is formulating a strategy for post-harvest losses that will feed into its strategy for agro-industries. In this way it aims to support its regional member countries in identifying critical interventions along the entire food chain.

(d)Wholesale markets and trading centers

Across the developing world, the development of regulated trading and exchange centers has been unbalanced, with some provinces investing in such facilities whilst in others progress remains inadequate. In Ethiopia, for example, more progressive states have amended their regulatory framework to enable participation of the private sector and cooperatives in the construction and operation of wholesale markets. The same amendments also allow for financial assistance and subsidies to be made to private companies and corporate bodies involved in these activities.

User demand associated with wholesale markets and other types of trading centers is a heightened risk. This highlights the importance of regulatory authorities retaining the option of allowing concession holders to develop land for lease or sale, for example through appropriate land use re-zoning (as adopted in the World-Bank-supported Gdansk fruit and vegetable wholesale market in Poland). Such alternative income streams reduce the need for state subsidies, improve commercial credit terms and can significantly raise the attraction of the project to private equity investors.

(e) Agro-processing

Agro-processing facilities are often viewed as essentially business-to-business private operations. It is therefore unlikely that the raising of debt for investment in agro-processing PPP projects or the high risks of debt repayment, or both, could be transferred to a public body. The public sector is more likely to contribute in the form of land through concessions, or provide capital grants (perhaps backed by donors). The expectation is that farmers or private interests will assume the main commercial risks.

An example is the heat-treatment and well ventilated facility for fruits in Ethiopia's Air lines, the refrigerated transportation service of Ethiopian eat fruit, ASHREF GROUP plc (ASHREF is an Egiptian company involved in processing farm products-oil production, and juice production in different flavors) are playing their own role in processing agricultural products and developing contribution of the sector to Ethiopia's economy. Here the Ethiopian government provides different incentives in terms of reducing bureaucratic procedures, leased farm land in low fee, and low import tax while importing agricultural equipment, tools,

machineries and pesticides. This arrangement means that the facility started operations debt-free and thus better able to manage supply risks and raise capital for expansion. The model also involves both growers and exporters as equity partners in the agro-processing facility project, which ensures that the facility is developing in a way that aligns with market needs and supplier capabilities.

Private participation in financing agro-processing facilities is inherently risky, with the risks higher the less diversified the range of processing services on offer and the greater the dependency on single commodities and on rain-fed farming systems. Broadening infrastructure services to include not only specialized agro-processing but also wholesale trading and marketing is likely to reduce the volatility of user fees and make the venture more attractive to potential funders and investors. Moreover, the government of Ethiopia is now striving to fulfill agricultural marketing infrastructures, such as roads, irrigations, telecommunications, electricity, etc.

(f)Information and communications technology

By 2010, it is estimated that cellular communications networks will cover 80% of the world's population. In 2006, there were already 2.67 billion cellular subscribers, up from 640 million in 2000 (a rise of 417% in six years). In other words, circumstances are changing fast. Mobile coverage is already fairly comprehensive on a global scale, and the need for state subsidies is declining. Key challenges that remain in which PPPs might play a significant role include: (i) how to finance physical telecoms infrastructure (relay stations, base stations and broadband) in remote rural areas, as opposed to mobile networks, which require little subsidy; and (ii) how to utilize information and communications technology (ICT) infrastructure in value chains to stimulate growth of smallholder agriculture.

The first of these challenges is answered in part through the process of least cost subsidy auctions, which is explained further in our main report.3 The second is illustrated by the Drumnet project in Kenya, which shows how public and private parties can collaborate to use information technology to create the elements of a 'virtual' out growers programme. In this programme, farmers have co-ordinated to achieve the volumes necessary for agro-processors, and in return have access to affordable credit, extension services to meet quality standards,

specified agricultural inputs and secure purchasing agreements. Central to this PPP model is an ICT-driven Supply Chain Management (SCM) system, which links information about the standards required by major purchasers to producer groups and suppliers of agricultural inputs, as well as data on credit flows, transactions and accounting.

The organization for this model is complex, but essentially involves concessional public funding to purchase ICT equipment, customize the SCM ICT-platform and cover staff overheads; and a third-party implementing agent (either for-profit or not-for-profit) to manage the operation, drawing on income from farmer membership fees, credit spreads (shared with the bank), credit risk guarantee fees and brokerage fees for securing long-term contracts with purchasers.

The SCM ICT-platform enables transactions in the supply chain to be cash-free, with costs deducted directly from the same bank account into which purchasers make payments and source credit. This brings a number of benefits: farmers are more willing to pay insurance against failing to meet purchase agreement obligations; deductions of interest and principal payments are made directly from product sales, reducing the risk of farmers defaulting on debt repayments; and payments for inputs to suppliers are immediate.

1.9 PRODUCER'S SURPLUS OF AGRICULTURAL COMMODITIES

In any developing economy, the producer's surplus of agricultural product plays a significant role. This is the quantity, which is actually made available to the non-producing population of the country. From the marketing point of view, this surplus is more important than the total production of commodities. The arrangements for marketing and the expansion of markets have to be made only for the surplus quantity available with the farmer, and not for the total production.

The rate at which agricultural production expands determines the pace of agricultural development, while the growth in the marketable surplus determines the pace of economic development. Here, the knowledge of marketed and marketable surplus helps the policy makers as well as the traders in the following areas.

Framing sound price policies: price support programmes are an integral part of agricultural policies necessary for stimulating agricultural production. The knowledge of quantum of marketable surplus helps in framing these policies.

Developing proper procurement and purchase strategies.

The procurement policy for feeding the public distribution system has to take into account the quantum and behavior of marketable and marketed surplus. Similarly, the traders have to decide the purchase strategies on the basis of marketed quantities.

Checking undue price fluctuation: A knowledge of the magnitude and extent of the surplus helps in the minimization of price fluctuations in agricultural commodities because it enables the government and the traders to make proper arrangements for the movement of products from one area, where there is surplus, to another area which is deficient.

Advance estimates of the surpluses of such commodities which have the potential of external trade are useful in decision related to the export and import of the commodity.

Development of transport and storage systems: the knowledge of marketed surplus helps in developing adequate capacity of transport and storage system to handle it.

Meaning: The producer's surplus is the quantity of the produce, which is, or can be, made available by the farmer to the non-farm population. The producer's surplus is of two types:

1) Marketable Surplus

The marketable surplus is that quantity of the produce, which can be made available to the non-farm population of the country. It is a theoretical concept of surplus. The marketable surplus is the residual left with the producer farmer after meeting his requirements of family consumption, farm needs for seeds, and feed for cattle, payment to labor in kind, payment to partisans – carpenter, blacksmith and potter, payment to social and religious activities in kind. This may be expressed as follows:

$$MS = P - C$$

Where:

Ms = Marketable Surplus

P = Total production, and

C = Total requirements (family consumption farm needs, payment to labor, artesian landlord and payment for social and religious work).

2) Marketed Surplus

Marketed surplus is that quantity of the produce which the producer – farmer actually sells in the market irrespective of his requirement for family consumption, farm needs and other payments. The marketed surplus may be more, less or equal to the marketable surplus.

1.9.1 Relationship between Marketed Surplus and Marketable Surplus

The marketed surplus may be more, less or equal to the marketable surplus, depending up on the condition of the farmer and of the crop. The relationship between the two may be stated as follows:

Marketed Surplus >,<,= Marketable Surplus

1. The marketed surplus is more than the marketable surplus when the farmer retains a smaller quantity of the crop than his actual requirement for family and farm needs. This situation of selling more than the marketable surplus is termed as distress or forced sale. Such farmers generally buy the product from the market in a later period to meet their family and/or farm requirements.

2. The marketed surplus is less than the marketable surplus when the farmer retains some of the surplus produce. This situation holds true under the following conditions.
   a) Large farmers generally sell less than the marketable surplus because of their better retention capacity. They retain extra produce in the hope that they would get a higher price in the later period.
   b) Farmers may substitute one crop for another. Crop either for family consumption purpose or for feeding their livestock because of the variation in prices.

3. The marketed surplus may be equal to the marketable surplus when the farmer neither retains more nor less than his requirements. This holds true for perishable commodities and of the average farmer.

1.9.2 Factors Affecting Marketable Surplus

The marketable surplus differs from region to region and, within the same region, from crop to crop. It also varies from farm to farm. On a particular farm, the quantity of marketable surplus depends on the following factors.

- **Size of holding:** There is a positive relationship between the size of the holding and the marketable surplus i.e., the larger the size of holding, the larger the marketable surplus of the crop.
- **Production**: the higher the production on a farm, the larger will be the marketable surplus, and vice versa.
- **Price of the commodity:** the price of the commodity and the marketable surplus have a positive as well as a negative relationship, depending up on whether one considers the short or long run effect.
- **Size of family:** the larger the number of members in a family, the smaller the surplus on the farm.
- **Requirement of seeds and feeds:** The higher the requirement for these uses, the smaller the marketable surplus of the crop.
- **Nature of commodity:** the marketable surplus of non-food crop is generally higher than that for food crops. For example, in the case of cotton and rubber, the quantity retained for family consumption is either negligible or very small part of the total output.
- **Consumption habits:** the quantity of output retained by the farm family depends on the consumption habits.

Activity 11: Now you are already completed the chapter you deserve acknowledgement for your responsible reading and doing the above 10 activities. As a final activity of the chapter, please identify and internalize the key points of the whole topic in a way you will be in a position of an agricultural marketing expert who grabbed introductory chapter.

Well done Thank you!

Chapter summary

Revision questions

1. Explain the evolution of agricultural marketing.
2. Define what agricultural marketing is?
3. Discuss the roles of agricultural marketing.

4. List the characteristics of agricultural products.
5. Write at least four problems encountered in marketing of agricultural products.
6. Write some of the suggested solutions for the problems of marketing agricultural products.
7. Write the difference between manufactured and agricultural products.
8. List at least five agricultural marketing infrastructures.
9. Discuss producer's surpluses of agricultural products.

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2. Kohls, R. L. and Uhl, J. N. 2002. Marketing of Agricultural Products. Ninth Edition. Prentice Hall, chapters 1-3.
3. *Tracey-White, John (2003). "Planning and Designing Rural Markets". Rome: Food And Agrilculture Organization Of The United Nations.*
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Further reading

1. Kohls, R.L. and Uhl, J.N. (1990), *Marketing Of Agricultural Products*, 6th edition, Macmillan Publishing Company, New York, p.385.
2. Kohls, R. L. and Uhl, J. N. 2002. Marketing of Agricultural Products. Ninth Edition. Prentice Hall, chapters 23-29.
3. Kotler, P. and Keller, K. L. 2006. Marketing Management. Twelfth edition. Prentice Hall, Englewood Cliffs, N.J., chapters 1-2.

4. *Safety and health in agriculture. International Labour Organization. 1999. p. 77. ISBN 978-92-2-111517-5. Archived from the original on 22 July 2011. Retrieved 13 September 2010. defined agriculture as 'all forms of activities connected with growing, harvesting and primary processing of all types of crops, with the breeding, raising and caring for animals, and with tending gardens and nurseries'.*

CHAPTER 2: AGRICULTURAL MARKETING FUNCTIONS

Content

2.0 CHAPTER OBJECTIVES

At the end of this chapter, students will be able to:

- Identify the agricultural marketing functions
- Examine the role of each agricultural marketing function
- Explain the role of agricultural functions on adjustment production and consumption of commodities

2.1 INTRODUCTION

In brief, the adjustment of consumption and supply may be accomplished by four major kinds of activities. The first is the operation of price, the third chapter of this module will be devoted to the importance of price in marketing. Secondly to keep price stable, the physical supply of a product may be handled by storage, government control, or foreign trade. Thirdly, another way to maintain price stability is to manipulate demand by advertisings and government controls. Lastly, there are the so called services of marketing, such as transportation and buying and selling, which move the supply of products from farm to consumers. So the aim of this topic is to give a brief explanation on these groups of activities.

Marketing function can be defined as a *major specialized activities carried out by individuals or organization in carrying out products from production point to consumption point*. It

includes the services and functions of different specialized institutions and Middlemen. Different commodities have special marketing problems therefore the results of the study of one commodity may not be applicable to other commodity. Also the same commodity will have different problems in different regions. A marketing function may also define as a major activity performed in accomplishing the marketing process. Apart from the on the farm function of planning what to produce, there are different major functions in this process:

2.2 TYPES OF AGRICULTURAL MARKETING FUNCTIONS

Activity 1: Dear students do you believe that the practice of an efficient agricultural marketing is possible if it's not supplemented by different functionaries? Did you know the agricultural marketing functions with respect to their roles? Please go through this chapter to address these important questions. Thank you!

Agricultural marketing involves in its simplest form the buying and selling of agricultural produce. In olden days, when the village economy was more or less self-sufficient, the marketing of agricultural produce presented no difficulty, as the farmer sold his produce direct to the consumer on a cash or barter basis. Agricultural marketing consists of all the functions and services used in moving the commodities from the producer to the final consumer. It includes not only the physical movement to the place where the product is wanted but also putting it into the form and amount is desired and having it ready at the time it is wanted.

In modern marketing, the agricultural produce has to undergo a series of transfers or exchanges from one hand to another before it finally reaches the consumer. This is achieved through the following important marketing functions namely.

2.2.1. STORAGE FUNCTION

Activity 2: Before reading about this function, please question, what is storage function? Why it's important? How it contributes for the adjustment of production and consumption of agricultural products? Then write your answer on your exercise book.

Storage is the holding of produce from time of production until needed by the consumers. Storing creates time utility. Storage helps to spread out market supply. Some products are stored for short period whereas fresh fruits, vegetables require cold storage.

Adjustment of supply and consumption is not entirely accomplished by price alone. Storage of products for later use has long been accepted method of adjusting variable supplies to the yearlong needs of consumers.

In broad term, the object of storage is to help balance supply and consumption. There are at least four rather specific reasons for a storage program. Perhaps the most obvious of these is the *seasonal nature of most farm production*. Products like strawberries have a relatively short harvest period yet are used throughout the year. Others, such as eggs, is produced throughout the year, but the level of production varies widely storage of these commodities is not for storage's sake alone. Rather, it is storage to maintain a reasonably stable price for producers as well as for marketing agencies and consumer.

A second reason for storage, and one that is often overlooked, is that there is a *demand for different products throughout the year*. The fact that consumers are willing to pay for the storage job so as to have products available for use in the off seasons, encourages other to perform the storage services. Clearly, if there were no demand for product X or Y in December/January, no one would consider processing and storing it during the spring months of plenty so that it would be available later.

A third reason lies in the time required to perform the various marketing service. Transportation from areas of production takes time; so do processing, aging, and buying and selling. Figuratively speaking, there is a pipeline from producer to consumers, and to keep this pipeline filled, stored supplies must be available. Occasional minor variations in consumption or marketing are also more easily handled if supplies can be either taken out of or put into storage. The storage function overcomes the separation of time by maintaining the product in good condition between production and final sale.

A fourth reason for storage is listed by some marketing authorities; it is the so-called need for a carryover in to the following season. This may result from price optimism, or an effort by planners to achieve an ever-normal granary.

An inherent characteristic of agricultural production is that it is seasonal whilst demand is generally continuous throughout the year. Hence the need for storage to allow a smooth and as far as possible, uninterrupted flow of product into the market. Because he is dealing with a biological product the grower does not enjoy the same flexibility as his manufacturing counterpart in being able to adjust the timing of supply to match demand. It would be an exaggeration to suggest that a manufacturer can turn production on and off to meet demand - they too have their constraints- but they have more alternatives than does the agricultural producer. A manufacturer can, for example, work overtime, sub-contract work, and over a longer time horizon, the manufacturer can increase or decrease productive capacity to match the strength of demand.

In agriculture, and especially in LDCs, supply often exceeds demand in the immediate post-harvest period. The glut reduces producer prices and wastage rates can be extremely high. For much of the reminder of the period before the next harvest, the product can be in short supply with traders and consumers having to pay premium prices to secure whatever scarce supplies are to be had. The storage function is one of balancing supply and demand.

Both growers and consumers gain from a marketing system that can make produce available when it is needed. A farmer, merchant, co-operative, marketing board or retailer who stores a product provides a service. That service costs money and there are risks in the form of wastage and slumps in market demand, prices, so the provider of storage is entitled to a reward in the form of profit.

Types of storage structure

I. **Underground Storage Structures**

Underground storage structures are dug out structures similar to a well with sides plastered with cow dung. They may also be lined with stones or sand and cement. They may be circular or rectangular in shape. The capacity varies with the size of the structure.

Advantages

- Underground storage structures are safer from threats from various external sources of damage, such as theft, rain or wind.
- The underground storage space can temporarily be utilized for some other purposes with minor adjustments; and
- The underground storage structures are easier to fill up owing to the factor of gravity.

II. **Surface storage structures**

Food grains in a ground surface structure can be stored in two ways - bag storage or bulk storage.

a) **Bag storage**

- Each bag contains a definite quantity, which can be bought, sold or dispatched without difficulty;
- Bags are easier to load or unload.
- It is easier to keep separate lots with identification marks on the bags.
- The bags which are identified as infested on inspection can be removed and treated easily; and
- The problem of the sweating of grains does not arise because the surface of the bag is exposed to the atmospheres.

b) **Bulk or loose storage**

Advantages

- The exposed peripheral surface area per unit weight of grain is less. Consequently, the danger of damage from external sources is reduced; and
- Pest infestation is less because of almost airtight conditions in the deeper layers.
- The government of India has made efforts to promote improved storage facilities at the farm

Warehousing

Warehouses are scientific storage structures especially constructed for the protection of the

quantity and quality of stored products.

Importance

- Scientific storage

The product is protected against quantitative and qualitative losses by the use of such methods of preservation as are necessary.

- Financing

Warehouses meet the financial needs of the person who stores the product. Nationalized banks advance credit on the security of the warehouse receipt issued for the stored products to the extent of 75 to 80% of their value.

- Price Stabilization

Warehouses help in price stabilization of agricultural commodities by checking the tendency to making post-harvest sales among the farmers.

- Market Intelligence

Warehouses also offer the facility of market information to persons who hold their produce in them.

Types of warehouse

1. On the basis of Ownership

a) Private warehouses: These are owned by individuals, large business houses or wholesalers for the storage of their own stocks. They also store the products of others.

b) Public warehouses: These are the warehouses, which are owned by the govt. and are meant for the storage of goods.

c) Bonded warehouses: These warehouses are specially constructed at a seaport or an airport and accept imported goods for storage till the payment of customs by the importer of goods. These warehouses are licensed by the govt. for this purpose. The goods stored in this warehouse are bonded goods. Following services are rendered by bonded warehouses:

(i) The importer of goods is saved from the botheration of paying customs duty all at one

time because he can take delivery of the goods in parts.

(ii) The operation necessary for the maintenance of the quality of goods - spraying and dusting, are done regularly.

(iii) Entre-pot trade (re-export of imported goods) becomes possible.

2. On the basis of Type of Commodities Stored

   a. General Warehouses: These are ordinary warehouses used for storage of most of food grains, fertilizers, etc.

   b. Special Commodity Warehouses: These are warehouses, which are specially constructed for the storage of specific commodities like cotton, tobacco, wool and petroleum products.

   c. Refrigerated Warehouses: These are warehouses in which temperature is maintained as per requirements and are meant for such perishable commodities as vegetables, fruits, fish, eggs and meat.

Activity 3: Dear students we are in the activity of sharing your knowledge about the local practices of storing commodities. Please share what you know about the types of storage for commodities and the tactics that the local farmers used to protect their agricultural commodities from being perished and other security issues.

A complete listing of storage facilities would be lengthy. Certainly home freezers, refrigerators storage cellars, store freezers and coolers, locker plants, grain elevators, common storage and commercial coolers and freezers would be included.

The importance of storage varies considerably from product to product. Nearly all the grain is stored on farms or at other points from the time of harvest until it is used.

The third type of cost is also carried by the owner of the product. It is somewhat less concrete than the other two types, but it is nevertheless very significant. It includes such expense as decline in value during storage and loss from shrinkage, deterioration, and rodent damage.

Risks in Storage:

Finally, it should be noted that there are different types of risks associated with the storage of farm products. Such as price changes, quality losses, and quantity losses.

The storage of agricultural commodities involves three major types of risks. These are:

1. Quantity Loss: The risks of loss in quantity may arise during storage as a result of the presence of rodents, insects and pests, theft, fire, etc.

2. Quality Deterioration: The second important risk involved in the storage of farm products is the deterioration in quality, which reduces the value of the stored products.

3. Price Risk: This, too, is an important risk involved in the storage of farm products. Prices do not always rise enough during the storage period to cover the storage costs.

2.2.2 GRADING AND STANDARDIZATION

2.2.2.1 Standardization

Standardization is concerned with the establishment and maintenance of uniform measurements of produce quality and/or quantity which makes selling and pricing possible. This function simplifies buying and selling as well as reducing marketing costs by enabling buyers to specify precisely what they want and suppliers to communicate what they are able and willing to supply with respect to both quantity and quality of product. In the absence of standard weights and measures trade either becomes more expensive to conduct or impossible altogether. In addis abeba other cities of Ethiopia such was the diversity of weights and measures used with respect to grain within the country, that it was easier for some districts to conduct trade with neighboring states in Ethiopia than it was to do business with other districts within addis abeba. Among the most notable advantages of uniform standards, are:

- price quotations are more meaningful
- the sale of commodities by sample or description becomes possible
- small lots of commodities, produced by a large number of small producers, can be assembled into economic loads if these supplies are similar in grade or quality

- Faced with a range of graded produce the buyer is able to choose the quality of product he/she is able and willing to purchase.

Quality differences in agricultural products arise for several reasons. Quality differences may be due to production methods and/or because of the quality of inputs used. Technological innovation can also give rise to quality differences. In addition, a buyer's assessment of a product's quality is often an expression of personal preference. Thus, for example, in some markets a small banana is judged to be in some sense 'better' than a large banana; white sugar is considered 'superior' to yellow sugar; long stemmed carnations are of 'higher quality' than short stemmed carnations; and white maize is 'easier to digest' than yellow maize. It matters not whether the criteria used in making such assessments are objective or subjective since they have the same effect in the marketplace. What does matter in marketing is to understand how the buyer assesses 'quality'.

Activity 4: standardization and grading are key a commodity's market acceptance and price discrimination. Because the farm commodities are produced by the farm societies where many of us come from; tell your local practices of standardization and grading system to your colleague and ask him/her what he/she knows about it (this can be done in calls, social media, etc.). Furthermore, what problems did you observed that rose due to absence of standardization and grading system in your local area.

2.2.2.2 GRADING

An efficient marketing system must move as large a quantity of product as necessary from producer to consumer and deliver them in a good condition as possible commensurate with reasonable marketing costs. There is little question but that the development of a system of describing products by grade names has greatly contributed to efficiency in both production and marketing.

The development of grading systems is closely associated with the growth of specialization in agriculture. With specialization buyers and seller could no longer meet on a common ground to bargain. A need thus arose for a simplified common language in which sellers could describe their products to buyers who in turn, could use it to specify their requirements.

The need for grading systems is particularly peculiar to agriculture. Industrial goods are, for the most part, produced to specification so that any desired number of quality variations can be produced at will. Labeling serves to describe these variations adequately. A firm producing pencil, for example, can set up a series of processes which turn out pencils, all of which are very similar. Thus, the pencil manufacturer can effectively regulate not only the quality of the pencils he produces but also the quantity of each grade he wishes to put on the market. No such systematic control is possible with agricultural products. In agriculture, varying conditions of production even on one farm and in one field or on one tree are so great that the crop has widely different characteristics. Since the quality of agricultural products cannot be altogether controlled, grading becomes particularly important.

Any one acquainted with the heterogeneity of farm products and the multitude of consumer likes and dislikes can appreciate the tremendous job of describing in a few words the quality characteristics of any one product. These characteristics are a bewildering combination of tangibles and intangibles like color, odor, taste, length, weight, size, strength, cleanliness, decay, age, maturity, and so on, indefinitely. If grades are to be useful, they must include and give proper weight to such characteristics as are important in determining price. Obviously these will vary with each product and user and can only be defined in a general way through experience.

Therefore, grading means the sorting of the unlike lots of the product into different lots according to quality of specification laid down. In another words, grading is the sorting out of the commodities into different groups on the basis of size, variety, taste, quality, colour etc. Such separation may or may not conform to established standards. Whereas standardization fixes the grades and does not allow them vary from season to season and year to year. The standardization function, however, involves the establishment and maintenance of uniform measurements.

Purpose of Grading

Although grading was established primarily as a means of facilitating the exchange of goods offered on the market by sellers located farm from trading centers, it serves many other useful functions. Some of these functions will be discussed as follow:

Most products are used in a variety of ways, many of which require products that have particular characteristics. Firms manufacturing breakfast cereal need grains distinct from those the livestock feed manufacturers use. Only certain kinds and grades of tobacco are suitable for cigarettes. Grading serves to classify goods according to use, eliminates waste that would otherwise occur, and, in general, simplifies the marketing system by making it possible for buyers to procure easily goods that meet their particular requirements. In other words, by sorting out products of the best quality, it is sometimes possible to find premium market for them that will return good prices, which at the same time makes it possible to offer products of lower quality to persons with less purchasing power.

Grades serve to facilitate price comparisons among markets, thereby giving both buyers and sellers better information on which to base their decisions.

Grading system also help to reduce the cost of financing storage by making it possible to describe more exactly the market value of the stored product and thereby eliminate much of the risk normally involved in quality differences.

Well-established and nationally administered grades greatly reduce the risks of fraudulent practices in marketing. Grading in itself does not eliminate fraud, but it does serve to handicap somewhat the operation of the unscrupulous handler.

Grades are also sometimes used as the basis for settlement of loss and damage claims when there has been negligence on the part of some handling agency.

Sometimes producers, particularly small ones located far from central markets, like to combine their products of similar qualities to obtain more favorable transportation rates or market outlets. Such pooling of products is greatly facilitated by grading, which makes it possible to divide sale produces more equitably.

Methods of Grading

Grading is meaningless unless it describes some aspects of the product that is connected with its use. Cotton could be graded according to the type of soil on which it is grown, but such information has no known utility and would therefore serve no purpose. Cotton is graded, therefore, according to its color and its staple length, because these factors are important in its

use and are elements which influence price. But it must be recognized that there are other elements which might influence price, but for which the grading cost would be prohibitive. For example, one might argue that processors would pay a premium price for cotton, which was sorted by individual fiber lengths: obviously, the cost of such grading would be enormously greater than any use we know would warrant.

The illustration of cotton grading just given reveals two distinct methods of grading, both of which are common in agriculture but which depend largely on the individual product and its end users. For simplicity, the two methods can be distinguished as "separative grading" and "non separative grading." When separative grading is used, the product is divided into parts with different quality characteristics: with non separative grading the product as a whole is simply classified and labeled. The cost of grading and the amount to be gained by separating products in to lots of different quality determine which method is to be used.

Grade Determination

The reason why a product is graded as it varies widely. For some products size may be the most important characteristics affecting price, whereas may be judged not by one characteristic but by a combination of money. For example, eggs are graded on condition of yolk, condition of white, depth of air cell, shape, cleanliness of shell, and soundness of shell. Important quality factors in grading poultry are amounts of flesh, fat, tenderness, conformation and bleeding. Therefore, when a grade is assigned to any of these products, all its characteristics must be appraised and properly weighted in accordance with their importance.

A final appraisal of quality factors is further complicated by the fact that many of them do not lend themselves to objective measurement. Size can be expressed in absolute terms of inches, but color or odor can only be subjectively measured by the senses.

One of the greatest criticisms of grading systems is that frequently the standards developed have little or no relation to either price or use. Although the preference of buyers should be reflect in grades, there is evidence that these are sometimes ignored. Perhaps the most serious shortcoming of present day grading is that the selection of qualities for consideration and their

determination of their respective importance are not based on scientifically measured tests of buyers preference.

2.2.3 TRANSPORTATION

Activity 5: What is transportation function? Why it is important in marketing of agricultural products? Have a look at the following paragraphs to address these questions. Good reading!

Transportation is Physical movement of produce from the place of production to the final consumer is called transportation. Transportation creates place utility. Transportation takes place through different means like road, rail, air, and water.

The transport function is chiefly one of making the product available where it is needed, without adding unreasonably to the overall cost of the produce. Adequate performance of this function requires consideration of alternative routes and types of transportation, with a view to achieving timeliness, maintaining produce quality and minimizing shipping costs.

Effective transport management is critical to efficient marketing. Whether operating a single vehicle or a fleet of vehicles, transportation has to be carefully managed, including cost monitoring - operations on different road types, fuel and lubrication consumption and scheduled and remedial maintenance and repair. Skillful management of all aspects of vehicle operations can also make a substantial contribution to efficient marketing especially with respect to optimum routing, scheduling and loading and off-loading; maximization of shift hours available, maintaining the vehicle fleet at an optimum size, taking account of time constraints on delivery, and collection times and judicious management of vehicle replacement and depreciation. Transport managers also have to weigh the advantages and disadvantages of owning, hiring or leasing transport.

One purpose of transpiration is to make farm products useful by transporting them from the farm to the consumer. It is well known that all goods cannot be most economically produced at the point of consumption. This is particularly true of agricultural products, which have pronounced regional advantage of production.

In transporting agricultural products to market, the primary concern is cost and the time it takes to move them from the farm to processing and consuming centers. The movement of goods within a farm, processing plant, or market is a minor consideration. Most transportation of this type is commonly classed as a production function.

Transportation time and costs influence the location of production centers, the market areas served, the qualities and sizes of products shipped to market, the form in which they are marketed, and the kind and type of transportation services used.

Transportation costs have played a tremendous part in the location of production. No matter how fertile the land, suitable the climate, how generous the supply of cheap labor, production cannot be profitably under taken if transportation charges to market exceeds market price less production cost.

- **Nature of transportation:** the availability of transportation facilities affect the storage capacities needed in the food industry. The speed and flexibility of the transportation system can also affect inventory and other storage costs throughout the food system. Transportation cost affects the location of food processing plants and food distribution ware houses.
- **Alternative modes of transportation:** agricultural and food products are transported by virtually every sort of carrier. Except pipelines. However, rail and truck are the dominant modes of transportation for farm and food products.

  1) **Road transportation**:

  It provides the most flexible schedules routes of all major transportation modes because they can go almost anywhere. Trucks usually have small have small shipments of high value goods over short distance. Trucks have a unique ability to move goods directly from farmers or where house to consumers; they often used in conjunction with other forms of transport that cannot provide door – to- door drivers

  Merits: It is cheap, safe and flexible.

  Demerits: It has got limited carrying capacity, slow speed, and unstable rates.

  2) Rail way Transport

  Merits: Most suitable for heavy and bulky commodities. Long distance is quickly covered, cheap, all weather friend transport,

Demerits: Inflexibility, non-suitable for local transport and lesser accessibility.

3) Water Transport:

It is the cheapest method of shipping heavy, low-value, non- perishable goods such as ore, grain, sand and petroleum products.

Merits: Cheapest means of transport, high carrying capacity, creator of international trade and especially suitable for certain areas (forest products).

Demerits: Low speed, seasonal difficulties, longer journey required, international and political problems and limited area of operation.

4) Air transport

It is the most expensive mode of transportation. It used most often for perishable products such as fruits and vegetables, flowers, for high value low bulky items and for products that must be delivered quickly over long distance, such as emergency shipments. The capacity of air transport varies depending on the nature of particular aircraft. Despite of being expensive, air transit can reduce ware housing and packaging costs and losses from theft or damage.

Merits: Rapid speed, no barriers and boon to perishable commodities.

Demerits: High rate, low carrying capacity, dependence on climatic conditions and high rate of accidents.

5) Pipelines: pipelines, the most automated transportation mode, usually belong to the shipper and carry the shipper's products. Most pipeline carry petroleum products or chemical. It transports products slowly but continuously and at relatively low cost.

6) **Other means:** transportation of agricultural product is also mainly done by horse, donkey, bullock or camel carts, tractors etc. this is merely depends on the beneficiaries and of the animals. Etc. back of animals depending up on the availability, quantity and other factors. Animal bake and trucks is the major means of transport used by majority of Ethiopian farmers.

Effects of transportation costs on location of production and markets

The advantage of specialization in production has long been recognized, but these advantages are tempered by the size and extent of the market. Transportation cost and time limit the size of the market that can be served from any one production point. As transportation costs are reduced, the advantages of specialization are greater, and this leads to even more

concentration of production in particular locations. The location of production is therefore a problem of weighting against transportation costs the economies that specialization makes possible.

In general, the economies of specialization in industry were gained by mass production in large-scale plants; in agriculture they were gained primarily by taking advantage of more fertile lands and suitable climates for crop production. But there are only approximate reasons for the location of production: there are many resisting forces at work, some of which significantly influence both the location of production centers and the markets served.

Transportation costs have played a tremendous part in the location of production. No matter how fertile the land, how suitable the climate and other natural resources, or how generous the supply of cheap labor, production cannot be profitably undertaken if transportation charges to market exceed market prices less production cost. In addition transportation cost has an effect on the determination of which market areas are served. Thus, the markets that will be served by a particular producing area will largely depend on the cost of transportation from that area relative to costs from competing areas.

Transportation costs may be altered by a change in the form of the product marketed, there by partially overcoming the importance of these costs in determining both the location of production centers and the market area to be served. Often the relationship between the rates for different forms of the same commodity is of greater concern to farmers than their over-all levels.

Just as transportation costs influence the form in which product will be marketed from a particular producing area, they influence the size and qualities of a product that will be marketed or, for that matter, harvested or produced. This may explain the reason of why products on the market from distant areas tend to be more carefully sized and of higher quality than locally produced ones.

The principal concern with transportation in agricultural marketing is to establish knowledge of the many services available that expedite the movement of farm products to market at the lowest cost consistent with quality maintenance requirement. For this purpose he/she must

choose between several modes of transportation railroad, motor truck, air and water transport, taking into consideration relative costs and services performed.

Transportation selection criteria

Agricultural marketer like any other marketers selects means of transportation on the bases of costs, transit time, reliability, capability, accessibility and security. The choice of a transportation mode may involve trade-off or exchange.

1) Cost: agricultural marketers compare alternative mode of transportation to determine cost benefit. When speed is less important, marketers desire lower costs. Factors affecting the costs of transportation are stated as follow.
    - Distance: an increase in distance over which a commodity is transported the total transportation cost increase, but the transportation cost per unit quantity of the product decrease after a certain distance.
    - Quantity of the product: the transportation cost per unit a commodity decreases with the increase in the quantity of the product being transported. It will be less cost of transporting full truck loads agricultural products than a few quintals of agricultural products.
    - Condition of the road: the cost of transportation will be high if the road is graveled or road at all.
    - Nature of the product: the cost of transportation per unit is high for products having the following characteristics; perishables (vegetables), bulkiness (straw cotton), fragility (e.g. tomato), inflammable (e.g. petroleum), specialty require (e.g. Livestock and milk).
    - Availability of return journey consignment: if goods are also available for transportation when a truck is to return to its starting place, per unit cost of transportation is less.
    - Risk associated: the transportation cost is less if the product is transported at the owner's sender's risk than when the risk is on the agency transporting the product.
2) Transit time: refers the total time a carriers has been possession f goods including the time requires for pick up& delivery, handling & moving b/n the point of origin to destination. Transit time obviously affects agricultural marketer ability to provide product on time.

E.g. a carload of peaches may be shipped to a closer destination if the fruit is in danger of ripening too quickly.

3) Reliability: the reliability of the mode of transportation is determined by the consistency of the service provided. Agricultural marketers must be able to count the carrier's ability y to deliver goods on time and in an acceptable condition.
4) Capability: refers to the ability the mode of transportation to provide appropriate equipment and conditions for moving specific goods. For example, many agricultural products must be shipped under controlled temperature and humidity.
5) Accessibility: a carrier ability to move goods over a specific rout or network (rail way, truck, water etc.) are the measure of its accessibility.
6) Security: security is measured by the physical condition of goods up on delivery. Affirm does not incur cost directly when goods are loss or damaged. Because the common carrier is usually held liable. All transportation modes have a security problem, and marketers must evaluate the relative risk of each mode.

2.2.4 PROCESSING

Most agricultural produce is not in a form suitable for direct delivery to the consumer when it is first harvested. Rather it needs to be changed in some way before it can be used. Processing is the conversion of farm produce into more consumable form. In other words, Processing is making the product in the desired form. Includes all manufacturing activities such as converting animals into meat, fresh tomatoes into canned and frozen tomatoes, preparation of butter, ghee from milk, wheat into flour and finally into bread. The nature of the product as well as consumer demands influence the extent of processing that occurs. Generally, Processing imparts form utility.

Activity 6: have you ever been seen a commodity which is processed or under processing? If your answer is yes, what positive or negative impact did you observed to the consumers, producers and nation as well.

Kohls and Uhl observe that:

"The processing function is sometimes not included in a list of marketing functions because it is essentially a form changing activity."

However, it is for this very reason that processing ought to be included as a marketing function. The form changing activity is one of that adds value to the product. Changing green coffee beans into roasted beans, cassava into gari or livestock feed, full fruit bunches into palm oil or sugarcane into sugar increases the value of the product because the converted product has greater utility to the buyer. How the form of produce is to be changed and the method to be used in bringing about such changes is marketing decisions. For example, some years ago when Ethiopia was looking to expand its tea business, a prototype manufacturing plant was established. The plant was capable of curing the tea and packing it in individual tea bags. At that point, tests were undertaken in which the product was compared with others already on the market. The results were encouraging. However, in the course of the marketing research, it was also discovered that ninety percent of the black tea consumed is blended and not the pure variety placed in tea bags by the Ethiopians. By going past the point of changing green leaf into high quality black tea, the Ethiopians were entering a nice market which is not what they intended at all. Timely marketing research would have directed Ethiopia to stop the form changing activity short of bagging since, at that time; Ethiopia did not have the acreage of tea, nor the resources, to develop a tea blending facility of its own. In the same way, a producer of fresh fruits may have pulping and/or canning facilities but if potential buyers want the flexibility of using the fruits in a variety of ways, then these stages of processing serve to reduce utility and value, rather than increasing them.

Of course, processing is not the only way of adding value to a product. Storing products until such times as they are needed add utility and therefore add value. Similarly, transporting commodities to purchasing points convenient to the consumer adds value. In short, any action which increases the utility of the good or service to prospective buyers also adds value to that product or service.

Ease of processing will become an increasingly important expectation of the food industry. Like all industries, reductions in the costs of capital equipment, wages and inventories are important objectives. For example, farmers who can deliver on the ‘just-in-time’ principle will contribute towards reducing a manufacturer's working capital and space requirements. Farmers who can do part of the secondary processing and/or performing functions such as the post-harvest treatment of the crop or transporting will be adding another advantage. Crops

that are specially bred or designed to facilitate processing (e.g. seedless fruits, featherless chickens, coffee beans without caffeine, low cholesterol meats) are another type of advantage that the food industry could expect from agriculture. In short, the competitive advantage will rest with those able to add most value and can differentiate what they are offering from that of other suppliers.

2.2.5 RISK BEARING

Activity 7: As a farming societies member, what kind of risk do you experienced or what kind of risk/s did you heard/observed hurting the farmers in your area or what kind of risks that farmers can experience in their farming operation/s.

In both the production and marketing of produce the possibility of incurring losses is always present. Physical risks include the destruction or deterioration of the produce through fire, excessive heat or cold, pests, floods, earthquakes etc. Market risks are those of adverse changes in the value of the produce between the processes of production and consumption. A change in consumer tastes can reduce the attractiveness of the produce and is, therefore, also a risk, or price change can adversely affects farmers' profitability and affordability of the commodity to the customers too. All of these risks are borne by those organizations, companies and individuals.

In general risk bearing may be insurance provision in case of physical risks or utilization of futures in case of price risks, but the entrepreneur may also bear risks in terms losses etc.

Risk bearing is often a little understood aspect of marketing. For example, when making judgments as to whether a particular price is a 'fair price' the usual reference point is the producer or supplier's costs. However the risks borne are rarely taken into account by those passing judgments and yet, almost inevitably, there will be occasions when the risk taker incurs losses. Stocks will spoil, markets will fall, cheaper imports will enter the country, consumer tastes will change, and so on. These losses can only be observed if adequate surpluses were generated in previous periods. Risk bearing must be acknowledged as a cost since what is uncertain is not whether they will occur, but when they will occur.

2.2.6 PACKAGING

Packaging is the first function performed in the marketing of agricultural commodities. It is required for nearly all farm products at every stage of the marketing process. The type of the container used in the packing of commodities varies with the type of the commodity as well as with the stage of marketing. For example, gunny bags are used for cereals, pulses and oilseeds when they are taken from the farm to the market.

Meaning of Packing and Packaging:

Packing means, the wrapping and crating of goods before they are transported. Goods have to be packed either to preserve them or for delivery to buyers. Packaging is a part of packing, which means placing the goods in small packages like bags, boxes, bottles or parcels for sale to the ultimate consumers. Packaging is the packing or covering the product in such sizes and pattern as to be most Marketable.

Functions of food packaging

Packaging has several objectives:

- **Physical protection** - The food enclosed in the package may require protection from, among other things, shock, vibration, compression, temperature, etc.
- **Barrier protection** - A barrier from oxygen, water vapor, dust, etc., is often required. Permeation is a critical factor in design. Some packages contain desiccants or Oxygen absorbers to help extend shelf life. Modified atmospheres or controlled atmospheres are also maintained in some food packages. Keeping the contents clean, fresh, and safe for the intended shelf life is a primary function.
- **Containment or agglomeration** - Small items are typically grouped together in one package for reasons of efficiency. Powders and granular materials need containment.
- **Information transmission** - Packages and labels communicate how to use, transport, recycle, or dispose of the package or product. Some types of information are required by governments.
- **Marketing** - The packaging and labels can be used by marketers to encourage potential buyers to purchase the product. Package design has been an important and constantly

evolving phenomenon for several decades. Marketing communications and graphic design are applied to the surface of the package and (in many cases) the point of sale display.

- **Security** - Packaging can play an important role in reducing the security risks of shipment. Packages
- **Transport and handling function**

  The packaging makes packaged goods suitable for transport and handling. It must be sufficiently strong and designed in such a way that it reduces the dynamic loads arising during transport and handling to the extent that they do not reach critical levels for the packaged goods.
- **Quality function**

  Packaging is the last manufacturing stage in the production process. Packaged goods leave the production line in a quality that guarantees that they are saleable and that they function correctly. The task of the packaging is to ensure that these characteristics of the packaged goods are upheld until the goods reach the customer, irrespective of any transport, handling and storage loads that may arise. Packaging serves to maintain the quality of the packaged goods and should therefore be an integral part of the consignor quality management system.

Types of packaging

An important distinction is to be made here between two types of packaging

- **Transport packing:** The product entering in to the trade need to be packed well enough to protect against loss damage during handling, transport and storage. Eg: fiberboard, wooden crate etc.
- **Consumer Packing:** This packaging holds the required volume of the product for ultimate consumption and is more relevant in marketing. E.g.: beverages, tobacco etc. The most important aspect when we look into packaging is the packaging cost

Advantages of Packing and Packaging:

Packaging is a very useful function in the marketing process of agricultural commodities. The main advantages of packing and packaging are:

1. It protects the goods against breakage, spoilage, leakage or pilferage during their movement from the production to the consumption point.
2. The packaging of some commodities involves compression, which reduces the bulk like cotton, jute and wool.
3. It facilitates the handling of the commodity, specially such fruits as apples, mangoes, etc., during storage and transportation.
4. It helps in quality-identification, product differentiation, branding and advertisement of the product.
5. Packaging helps in reducing marketing costs by reducing handling and retailing costs.
6. It helps in checking adulteration.
7. Packaging ensures cleanliness of the product.
8. Packaging with labeling facilitates the conveying of instructions to the buyers as to how to use or preserve the commodity. The label shows the composition of the product.
9. Packaging prolongs the storage quality of the products by providing protection from the ill effects of weather, especially for fruits, vegetables and other perishable goods.

2.2.7 EXCHANGE FUNCTION

Activity 8: Many are claiming that buying and selling should be one of the key agricultural marketing functions. So, what will be happened if buying and selling is excluded from the marketing functions? And what role it will play if it's considered as a function?

The movement of agricultural products from producer to consumer involves numerous physical operations calling for diverse skills. In many constancies, it is possible for a single owner to employ and supervise all the diversely skilled workers at necessary at one point, but the marketing process as a whole involves operations at many different location, often far removed from the reach of single management. Thus, the marketing process is a series not only of physical operations but also of interspersed purchases and sales.

Different types of sales occur at the various stages of marketing, but the student of agricultural marketing is more concerned with those sales early in the process to which he/she

is likely to be a party. It is also well to recognize that, at any one point, there are many alternative methods of selling.

The number of times a product is bought and sold increases with the complexity of its marketing process. The marketing of many agricultural products involves some degree of change in the form of the product. Frequently the product is combined with others, and its original identity is lost. Continuous, single ownership tenders such condition is practically impossible. Then, too, the supply and quality of individual agricultural products vary greatly over relatively short period of time, so wide fluctuations in prices constantly occur. Under such condition, producers are anxious about the price they may realize for their products, and they may become relevant to give up control or ownership until they know what the price is to be. Nevertheless, circumstances sometimes prevent agreements on price before control of a product is partially or wholly released. The producer is constantly faced with the problem of taking such risks. He may sell outright locally or he may hold his product for a sale further along in the marketing process.

We must repeat here that one of the chief problems in buying and selling agriculture products is that they are, or were, living organisms. Decay is in the process during marketing whether the product be orange, potatoes, beef, or fish. All such items are perishable. Thus, the buyer in the terminal market is never sure of what he is getting if he buys at the shipping point because the quality of any product when it leaves the shipping point is not the same as its quality when it arrives in the terminal market. This process of gradual deterioration often explains why the selling sees it one way and the buyer another when they attempt to agree on price. Sometimes the risk of price changes during the time necessary to ship a product to market alters this attitude. If prices are rising, buyers and sellers are both willing to assume some quality risk by getting or keeping ownership early in the marketing process and thus gain the benefit of price increases that occur during the time it takes to move the product to market. But if prices are falling neither buyer nor seller wants to maintain ownership any longer than necessary, and both try to shed this risk as soon as possible.

The risk of price changes in buying and selling farm products has led to hedging operation in the future markets.

Exchange functions are those activities involved in the transfer of title of raw and processed agricultural products and services (food & fiber). It involves. Buying and selling. Here price determination is always considered.

a) **Selling function**

Selling occurs in several ways in agricultural marketing and includes: selling of supplies and services to farmers, selling of farm produce to assemblers & processors; selling of food & fiber to consumers. All these involve price acceptance and merchandising (i.e. display of goods, decisions on place and time to approach customers, promotion of goods, ads package).

Ways of Selling

There are numerous types of sale in the marketing of agricultural products. Here sales may be made by way of (1) inspection (2) sample, or (3) description.

Inspection – Sale by actual buyer inspection of the product before purchase is without question the oldest method of consummating a sale. In its simplest form, buyer, seller, and product come together, the product is inspected, and a price and other terms of sale are agreed upon. Buying by personal inspection may be primitive, but it has always been the most satisfactory method of executing a sale. This has been particularly true for agricultural products, because they vary so greatly. The more accurately a product can be sorted and described, the less need for the expense of personal inspection. But a description of the quality of agricultural product is difficult, because (1) nature combines quality factors in varying proportion, (2) a vast number of producers exercise all degrees of quality control in production and marketing, and (3) producers have different ideas of quality.

Sample – Because the expense of personal inspection by the buyer is sometimes not justified, other means of quality determination have developed. The next best alternative to personal inspection of the product is inspection of a part of the product of a sample.

Buying and selling by sample is effectively used for bulky products, such as grain, cotton, and milk, in which quality is reasonably consistent throughout the entire lot. The greater the variability of quality throughout a given lot, the less satisfactory sampling will be as a method of buying and selling.

Description – Buying and selling by description is the third and most advanced method of making a sale. This method depends of upon the development of a standard descriptive language, or of symbols to represent different qualities.

The earliest form of buying and selling by description was by means of producers' brand. Certain producers found that, by establishing a reputation of reliable quality for their brands, they could command premium price.

b) Buying function

Involves the activities associated with finding out sources of supply, assembling products and purchases. Assembling involves delivering the farm produce from several farmers to a central location into a larger lot to enable other functions in marketing to occur - i.e. massing quantities of farm products & includes vegetable packing sheds, grain elevators, livestock sale barns etc.

2.2.8 FINANCE FUNCTION

Financing (Capital): Is the provision of capital (money) to carry out the various aspects of marketing. Anywhere in take marketing process, where delay takes place (such as storage, transportation, manufacturing) someone must finance the holding of goods.

Finance required for agricultural marketing represent funds required for moving the crops from the farm to the consumer or the manufacturer for further processing. Thus there exists close relationship between agricultural productions, and consumption and industrial production. The growth of agriculture is a precondition for industrial development

2.2.9 INTELLIGENCE FUNCTION

Market Intelligence (Advertising and Promotion): Is the function of collecting, interpreting and dissemination of market information. For example, an efficient pricing mechanism depends on well-informed buyers and sellers. What to buy and sell, when to store and how much, where to transport etc. require good market information.

Market intelligence includes information relating to such facts as the prices that prevailed in the past and market arrivals over time. It is historical nature. An analysis of the past helps to take decision about the future.

Marketing Information System is defined as a set of procedures and methods for the regular and planned analysis and presentation of information for the use of marketing decisions.

CHAPTER 3: MANAGING MARKET SHOCKS

Content

3.0 CHAPTER OBJECTIVES

Upon completion of this chapter students will be able to measure different market shocks of agricultural products. Inline to this they will be able to:

- explain the concepts of demand
- apply demand curve in agricultural products
- numerically solve for quantity demanded and price of agricultural products
- apply the concepts of elasticities and flexibilities for decision making in marketing of commodities
- analyze complex relationships of different agricultural products
- measure market shocks of agricultural products using equilibrium displacement model

3.1 INTRODUCTION

Market shock is unavoidable! Because, either an intervention of the government, uncontrollability of the nature, shift in consumers' taste, or any other reason/s. Before having

a look at the measures of market shock for agricultural products, it's better to discuss about the basic concepts of economics, i.e., demand and supply. Then it will be relatively easy to understand the market shock measurement models you'll find in this module.

3.2 BASICS OF DEMAND FOR AGRICULTURAL PRODUCTS

3.2.1 AN OVERVIEW OF DEMAND

In a highly organized and competitive economy, it is not the farmer who determines what he will produce on his farm over a period of years. Nor is it the professor or the country agricultural agent. Nor it is the wholesaler or retailer. In the final analysis, it is the consumer who determines what and how will be produced. It would be poor business to produce an item if consumer did not want it enough to pay the farmer for producing it. The consumer can take an item, or leave it just as easily. If he takes it, all is well; if he refuses it, the farmer suffers.

3.2.2 MEANING OF DEMAND

Demand as considered in this text, refers to the amount of a product that a given population will buy under specified condition of time and price. Since purchases at any one time vary with price, we actually do not get one quantity, but rather a series of quantities corresponding to the different prices that might exist. This series of quantities constitute a demand schedule or a list of the quantities the given population will buy at different prices.

The population involved, and by population we mean "who" as well as "how many" and "where", needs to be clearly specified. Likewise, time must be specified, since demand changes from one time to another. Price, too, must be clearly specified, because a given population may depend on the level of prices, take sharply different amounts of a product.

INDIVIDUAL VS. TOTAL DEMAND

Definition of individual demand: Individual demand is the list of the quantities of a product that a person will purchase at various prices. Such a list will be applicable to one product only and at one particular time. It may be different at any other time.

A house wife, for example, might have the demand schedule for apple that follows:

Table 3.1: demand schedule

Possible Prices	Apples Demanded
6 cents	1
5 cents	2
4 cents	3
3 cents	5
2 cents	8

When she goes shopping she may find one of the prices given above. Probably she does not know what the price will be until she gets to the store, but the quantity she buys probably will be the amount for which she has a demand at the price.

Considerations: the quantity of apples, which a housewife demands at a given price, will tend to be the amount that gives her the greatest satisfaction for her money. This means, then, that in arriving at the quantity of apples demanded at any price, the housewife faces two considerations.

First of all, she considers the amount of money she has to spend. As she has more money to spend, she will probably buy larger quantities or different products.

Secondly, she considers the marginal utility of apples. Not only must she consider the marginal utility of additional apples, but she must also consider it in relation to additional units of oranges, steak and others. Her demand for apple will certainly be affected by both by market prices and her demand for other goods.

To summarize, it should be pointed out that an individual will generally buy more of a product at low price than at a higher one. This is simply the law of demand. Another way of saying this is that a consumer will pay less for the second unit of a product than the first, less for the third than for the second, and so on.

Demand schedules vary from person to person and, for one person, may vary from time to time and from product to product. The changes from time to time are probably slow and infrequent. Whereas a person may buy more of an item at one time than another, this is more often due to a change in the point on the curve where the market is operating than to any real change in the demand curve. An individual demand schedule also varies with the quantity of the product.

Total demand

The total of individual demand for a product makes up what is called "total demand". The individual's demand, as we have explained in the previous sections, has little or no effect on price. The individual takes the price as given because its determination is beyond his control. Total demand, on the other hand, is one of the most important factors that determines what the price of the product will be.

Total demand may be illustrated by the data in table, which show the demand for apples in a city of 1000 people. Person A in the table is a wealthy many willing to buy eight apples regardless of the price. Person B, C and D are not as well to do and their purchases depend more on price. Person C, for example, would buy one if the price were 5 cents, two if the prices were 3 or 4 cents and three if the price were 2 cents.

Table 3.2 Total demand for apples in a city of 1000 people

Possible Prices (Cents)	Apples Demanded by					
	Person A	Person B	Person C	Person D	996 Other People	Total Demand
6	8	1	1	0	490	500
5	8	2	1	0	739	750
4	8	3	2	1	1236	1250
3	8	5	2	1	1984	2000
2	8	8	3	2	3979	4000

As it was indicated in the table, the individual demand of the four people plus the individual demands of the 996 other people in a city of 1000, gives the total demand for apples in the

community. At the highest price of 6 cents, 500 will be demanded; and at the lowest price of 2 cents, the total demand will be 4000 apples.

3.2.3. DEMAND CURVE

3.2.3.1 Uses of Demand Curves

Demand curves are used to predict the possible price when any given quantity of a product is marketed. Thus, in the above table, if 2000 apples were placed on sale in the city of 1000 peoples it would take a price of about 3 cents to move them. Producers of farm products may make this kind of use of demand curves. Production of farm products is a long process, and all producers tend to compete freely with one another. Generally, the entire crop is marketed from what it will bring, whether or not it turns out to be less than the cost of production.

Another use made of demand curves, the reverse of the use made by farmers, is to estimate the volume that will be sold when price is fixed and held at a certain point. If a price of 4 cents were fixed for apples in the above city, then you have 1250 as the amount that will be taken at the fixed price. Industries often make use of demand curves in this way i.e., they sell as many units as possible at the set price, and adjust output to avoid shortages or heavy surpluses.

3.2.3.2 PROPERTIES OF DEMAND CURVE

What is demand curve?

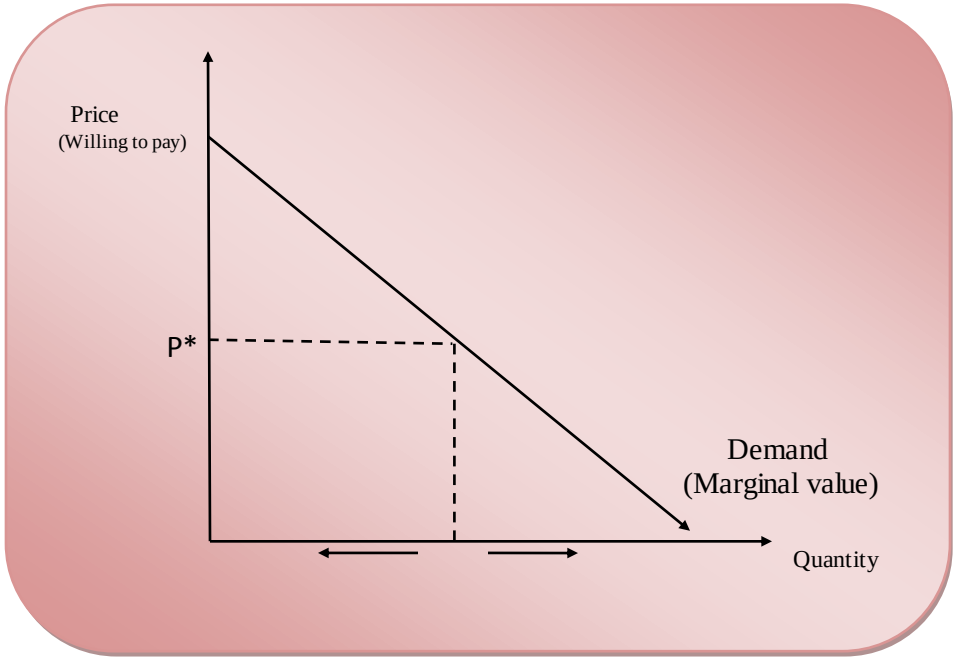
Graphically shows how much of a good consumers are willing to buy (holding their incomes, preferences, and other things constant) at different prices. The demand curve shows the relationship between price and quantity demanded, holding other things constant. Economists frequently use the Latinism "*ceteris paribus,"* which means "other things equal".

What does demand curve indicates?

Demand curve

- Illustrates all quantities desired at every alternative price.
- Describes the marginal value of the last consumed unit.
- Downward sloping (Law of Demand)
- Continue to consume/buy while MB > MC- continue to consume until the benefit from the next unit exceeds the costs of the next unit.

Figure3.2: demand curve



Note that the curve labeled "Demand" slopes downward to the right. In other words, as the price gets lower, the corresponding unit of banana consumed per given time increases. This graph shows a negative relationship between the price and quantity demanded of banana. Recall that is just what the law of demand claims! As the price of the good goes down, we just move along the demand curve to determine the quantity demanded at the new price.

Some of the characteristics of demand curve

- Constrained by income (or wealth).
- Movements along and shifts of the demand curve:
  - ✓ Change in price leads to movement along demand curve.
  - ✓ Change in external variable (e.g., income, price of other goods) leads to shift of the demand curve.

3.2.4 NUMERICALLY SOLVING FOR QUANTITY DEMANDED AND PRICE

Suppose Sarah consumes beef according to the following consumption function:

$$Q_{sarah} = 60 - 0.5p_{beef}$$

Perform the following:

1. Calculate the inverse demand function (i.e., solve for P).

2. Calculate Sarah's beef demand if the price of beef is $10. What if it's $18?

3. Calculate the price of beef if Sarah consumes 25 kilo gram of beef. What if she consumes 60 kilo gram?

Steps to solve:

1. Add P_{beef} to both sides; subtract Q_{sarah} from both sides; divide through by 0.5

$$P_{beef} = 120 - 2Q_{sarah}$$

1. Beef demand:

If Pbeef = ETB 10 $\longrightarrow$ $Q_{sarah} = 55$

If Pbeef = ETB 18 $\longrightarrow$ $Q_{sarah} = 51$

3. Price of beef:

If $Q_{sarah} = 25$ $\longrightarrow$ $P_{beef} = \$70$

If $Q_{sarah} = 60$ $\longrightarrow$ $P_{beef} = \$0$

Activity 1: As indicated above the beef factory has formulated sarah's beef consumption function and the simple working guideline is specified in step one, givens are indicated in step 2 and the answers are showed in the final step. Now you will seriously show how the answers are driven and challenge your colleague/s who is taking this course.

3.2.4.1 AGREGATE DEMAND

1. Graphical Aggregation of Demand

There are millions of consumers who consume agricultural commodities. How do we determine the demand functions for the entire population? We aggregate all individual demand functions - horizontal aggregation.

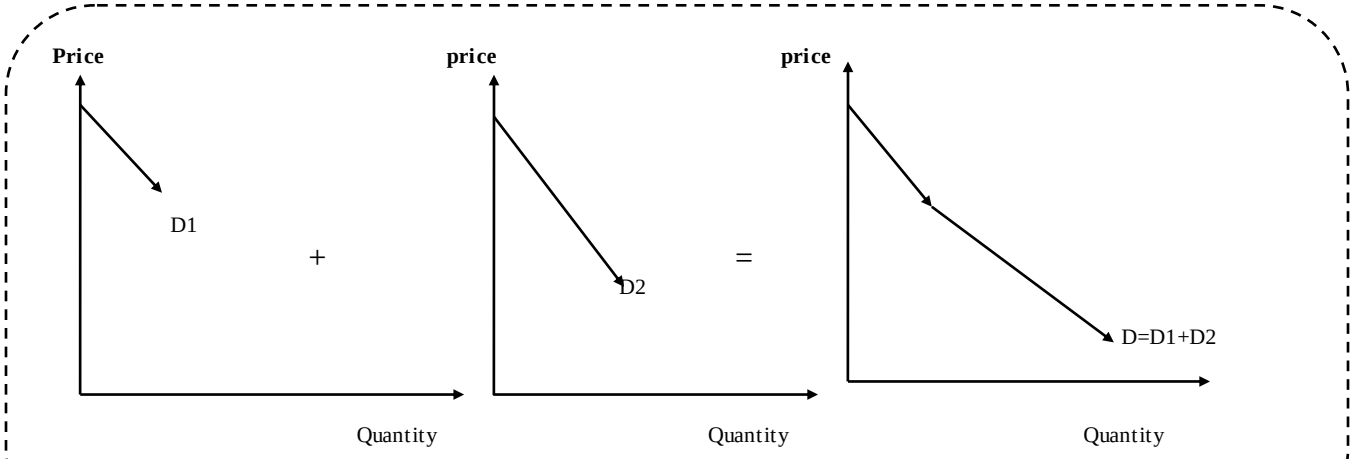


Figure 3.3: market demand curve -horizontal aggregation of individual demand curves

2. Numerically Aggregating Demand

Suppose there are four consumers with the following demand functions:

$$Q_{sarah} = 60 - 0.5p_{beef}$$
$$Q_{robel} = 30 - 0.2p_{beef}$$
$$Q_{kebede} = 45 - 0.35p_{beef}$$
$$Q_{kasu} = 50 - 0.45p_{beef}$$

To find aggregate demand, you simply add the four equations:

$$Q^D_{beef} = Q^D_{sarah} + Q^D_{robel} + Q^D_{kebede} + Q^D_{kasu}$$

$$Q_{sarah} = 60 - 0.5p_{beef}$$
$$+$$
$$Q_{robel} = 30 - 0.2p_{beef}$$
$$+$$
$$Q_{kebede} = 45 - 0.35p_{beef}$$
$$+$$
$$Q_{kasu} = 50 - 0.45p_{beef}$$
$$Q^D_{beef} = 185 - 1.5P_{beef}$$

3.2.5 ELASTICITIES AND FLEXIBILITIES OF DEMAND FOR AGRICULTURAL PRODUCTS

Activity 2: How do you know the possible impact of change in price of the commodity you are selling on its demand? Due to different reason you may decide either to increase or decrease price of the commodity. So, do you think that change will come in response to the price fluctuation? How will you measure the percentage changed. Please discuss with your class mates or think and write your answer on your paper.

When measuring the demand, it is very useful to know the relationship between the change in quantity demanded after a change in price and vice versa.

But: Doing so using only the slope $\frac{\Delta Q}{\Delta P}$ does not allow for comparisons across goods.

Elasticities and flexibilities provide a unit-less measure that describes the relationship between changes in the quantity demanded and price. In other words, you can directly compare how a change in price will affect quantity.

DEFINITIONS

Elasticity: indicates the percentage change in quantity demanded if price changes by 1%

$$\varepsilon = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

This can also be thought of as the product of the slope of a demand curve and the ratio of price to quantity.

Flexibility: indicates the percentage change in price if quantity demanded changes by 1%.

$$\phi = \frac{\Delta P}{\Delta Q} \times \frac{Q}{P}$$

This can also be thought of as the product of the slope of an inverse demand curve and the ratio of quantity to price.

Hypothetical example

Sarah's demand and inverse demand functions are as follows.

$$Q_{sarah} = 60 - 0.5p_{beef}$$

$$P_{beef} = 120 - 2Q_{sarah}$$

Calculate the following:

1. Sarah's price elasticity of beef if:

   P = 60 and Q = 30

   P = 80 and Q = 20

   P = 20 and Q = 50

2. Beef's flexibility:

   P = 60 and Q = 30

   P = 80 and Q = 20

   P = 20 and Q = 50

Let's solve the price elasticity when P = 60 and Q = 30:

1. For the elasticity, we need the slope, $\frac{\Delta Q}{\Delta P}$

Recall that for a simple linear function, y = a + mr, 'a' is the intercept and m is the slope. In the Sarah's demand function, Q_{sarah}, we see that a = 60 and m = -0.5. So, m = $\frac{\Delta Q}{\Delta P}$ = -0.5

2. Now that we have the slope, we can solve for the elasticity: $\varepsilon = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$

$$\varepsilon = -0.5 \times \frac{P}{Q}$$

$$\varepsilon = -0.5 \times \frac{60}{30}$$

$$\varepsilon = -1$$

3. What does this mean? Well, when price increases by 1%, Sarah will consume 1% less beef. This makes intuitive sense because the demand function is downward sloping. So, if price goes up, the demand for beef will go down.

Activity 3: Considering the first given, i.e., P = 60 and Q = 30, we solved how customers will responsive to a price and the answer is indicated above. Now is your turn! You will tell your friend/s whether sarah is sensitive to a price change (whether price elasticity of demand is elastic or in-elastic) considering the remaining givens. Compete with your colleagues when will post the answers on your telegram or other social media group accurately and promptly.
Thank you!

Now, let's solve the beef flexibility when P = 60 and Q = 30:

1. For flexibilities, we again need a slope. But in this case, the slope we're looking for is $\frac{\Delta P}{\Delta Q}$.

That is, how does price change when quantity of beef changes? To get this slope, we use the inverse demand function, $P_{beef} = 120 - 2Q_{sarah}$ as with the elasticity, the slope is

$$m = \frac{\Delta P}{\Delta Q} = -2$$

Now that we have the slope, we can solve for the flexibility: $\phi = \frac{\Delta P}{\Delta Q} \times \frac{Q}{P}$

$$\phi = -2 \times \frac{30}{60}$$

$$\phi = -1$$

2. What does this result mean? Well, when quantity demanded of beef increases by 1%, then the price of beef will decrease by 1%.

PROPERTIES OF DEMAND ELASTICITIES

- For normal goods, demand elasticity is negative.

✍ If ε< -1, then:

- The good is price elastic.
- A 1% change in price will cause a greater than 1% change in quantity demanded.
- Total revenue changes in the direction of quantity (i.e., if price goes down, then quantity and total revenue go up).

✍ If -1 < ε < 0, then:

- The good is price inelastic.
- A 1% change in price will cause a less than 1% change in quantity demanded.
- Total revenue changes in the direction of price (i.e., if price goes up, then total revenue go up).

PROPERTIES OF DEMAND FLEXIBILITIES

- For normal goods, demand flexibility is negative.

If $\phi < -1$, then:

- The good is price flexible.
- A 1% change in quantity demanded will cause a greater than 1% change in price.
- Total revenue changes in the direction of price (i.e., if quantity goes down, then price and total revenue go up).

If $-1 < \phi < 0$, then:

- The good is price inflexible.
- A 1% change in quantity demanded will cause a less than 1% change in price.
- Total revenue changes in the direction of quantity demanded (i.e., if quantity goes up, then total revenue go up).

3.2.6 ANALYZING MORE COMPLEX RELATIONSHIPS

Activity 4: As you know from your principles of economics, price is not the only determinant for consumption of a given commodity. So, what other factors can affect consumption for commodity? How can you measure their effects? For your hint have you ever been thought about cross-price elasticity? Think twice then go for reading of the paragraphs below.

Realistically, demand for a good must be able to take into account factors such as income and prices of other goods. Let's reconsider Sarah's demand function for beef:

$$Q_{sarah,beef} = 60 - 0.5P_{beef} + 0.1P_{pork} - 0.2P_{bbq\ sauce} + 0.25I$$

P_{beef}	P_{pork}	P_{bbq}	Income	$Q_{sarah,\ beef}$
30	**20**	**5**	**60**	61

From Sarah's demand function, we can see that three things can affect Sarah's consumption of beef:

1. Change in the price of beef.

2. Change in the price of another good.

3. Change in Sarah's income.

This implies that we can calculate three types of elasticity measures:

1. Own-price elasticity: the percentage change in quantity demanded if the price of the good changes by 1%.

2. Cross-price elasticity: the percentage change in quantity if the price of another good changes by 1%.

3. Income elasticity: the percentage change in quantity if income changes by 1%.

HOW DO WE FIND DEMAND ELASTICITIES?

Remember that to calculate elasticity, we need a slope $\frac{\Delta Q}{\Delta P}$, and the quantity and price at which we want to determine the elasticity. We already know the quantity and price, so we need to determine the slope.

In a more complex equation (such as above) there are numerous "slopes." For example, there is a slope for beef ($\frac{\Delta Q_{beef}}{\Delta P_{beef}}$), there is a slope for pork ($\frac{\Delta Q_{beef}}{\Delta P_{pork}}$), for bbq sauce ($\frac{\Delta Q_{beef}}{\Delta P_{bbq-souce}}$), and income ($\frac{\Delta Q_{beef}}{\Delta I_{sarahj}}$)

This implies that we can calculate four elasticities.

How do we find each of the "slopes?" Well, if we use our intuitive thinking, we can see that a slope tells us the following: When everything else is the same, the quantity of beef demanded changes by a certain amount when a particular price changes. Another way to interpret "when everything else is the same" is to do the following:

1. Determine the elasticity that you want to calculate.

2. Based on this, determine the price that you're interested in.

3. Set all of the other prices to zero. Re-write the demand function.

For example, suppose that you're interested in determining the own-price elasticity of beef. That is, you'd like to know how much the quantity of beef demanded will increase when the price of beef decreases. So, you're interested in looking at P_{beef}. Thus, set all the other prices (and income) equal to zero:

$$Q_{sarah;beef} = 60 - 0.5P_{beef} + 0.1.(0) - 0.2.(0) + 0.25.(0)$$

$$Q_{sarah;beef} = 60 - 0.5P_{beef}$$

Now you have a very familiar demand function, which has the form y = a + mx. From here, you can directly get the slope, $m = \frac{\Delta Q}{\Delta P} = -0.5$.

Then, simply use the formula for an elasticity to solve:

$$\varepsilon = -0.5 . \frac{30}{61}$$

$$\varepsilon = -0.245$$

In a similar fashion, we calculate the cross-price and income elasticities.

3.3 EQUILIBRIUM DISPLACEMENT MODELS (EDM)

3.3.1 Introduction

Dear students at the beginning of this chapter, you were told that before discussing about the actual market shock measures, it's better to know about the basics of demand. In the meantime, with no doubt you was thinking about how to measure the possible market shock/s that would create either by the nature, government interventions, or any other reason. Now we believe that you are in a position to read about the measures of market shock. Basically, in this module you will find equilibrium displacement model as a market shock measurement.

Activity 5: if you failed to establish controlling mechanism, market shock is inherent in agricultural products. Therefore, if an intervention from the government, nature or any other destabilized the commodity market/s how will you measure the possible market shocks?

What is equilibrium displacement model?

EDM calculations are excellent for analyzing events such as:

- Market shocks to the supply or demand.
- Government policies that affect prices.
- Interaction of substitutes and complements.

3.3.2 TYPES OF EQUILIBRIUM DISPLACEMENT MODEL (EDM)

While some of the interventions or changes or scenarios affects the whole market others only affects a single market only. Therefore, depending on the number of commodities being affected by the intervention, changes or any other scenario, equilibrium displacement model could be single commodity equilibrium displacement or general equilibrium displacement model.

3.3.2.1 SINGLE COMMODITY EQUILIBRIUM DISPLACEMENT MODEL (EDM) ANALYSIS

Consider a basic scenario:

1. There is a negative shock to the supply of wheat, causing the supply curve to shift inward.
2. The resulting rise in price causes a decrease in both the quantity demanded until a new equilibrium is reached.
3. **Question**:

   How much did the price and quantity actually change due to the shock?

   That is:

   (a) What is the percentage change in quantity demanded (%ΔQD)?

   (b) What is the percentage change in quantity supplied (%ΔQS)?

   (c) What is the percentage change in price (%ΔP)?

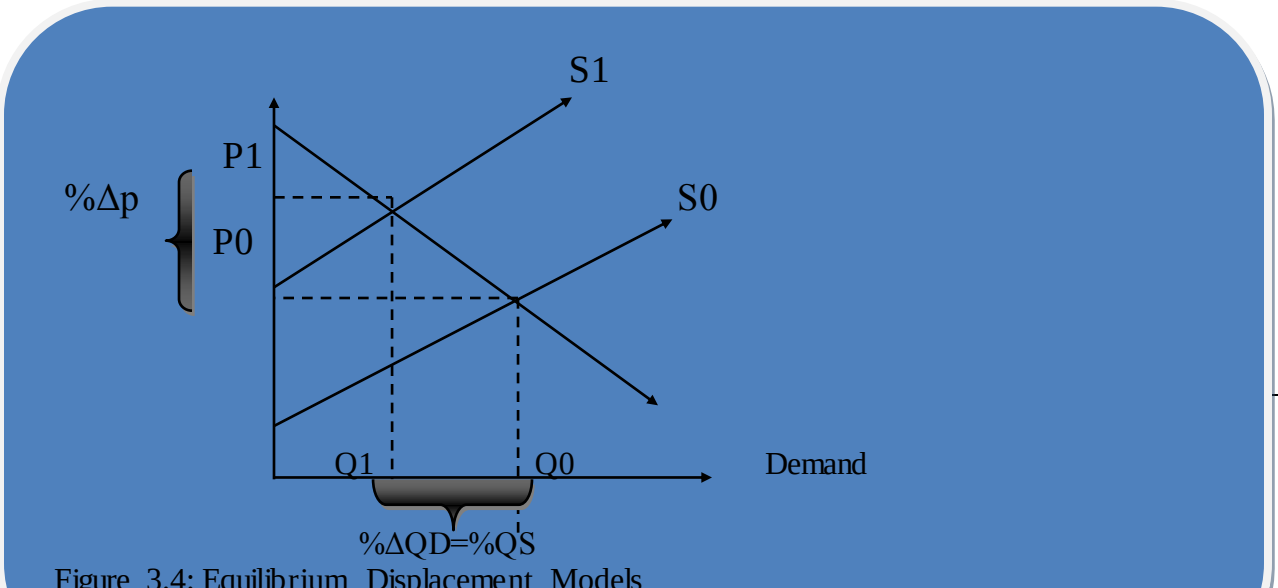


Figure 3.4: Equilibrium Displacement Models

To answer these questions, we do need some information. Specifically we need:

- Elasticities of supply and demand curves ("D and "S).
- The amount of the shock (shift) to the supply curve (SS).
- Once we have these, we can solve for the changes in quantity demanded and supplied using the following formulas:

$$\%\Delta Q_D = \varepsilon_D.\%\Delta P + S_D$$
$$\%\Delta Q_S = \varepsilon_S.\%\Delta P + S_S$$

Question: calculate %ΔP?

$$\varepsilon_D.\%\Delta P + S_D = \%\Delta Q_D = \%\Delta Q_S = \varepsilon_S.\%\Delta P + S_S$$
$$\varepsilon_D.\%\Delta P + S_D = \varepsilon_S.\%\Delta P + S_S$$
$$0 = \varepsilon_S.\%\Delta P + S_S - \varepsilon_D.\%\Delta P + S_D$$
$$0 = (S_S - S_D) + \%\Delta P\,(\varepsilon_S - \varepsilon_D)$$
$$\%\Delta P = \frac{(S_S - S_D)}{(\varepsilon_S - \varepsilon_D)}$$

Note: that the **denominator** $(\varepsilon_S - \varepsilon_D)$ is always positive.

Example

Suppose that due to a failure of eradication, the wheat production has caused a substantial reduction in Ethiopia wheat supply. The resulting negative shift of the supply curve causes the quantity supplied to go down by 10%. Analyze the changes in price and quantity demanded/supplied in the wheat market, knowing that the following is true:

$Elasticity\ of\ wheat\ supply\ (\varepsilon_S)$	1.5
$Own-price\ elasticity\ of\ wheat\ demand(\ \varepsilon_D)$	-2

1. First, you need to analyze what is happening. A drop in quantity supplied is 10% -this is the exogenous shock (Ss = -10%). We model this as following:

$$\%\Delta Q_S = \varepsilon_S.\%\Delta P - 10\%$$

2. Now, the reduction in quantity supplied will increase the prices that producers charge for wheat and consumers pay for wheat. The change in price is the endogenous readjustment of the equilibrium in the wheat market. How do we determine this adjustment?

We need to solve for the unknown %ΔP, which will tell us the true price adjustment due to the supply shock. In other words, %ΔP reveals the true adjustment in price, after taking into account the elasticities of both the supply and demand curves. We solve this as we did above:

$$\varepsilon_D .\%\Delta P + S_D = \%\Delta Q_D = \%\Delta Q_S = \varepsilon_S .\%\Delta P + S_S$$

$$\varepsilon_D .\%\Delta P + S_D = \varepsilon_S .\%\Delta P + S_S$$

$$-2 .\%\Delta P + 0 = 1.5 .\%\Delta P - 10\%$$

$$10\% = 3.5 .\%\Delta P$$

$$\%\Delta P = 2.86\%$$

INTERPRETATION:

This indicates that the effect of the wheat production caused prices to rise by 2.86% as a result in the drop of quantity supplied. This result should make sense, because we know that a negative supply shock will cause prices to rise.

3. We know how much the price of wheat will increase, but we don't know how much quantity supplied/demanded changed. We can find out by simply plugging in %ΔP into the equation for $\%\Delta Q_D$ or $\%\Delta Q_S$.

$$\%\Delta Q_D = \varepsilon_D .\%\Delta P + S_D$$

$$\%\Delta Q_D = -2 .2.86\% + 0$$

$$\%\Delta Q_D = -5.72\%$$

Because we are back in an equilibrium, we know that %ΔQS was exactly the same.

Exercise 1: Dear students the following is an additional practice that you are supposed to solve based on the above example of single commodity equilibrium displacement model.

Consider the following information:

$Elasticity\ of\ apple\ supply\ (\varepsilon_S)$	3
$Own-price\ elasticity\ of\ apple\ demand\ (\varepsilon_D)$	-2.5
$Elasticity\ of\ pear\ supply\ (\varepsilon_S)$	5
$Own-price\ elasticity\ of\ pear\ demand\ (\varepsilon_D)$	-3

Analyze the percentage change in prices and quantities if the following scenarios occurred:

1. A rise in the price of oranges causes the demand for apples to increase by 15%.

2. A tax is imposed on pear producers, causing pear production costs to rise by $5/k.g, when the current price of pears received by producers is $50/k.g.

3. A drop in apple supplies and the resulting rise in apple prices cause the demand for pears to increase by 5%. Assume that apples and pears are substitute goods.

Question: calculate $\%\Delta P$ and quantities for apple and pear

3.3.2.2 GENERAL EQUILIBRIUM DISPLACEMENT MODELS- GEDM

In the simple EDM calculation, we consider only "partial equilibrium." In other words, we only ask the question: How does a shock affect one market? This is not very realistic! Shocks in one market can affect related markets (such as substitute or complementary goods), which can then cause feedback effects.

For example

Consider Additional practice problem 3. You are told that apple supplies decrease, causing apple prices to rise and the demand for pears to rise, because apples and pears are substitute goods. However, the rise in the demand for pears will then cause a feedback effect on the apple market. That is, higher pear demand will increase pear prices and cause some consumers to demand more apples, in turn causing apple prices to rise further. **Suppose that the supply of apples decreased by 10%. How do we solve for the changes in the price of apples** $(\%\boldsymbol{\Delta P}_{apples})$ **and price of pears** $(\%\boldsymbol{\Delta P}_{pears})$?

How do we analyze this particular scenario? Well, it seems intuitive that we will be analyzing both the apple and pear markets, and we also need some way to determine the interaction.

Assume that:

$Elasticity\ of\ apple\ supply\ (\varepsilon_S)$	3
$Own-price\ elasticity\ of\ apple\ demand\ (\varepsilon_D)$	-2.5
$Elasticity\ of\ pear\ supply\ (\varepsilon_S)$	5
$Own-price\ elasticity\ of\ pear\ demand\ (\varepsilon_D)$	-3
$Cross-price\ elasticity\ of\ apple\ demand\ with\ respect\ to$	
$Pear\ prices\ (\varepsilon_{apple;pear})$	0.5

$$Cross-price\ elasticity\ of\ pear\ demand\ with\ respect\ to$$

$$Apple\ prices\ (\varepsilon_{pear;apple}) \qquad 0.25$$

Problem setup

Let's set up the four markets:

$$\%\Delta QSapples = \varepsilon S_{,apples} . \%\Delta P_{apples} + SS_{,apples}$$

$$\%\Delta QD_{apples} = \varepsilon D_{,apples} . \%\Delta P_{apples} + \varepsilon apple,pear . \%\Delta P_{pear} + SD_{,apples}$$

$$\%\Delta QS_{pears} = \varepsilon S_{;pears} . \%\Delta P_{pears} + SS_{,pears}$$

$$\%\Delta QD_{pears} = \varepsilon D_{,pears} . \%\Delta P_{pears} + \varepsilon_{pear,apple} . \%\Delta P_{apple} + SD_{,pears}$$

Note now that we directly account for the interaction of the two markets by including the terms "apple;pear and "pear;apple.

Suppose that the supply of apples decreased by 10%. How do we solve for the changes in the price of apples ($\%\Delta P_{apples}$) and price of pears ($\%\Delta P_{pears}$)?

1. First, we know that in equilibrium, $\%\Delta QS_{apples} = \%\Delta QD_{apples}$ and $\%\Delta QS_{pears} = \%\Delta QD_{pears}$. For each relationship, solve for %ΔPapples and %ΔPpears, respectively.

ε_S,apples .%ΔPapples + S_S,apples = ε_D,apples .%ΔPapples +εapple,pear .%ΔPpear + SD,apples

3 .%ΔPapples - 10% = -2.5. %ΔPapples + 0.5 .%ΔPpear + 0

5.5. %ΔPapples = 0.5 . %ΔPpear + 10%

%ΔPapples = 0.091 .%ΔPpear + 1.82% (1)

ε_S,pears .%ΔPpears + S_S,pears = ε_D,pears .%ΔP_{pears} + εpear,apple . %ΔP_{apples} + S_D,pears

5 . %ΔP_{pears} + 0 = -3 .%ΔP_{pears} + 0.25 .%ΔP_{apples} + 0

8 .%_P_{pears} = 0.25 . %ΔPapples

%ΔP_{pears} = 0.031 . %ΔPapples (2)

2. Now, we have two equations (equations (1) and (2)) and two unknowns (%ΔP_{apples} and %ΔP_{pears}). Two solve, plug in the equation for %ΔPpears into the equation for %ΔP_{apples}. Then solve for %ΔP_{apples}:

$$\%\Delta P_{apples} = 0.091 . \%\Delta P_{pear} + 1.82\%$$

$$\%\Delta P_{apples} = 0.091 \cdot (0.031 \cdot \%\Delta P_{apples}) + 1.82\%$$

$$\%\Delta P_{apples} = 0.003 \cdot \%\Delta P_{apples} + 1.82\%$$

$$0.997 \cdot \%\Delta P_{apples} = 1.82\%$$

$$\%\Delta P_{apples} = 1.83\%$$

Now that you have the percentage change in the price of apples, plug it into the equation for the price of pears to solve for %ΔPpears:

$$\%\Delta P_{pears} = 0.031 \cdot \%\Delta P_{apples}$$

$$\%\Delta P_{pears} = 0.031 \cdot (1.83\%)$$

$$\%\Delta P_{pears} = 0.057\%$$

Exercise 2: Dear students the following is an additional problem that you are supposed to solve based on the above example of general equilibrium displacement model.

Sugar can be produced from sugar beets grown in **Awash** or sugar cane grown in **welkait, Tigrai**. These markets are linked, and so shocks to one market must be analyzed with respect to the other market.

Consider the following information:

Elasticity of sugar beets supply (ε_S) …….. 1.2

Own-price elasticity of sugar beets demand (ε_D)…….. -0.9

Elasticity of sugar cane supply (ε_S)…… 1.5

Own-price elasticity of sugar cane demand (ε_D) …… -1

Cross-price elasticity of sugar beets demand with respect

to sugar cane prices ($\varepsilon_{beet;cane}$)…… 1.2

Cross-price elasticity of sugar cane demand with respect

to sugar beet prices ($\varepsilon_{cane;beet}$)…….. 1.5

Considering the above givens analyze the following situations:

1. Sugar cane supply increases by 25%.
2. The Ethiopian sugar corporation (ESC) restricts only non-Round-up Ready sugar beets to be planted, increasing the demand for beets by 5%.
3. Prices of sugar beets fall by $5/ton from the original price of $50/to

CHAPTER 4: THE MARKETING OF AGRICULTURAL COMMODITIES

Content

Chapter Notice:

As you can understand from the main topic and contents, this chapter is about commodity marketing. This material is presented some concepts and practices of other countries. Using the concepts and other countries experience as a benchmark you should explore commodity marketing practices of your local area. Therefore, this chapter has special demand of field visit to observe and ask about

the issue to local farmers، local traders، retailers and wholesalers of agricultural product/s.

4.0 CHAPTER OBJECTIVES

Up on completion of this chapter students will be able to:

- Explain the stages in a commodities marketing system
- Acquire the knowledge and skill of grain marketing
- Acquire the knowledge and skill of livestock and meat marketing
- Acquire the knowledge and skill of poultry and egg marketing
- Acquire the knowledge and skill of fresh milk marketing
- Know the local practice of agricultural commodities marketing

4.1 INTRODUCTIONS

The term 'commodity' is commonly used in reference to basic agricultural products that are either in their original form or have undergone only primary processing. Examples include cereals, coffee beans, sugar, palm oil, eggs, milk, fruits, vegetables, beef, cotton and rubber. A related characteristic is that the production methods, postharvest treatments and/or primary processing to which they have been subjected, have not imparted any distinguishing characteristics or attributes. Thus, within a particular grade, and with respect to a given variety, commodities coming from different suppliers, and even different countries or continents, are ready substitutes for one another. For example whilst two varieties of coffee bean, such as robusta and arabica, do have differing characteristics but two robustas, albeit from different continents, will, within the same grade band, have identical characteristics in all important respects. Agricultural commodities are generic, undifferentiated products that, since they have no other distinguishing and marketable characteristics, compete with one another on the basis of price. Commodities contrast sharply with those products which have been given a trademark or branded in order to communicate their marketable differences. Differentiated products are the subject of the chapter which follows.

This chapter is largely descriptive and is intended to merely to give an overview of commodity marketing. Five categories of commodity are discussed in this chapter: grains, livestock and meat, poultry and eggs and fresh milk. Since this textbook ostensibly deals with

agricultural and food products marketing and marketing systems internal to developing countries, the exclusion of non-food crops such as tobacco, cotton and rubber, was deliberate. If products like these had been included then de facto, the discussion would have been oriented towards export or international marketing. A companion textbook to Agricultural and Food Marketing Management, entitled "Global Marketing", has been developed to deal with these topics in some depth.

4.2 STAGES IN A COMMODITY MARKETING SYSTEM

Activity 1: commodity marketing as a system has its own different stages. Thus, you are kindly requested to explore your local or country wide commodity marketing stages. To this end you should ask your family member whose business is commodity marketing or you can ask others who you think they have an exposure. In addition to this, please make sure you are familiar with the term commodity and be able list some examples of agricultural commodities. Finally you will share it to your colleagues or your family members who is new to it. Thank you!

A commodity marketing system encompasses all the participants in the production, processing and marketing of an undifferentiated or unbranded farm product (such as cereals), including farm input suppliers, farmers, storage operators, processors, wholesalers and retailers involved in the flow of the commodity from initial inputs to the final consumer. The commodity marketing system also includes all the institutions and arrangements that effect and coordinate the successive stages of a commodity flow such as the government and its parastatals, trade associations, cooperatives, financial partners, transport groups and educational organisations related to the commodity. The commodity system framework includes the major linkages that hold the system together such as transportation, contractual coordination, vertical integration, joint ventures, tripartite marketing arrangements, and financial arrangements. The systems approach emphasises the interdependence and inter relatedness of all aspects of agribusiness, namely: from farm input supply to the growing, assembling, storage, processing, distribution and ultimate consumption of the product.

The marketing systems differ widely according to the commodity, the systems of production, the culture and traditions of the producers and the level of development of both the particular country and the particular sector within that country. This being the case, the overview of the

structure of the selected major commodities marketed, which follows, is both broad and general. The major commodities whose marketing systems will be discussed in this chapter are large grains, livestock and meat, poultry and eggs, cotton, fruit and vegetables and milk. Table 3.1 identifies the main stages of agricultural marketing and this provides a loose framework around which to structure the discussion of the marketing of these commodities.

Table 4.1 Stages of agricultural marketing

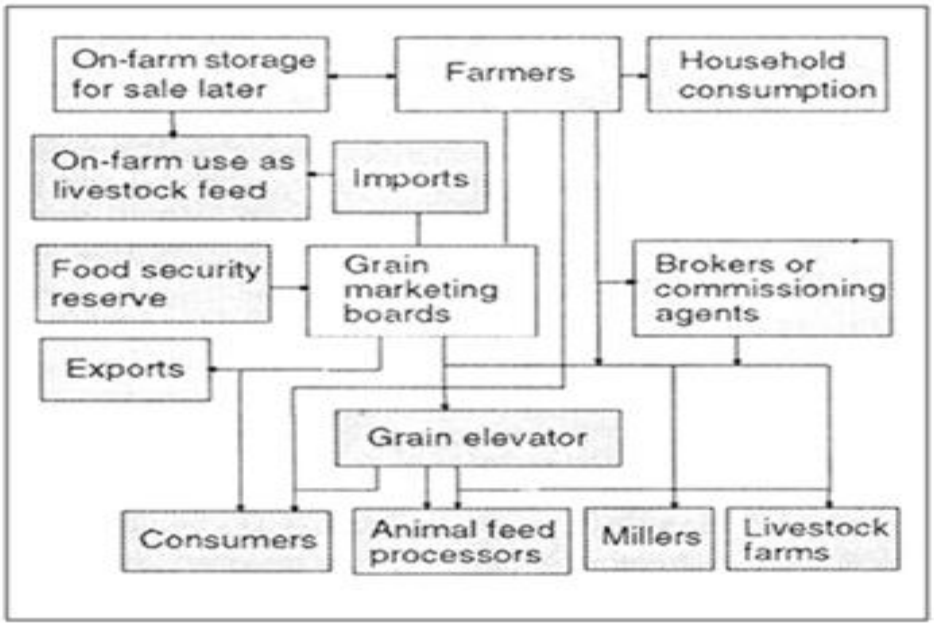
Stage	Examples
Stage 1:Assembly	Commodity buyers specialising in specific agricultural products, such commodities as grain, cattle, beef, oil palm, cotton, poultry and eggs, milk
Stage 2:Transportation	Independent truckers, trucking companies, railroads, airlines etc.
Stage 3:Storage	Grain elevators, public refrigerated warehouses, controlled-atmosphere warehouses, heated warehouses, freezer warehouses
Stage 4:Grading and classification	Commodity merchants or government grading officials
Stage 5: Processing	Food and fibre processing plants such as flour mills, oil mills, rice mills, cotton mills, wool mills, and fruit and vegetable canning or freezing plants
Stage 6: Packaging	Makers of tin cans, cardboard boxes, film bags, and bottles for food packaging or fibre products for
Stage 7: Distribution and retailing	Independent wholesalers marketing products for various processing plants to retailers (chain retail stores sometimes have their own separate warehouse distribution centres)

4.3 AGRICULTURAL COMMODITIES MARKETING

4.3.1 Grain marketing

The principal participants in grain marketing systems are producers, marketing boards, grain elevators, brokers, millers, livestock farmers, animal feed processors, millers, other food manufacturers, grain exchanges and exporters.

Figure 4.2 A typical grain marketing system



The physical marketing system begins with the assembling and collecting points located in the rural areas close to the producers. The next stage involves the storage areas at the national grains marketing facilities owned and operated by an appointed parastatal and/or private grain elevator; and the grain milling companies which in some countries are privately owned and in others are government enterprises. Although the size and methods of operation differ from country to country, the local assembling and collection points usually have grains brought to them either directly by the farmer-producers themselves or by rural entrepreneurs. Thus in the case of grain, the assembly and storage functions are typically combined at this marketing stage. In countries where a marketing parastatal has been given a monopoly in grain trading, private traders are sometimes authorised to buy grains from farmers (i.e. local buying agents) on behalf of the parastatal.

A common feature of grain marketing systems is the co-existence of a government marketing agency (parastatal) and a parallel private marketing channel with myriad's of private traders. Public grain marketing agencies are government appointed parastatals assigned to control or regulate the system. Prior to market liberalisation marketing parastatals were recognised, in many developing countries, as the "official channel" of the maize marketing system, and were responsible for setting the prices for major cereals (i.e. producer, into-depot, ex-depot, into-mill, ex-mill and consumer or retail). Depending on the country, these agencies usually

consisted of one or more ministries related to cereals production and influencing public policies affecting food production and consumption and a parastatal established to operationalise the regulatory provisions of the public policies enacted for a given crop. In many developing countries parastatals remain important players in the grain marketing system even though their role may have changed. In the post-market liberalisation era many, but not all, of these parastatals have either been disbanded or have been assigned a specialised role such as acting as the buyer-of-last-resort or maintaining food security reserves.

The second class of actor in the commodity marketing system is private agents. These include private individuals operating in the system as petty assemblers, traders large-scale merchants, millers (both large corporations and small rural operators), brokers and retailers of grain products. The exact quantity of grain flowing through the private channel is often not known. However, most of the agents in the channel operate in rural areas and penetrate the remotest areas of the rural areas to purchase grains. A common justification for establishing parastatals is, that parastatals get to hinterlands that private operators cannot or will not reach. However, lkpi[2] claims that it is private marketing agents that more often get to remote hinterlands to buy and collect maize from farmers when the government agencies fail. However, in those developing countries where national structural adjustment programme have not yet been initiated, inter-provincial grain movement controls are so strictly policed that private agents in the system cannot legally and profitably transport grain from one production zone to another. For those countries that are already adjusting their economies structurally, market liberalisation is making or will soon make much restrictions on commodity movement irrational and new form of intermediary are coming into being. Among these are commissioning agents or brokers. These entrepreneurs do not take title to the grain but take responsibility for selling the grain. They act as agents for the grain seller who may be a farmer, a grain trader or grain elevator.

4.3.1.1 Grain storage

Whether storage takes place on the farm or in silos off the farm, increases in the value of products due to their time utility must be sufficient to compensate for costs at this stage, or else storage will not be profitable. These costs will include heating, lighting, chemical

treatments, store management and labour, capital investment in storage and handling equipment, interest charges and opportunity costs relating to the capital tied up in stocks. Among the less tangible costs is the risks attached to storage. These include shrinkage due to pilferage, pests, fungal growths and loss of quality due to ageing. Another risk is that demand could fall with adverse effects on prices.

Since the advent of structural adjustment programmes and market liberalisation, some grain marketing parastatals have lost their monopoly of the market and consequently the volumes of grains which they are handling has dropped substantially. This means that they no longer require all of their storage capacity and a number of marketing parastatals now rent some of their storage capacity to farmers, grain traders and other participants in the grain marketing system.

Two types of storage facility are commonly found, namely: the bulk storage facility where cereals are stored in concrete and/or metal bins, and the bag storage facility where the crop is stored either inside a warehouse or in the open and then covered by tarpaulin sheets. In comparative terms, the advantages of a bulk over a bag storage system are that it is more efficient because it:

- reduces congestion at the depots by not allowing for bagged maize to be dumped all over the depot yard
- reduces handling costs
- saves foreign exchange on bags, tarpaulin, and
- Lowers storage losses.

Its disadvantages are that:

- the initial invest is high, with a significant foreign currency component
- it is inflexible in terms of not being easily expandable to cope with changes in intake and off-take levels
- it relies heavily on an efficient transport system because a silo complex is only economically viable when throughout is at least 1.6 times its capacity[3], and
- it needs skilled manpower to run and maintain the entire system.

On the other hand, a bag system ideally overcomes the problems associated with a bulk system as enumerated above. Its main disadvantages are:

- higher quality losses in storage due to insect pests and rodents
- higher demand for foreign exchange associated with the purchase of bags
- Tarpaulin and fumigation sheets.

The depot manager controls the day-to-day operations of the depot. The duties of the depot manager include accepting, checking the quality, recording the quantity and storing the produce brought in by the farmers. Each depot's record of accepted and stored produce is then sent to headquarters for necessary action. With this information to hand, inter-depot or inter-district transfers can be affected.

4.3.1.2 Grading of grains

It is important to have a grading system which accurately describes products in a uniform and meaningful manner. Grades and standards contribute to operational and pricing efficiency by providing buyers and sellers with a system of communicating price and product information. By definition, commodities are indistinguishable from one another. However, there are differences between grades and this has to be communicated to the market. By the same measure, buyers require a mechanism to signal which grades they are willing to purchase and at what premium or discount. Prices vary among the grades depending upon the relative supply of and demand for each grade. Since the value of a commodity is directly, affected by its grade, disputes can and do arise. In fact, the government may establish grading services to serve as a disinterested third party.

Grading typically occurs at the assembly stage or when a product moves into storage, during storage, or just before it leaves storage. Grading is not normally a separate marketing stage, although it has been separately identified in table 3.1 in this chapter. It is a function provided by the storage firm or the commodity merchant or the government. Prescribed procedures for grading are set forth by the trade members of commodity markets or else are stated in governments regulations. Grading may be undertaken by a member of the trade specialising in a particular commodity. Several lots of grain, oilseeds, and cotton are combined to produce a grade level required for a particular sale. This gives rise to what are known as house grades. A

merchant's primary marketing advantage may be a reputation for house grades of consistent quality.

The absence of grades and standards restricts the development of effective and efficient marketing systems. There are substantial obstacles to achieving an integrated national market as explained by Chong Yeong Lee[4];

"The lack of a unified measurement system also hampers the development of marketing. In Tarai, grain is measured by weight (1 mand=37.3kg) and in the Hills and Inner Valleys it is measured by volume (1 pathi = 4.54 litres). The same unit of weight, such as "seer", is equivalent to 0.93kg of meat in the Tarai area, 0.79kg in Kathmandu and 0.25kg in Pokhara."

In Ethiopia grain is measured by weight, i.e, 1 joniya=50k.g, 1 large minilik=1.5k.g, 1 kubaya=1/4k.g, which are simple to change into modern unit of measurement like k.g, where as ladan, kuna, sahin, etc are the traditional units of grain measurement which for the time being I could not find information how to change in to k.g or other grain modern unit of measurement. These traditional and modern units of measurements have been playing pivotal role in creating common understanding of both the buyer and seller in the grain market of Ethiopia. These are also contributing to the creation of efficient grain marketing system.

Usually samples of different sizes (depending on the size of the load) are taken from each lot delivered to the depot of the buyer and these are tested for compliance with the acceptance standards. The results determine the grade into which the whole lot from which the sample came is classified to determine the price to be paid to the grower. Typical variables used in grading grain include:

- the moisture content of the grain
- the percentage of broken kernels
- degree of discolouration in the grain
- the percentage of material other than grain (MOG) in a sack or load

Case 4.1 Thailand's Rubber Collection and Grading System

Thailand is a major player in the world's rubber markets. However, both government and those within the Thai rubber industry were becoming increasingly concerned about the quality of rubber coming from the smallholder sector. The Bank for Agriculture and Agricultural Cooperatives (BAAC) became directly involved addressing this problem.

Research within the smallholder sector identified several problems. One of the principal causes of the high levels of impurities in the rubber delivered to local buying points was the containers used. Smallholders were using tins, cans, plastic containers, buckets a wide variety of other types of container. These were totally unsuitable since they were usually contaminated by residual traces of previous contents. BAAC therefore sponsored a leasing system for standardised milk churns. These churns were of uniform dimensions and were easy to clean. Standardisation on receptacles for the rubber meant that other operations could be standardised including the weighing and storage equipment used at the local buying point as well as the vehicle used to transport the rubber between the buying point and the factor.

Local buying points were so situated that no smallholder had to travel more than 2 km to deliver his/her rubber. This was important since many smallholders either walked or cycled to the buying point. Preliminary tests at the buying point gave some indication of the level of impurities in the rubber. These tests included one for specific gravity since some of the more unscrupulous smallholders were known to add battery acid to the rubber to increase the apparent volume. Producers were given a receipt for their rubber which was then transferred to the factory where much more sophisticated tests could be conducted on the quality of the rubber. Smallholders were then informed what premium, if any, their rubber had attracted in accordance with its grade.

Payment was effected through BAAC branches. The actual payment made to the smallholder was the grade price minus any outstanding loans or loan repayments given by BAAC to cover production expenses.

In Sub-Saharan Africa, for example, maize is received in 4 grades, A to D, with A being the highest grade and D the lowest. The system allows for the farmer to dispute the grade awarded to his crop. In such cases, the farmer has to submit a written request within a specific time to the depot through which his crop was delivered.

Typically, after grading is effected, the farmer is issued with a receipt showing details of the type, quantity and grade of the maize delivered. The receipt constitutes an acknowledgment by the agency that it is indebted to the farmer up to the value of the crop detailed on it. From that point on, the marketing risk attached to the crop passes from the producer to the agency/parastatal. It is relevant to point out that it usually costs the same amount to process a grain receipt for 1 tonne as it does for 1,000 tonnes.

4.3.1.3 Grain processing

Grain processing is about the most important activity from the final consumer's stand point within the marketing chain of the crop. Grain, for human consumption, is usually milled into flour or meal.

Grains can also undergo secondary processing and be converted into more sophisticated products such as baked foods, breakfast cereals, baby foods, cooking oils, starches, sugars etc. A considerable amount of grain is also converted to animal feed. Due to this versatility in end use, the marketing chain for grains tends to be long and complex.

4.3.1.4 Challenges for grain marketing systems

Depot network and distribution of production problems arise because crop production is rarely evenly distributed across a country. In most countries cereals production is concentrated in one or two regions of the country, and the remainder are cereals deficit areas. In these circumstances it usually becomes rational and necessary for the government agency handling grain distribution, where there is one, to construct intake depots in the producing region(s), and storage depots in the major consumption areas. But in most instances, post-independent governments in some of these countries adopted rural income policies that made it mandatory for the whole country to be provided with government agency depots within short distances of every producer. The aim was to overcome political, social and economic injustices of the past. It was a policy which was also pursued in the hope that smallholder farmers would be attracted into the cash economy. In the end, this huge investment in infrastructure was economically unsustainable and most developing countries are now locating storage facilities on the basis of economic efficiency.

Excess stock problems tend to develop because of relatively high producer prices which the governments of the countries concerned establish in order to compensate farmers whose cost for production are high. Unfortunately, these systematic increases in the producer prices usually bring them to levels that are incompatible with international supply and demand conditions. To reduce the effect of these high producer prices some governments in LDCs introduced artificial exchange rates that later did more harm than good to the export economy of these countries. In addition, local demand was low, being limited to only urban demand, for human consumption, and for livestock feed production in rural areas.

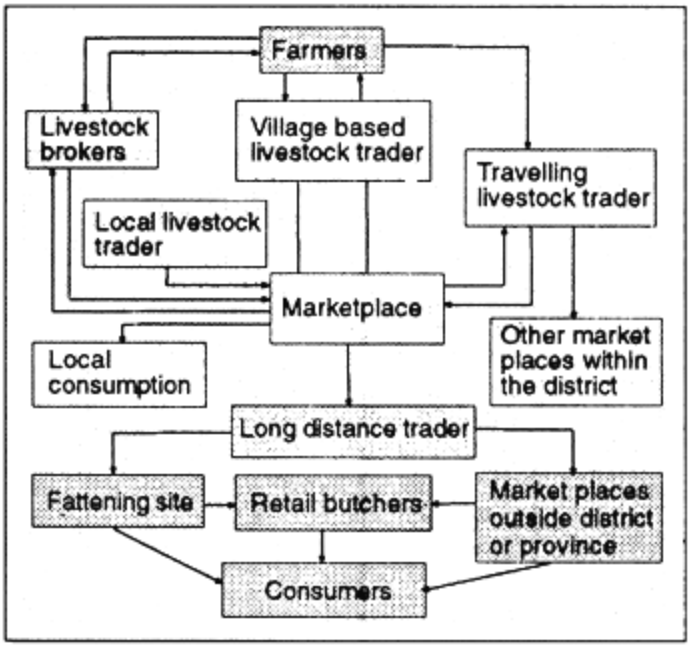
Fluctuating grain supply problem results from the crop's susceptibility to weather conditions which determine the level of harvest and, therefore, the export market supply. With each country's domestic demand often varying along with the weather, LDC countries have been known to rapidly move from a surplus to a deficit situation. In a country with high import parity and low export parity prices, the increased risk of stockpiling seems to lower the real cost of storing the excess stocks and so causes government to become indifferent toward streamlining supply with demand requirements. Low levels of intra-regional trade between developing countries is explained by subsidies paid to producers. This masks any competitive advantage in grain production that growers in one country may have over those in neighbouring countries. Where there is intra-regional trade in grains, between developing countries it is most often based on periodic shortages arising from drought civil strife. As such, export demand is usually short-lived and often financed by donor agencies, and the exporting country cannot make any long term plans to develop the trade.

4.3.2 Livestock and meat marketing

The Indonesian livestock and meat marketing systems is simpler because some of the production and marketing functions are combined and carried out by fewer enterprises and some are not carried out at all. For instance, there is no formal animal feed sector at the production end and the slaughtering, cutting and boning is often done by the consumer. Put another way, the production and marketing system is shorter, and simpler, because it offers fewer services to both producers and consumers. As disposable incomes increase, in

developing countries, meat consumption tends to increase too and the demand for additional services gains in strength.

Figure 4.4 Indonesia's marketing system for small ruminants



4.3.2.1 Assembly of livestock and meat

Depending upon complexity of the particular marketing system cattle are assembled to serve one of the following purposes; for slaughter, for fattening or for breeding herds. There are various types of livestock assemblers and assembling institutions.

Farmers	The level of farmer-to-farmer trade can be substantial. Where there is a degree of specialisation within the livestock and meat marketing system, for example when some farmers concentrate on breeding or fattening, amount of farmer-to-farmer trade can be very high.
Rural traders	Usually these are independent entrepreneurs. As described in the reference to Indonesia's small ruminant marketing system, these may have established business premises or simply travel around a defined geographical territory buying from farmers and selling on to fatteners, auctions, order buyers, abattoirs or terminal markets.
Local cooperatives	Function largely as shipping agencies, collecting small lots from producers and shipping them forward in economic sized batches to terminal markets. Some have diversified and offer a broader range of services and often merchandise their livestock

	direct to packers and other buyers.
Order buyers	Purchase fattened stock on behalf of abattoirs and meat processors, from farmers, local traders, auctions and terminal markets, in return for a fee.
Commissioning agents	Do not take legal title to the livestock but obtain a commission when they make a sale.
Auctions	Public auctions offer livestock or deadweight meat for sale to the highest bidder. Auctions are almost exclusively attended by the trade and not the general public. In some countries there may be various types of auctions operating. Some auctions serve breeders and those wishing to procure animals for fattening. Other auctions are attended by retail butchers, meat packers, traders etc.
Terminal public markets	Large central markets which both the trade and the public may patronise. The municipal authority or private organisation providing the facilities of the market does not engage in trade but profits from charging fees for the use of these facilities. Farmers, and others, may trade on their own account in these markets or may appoint commissioning agents.
Meat packers	Some packing plants are located near terminal or auction markets and have their own cattle buyers. These have combined the assembly and processing functions.

4.3.2.2. The grading of livestock and carcasses

At the primal level, there are three dimensions to grading. The first, relates to the differing values attached to cuts of meat and the second to the quality of those cuts. The third dimension is that of carcass yield. The first of these classes of criteria is, in some measure, objective. Depending upon the country and the culture, different parts of the animal are more favoured than others, or are in shorter supply, and therefore attract higher prices. The measures of meat quality, and even yield, are rather more subjective.

Case 4.2 Botswana's Meat Commission Makes The Grade

Many articles, reports and studies have been written on the Botswana Meat Commission (BMC). The consistent message has been a model, for the developing world, of how to establish and maintain standards of excellence within the beef industry. Beginning in 1958 as a single slaughterhouse, BMC has developed into an international business with a turnover in excess of US$100 million per annum. Most of BMC's reinvestment in its business comes from its own resources, the

Commission pays premium prices to local producers and is a major contributor to the national treasury.

The success of BMC is based upon the establishment of an efficient internal marketing system, maximum utilisation of the animals, strict and independent grading standards that meet international specifications and investment policies which ensure that a significant proportion of earnings are channeled back into the business.

Botswana is a semi-arid country. whose population is concentrated in the eastern region. Half of the country's 600,000 square km is tribal land, only 4% is freehold and the remainder is state-owned; being mainly dry and having little livestock. Tradition has mitigated against the fencing but the government has been bold enough to tackle this sensitive issue because it sees that fencing is necessary to control the movement of diseased stock. Outbreaks of foot and mouth disease, which have occurred from time-to-time, have largely been kept under control by BMC's stringent animal health controls. Such outbreaks draw a halt to exports and only 20% of Bostwana's beef is consumed within the country

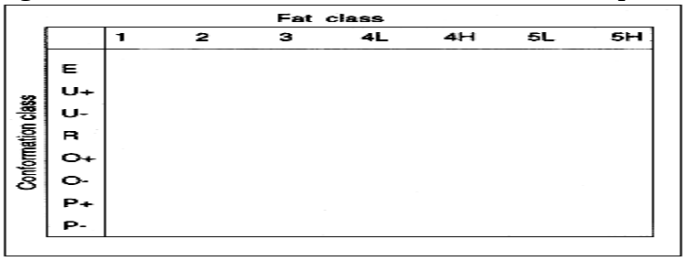
BMC is able to maintain a steady flow of cattle through its abattoir through a quota system. Producers have to apply for a quota and are heavily penalised if they fail to meet their agreed quota. Enterprising agents have emerged to provide services to producers including the obtaining of quotas and arranging rail transportation. These agents have been instrumental in organising farmers with only one or two animals to sell, into groups so that shipments achieve minimum economies of scale. Co-operatives are also active in supplying cattle to BMC.

BMC buys livestock according to deadweight and grade. Independent grading is carried out by employees of the veterinary services. Animal movements are strictly controlled. BMC helps farmers plan ahead by publishing prices for each 4 week period. To maintain a steady flow of beasts through the abattoir in the low season, BMC offers high prices from October through February.

Commodity markets tend to be highly elastic and the international beef market is no exception. Moreover, it is a highly competitive market. BMC's policy is to perform as much processing in the country as possible and to process as much of the animal as possible. Live exports were stopped in 1967. Therefore, Botswana exports a full, range of by-products including tallow, bonemeal, bloodmeal, hides, hoofs, horns etc. Both fresh and frozen meat are also exported along with meat products like corned beef.[9]

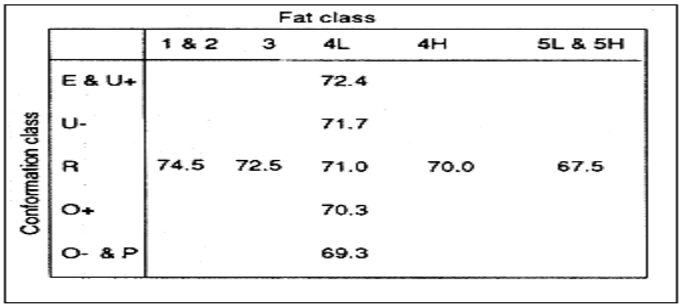
With respect to the second dimension of meat value i.e. the quality of the meat the European Union's carcass classification system illustrates the point. This system gives particular importance to the shape of the carcass, known as conformation-, and the amount of fat in the carcass. Conformation influences the meat yielded by a carcass and the trend in Europe is towards reducing the amount of fat in human diets and so the classification systems for meats rate low fat carcasses higher than those with greater amounts of fat. The European system recognizes seven categories of fatness (categories 4 and 5 being subdivided into higher and lower), and eight categories of conformation. The leanest carcasses would be in category 1 and the best conformation class is E.

Figure 4.5 Beef carcass classification in the European Union



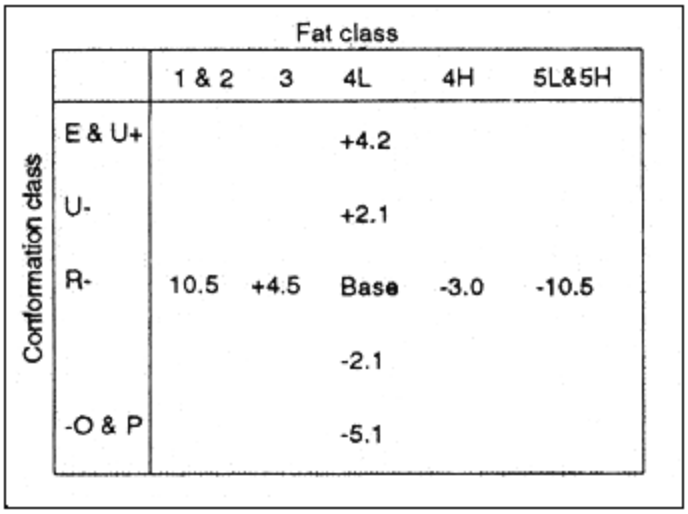
The idea of the EEC's carcass classification system is that it enables the marketplace to send clear signals to producers with respect to the type of carcasses the market wants. Figure 6.6 shows how conformation and fatness combine to influence the amount of salable meat in a carcass, in percentage terms. The data was compiled by the UK's Meat and Livestock Commission (MLC) using standard methods of butchering and trimming. For simplicity, data is given here for only conformation class R and fat class 4L.

Figure 4.6 The EU's carcass classification system: conformation, fatness and percentage yield of salable meat



The MLC have also provided illustrative data to show the price differentials, expressed as percentages, that are paid to producers supplying various grades of carcass.

Figure 4.7 The EU's carcass classification system: conformation, fatness and percentage price differentials



Conformation class	Fat class 1 & 2	3	4L	4H	5L&5H
E & U+			+4.2		
U-			+2.1		
R-	10.5	+4.5	Base	-3.0	-10.5
			-2.1		
-O & P			-5.1		

The figures show that in these markets, fatness has a greater influence on price than conformation. Nevertheless, livestock and meat grades and their usage by the trade are often cited as a major problem for developing countries who find it difficult to meet the specifications. However, as will be seen in case 4.2, Botswana Meat Commission (BMC) has managed to do so and profits greatly as a result.

Meat packers purchase most of their livestock on a live weight basis. This requires buyers to estimate the carcass yield and quality of live animals in order to arrive at an offer price. Buying is an art rather than a science, and there can be significant variations in buyer and seller estimates of the value of a particular animal. This is a frequent source of conflict in the livestock marketing channel. Moreover, the fact that reliable judgments of livestock can only be acquired over a period of years, can act as a barrier to competition since the inexperienced are effectively barred from entry to the distribution channel.

For some products, grades are established in the processing plants. This is the case with meats such as fresh poultry, beef, and pork. The government installs graders in the cattle auction

floors on a fixed-fee basis; the fees collected cover the salaries and other costs incurred by the government in making the service available.

4.3.2.3 Livestock and meat processing

In contrast with all other sectors of the food industry, the meat packing industry is a process of disassembling. Whilst other food manufacturers combine simple raw materials into a complex, composite product, meat packers breakdown a complex raw product-livestock-into its constituent parts. This reverse manufacturing process nevertheless adds form utility to livestock products. An animal carcass is in reality a bundle of products, each with different markets, demands and values. On average somewhere between fifty five to sixty two percent of a beef animal's live weight is recovered as meat products. For a pig's carcass the figures are seventy to seventy five percent. The carcass yields other by-products of course such as hides, pelts, lard, offal, fertilisers and industrial products.

In some tropical countries slaughtering facilities are closely supervised by government appointed inspectors. This is not so much a system of quality control as a measure to ensure that only disease-free animals are introduced into the human food system.

4.3.2.4 Livestock and meat consumption

Meats are a versatile food representing a variety of consumer attributes. Meats can be purchased ready to eat, ready to cook or in forms requiring substantial preparation. Most meat is sold fresh, in LDC's, but increasingly such processed items as canned meats are becoming available and these are giving the consumer additional choice. Food processors can combine meats with other foods to add further to consumer choice.

The income elasticity of demand for beef in particular, and other meats in general, tends to be strongly positive in LDCs. As per capita incomes rise in developing countries, the demand for the principal livestock products meat, milk and eggs also rises. Abbott[12] quotes the example of Iran when the population was growing at just under three percent and disposable incomes at five percent. In the same period meat demand rose at around nine percent per annum.

Over the past 30 years livestock populations have grown substantially in LDCs as both disposable incomes and the populations themselves have grown. Indeed, the developing

countries have larger numbers of livestock than the developed countries but they produced only one-fifth of the world's meat, milk and eggs. Moreover, a smaller proportion of stock are slaughtered each year and yields per animal are generally much smaller in the developing world. In addition to rising incomes, the rate of urbanisation is a fundamental influence upon the demand for livestock food products. An example, again supplied by Abbott, is that of Dar Es Salaam where urban expansion of eight percent doubled meat demand within nine years.

However there are constraints to the development of livestock industries in developing countries in the form of traditional techniques of food preparation and shopping behaviour. In many cultures it is customary to cook meat for a very long time, especially if the favoured dishes are curries and stews and in these circumstances little interest is shown in paying premium prices for more expensive cuts of meat. Therefore in many Asian and African countries butchers have no incentive to add value to the product by dividing the carcass into various consumer cuts. Moreover, the wealthier members of LDC societies often leave the shopping to servants and basic retailing techniques continue to be acceptable. In the tropics the preference is for freshly killed meat.

Religious factors may also have some bearing on purchasing behaviour. Muslim countries importing from non-Muslim countries frequently prefer to receive supplies on-the-hoof to ensure that Halal methods are employed in the slaughtering methods. Demand for meat tends to be highly seasonal in tropical countries. It is greatly affected by religious festivals like Ramadan, the feast of the ld (Moslem festival) and by the sale of cash crops in places like Ethiopia and Nigeria where demand rises significantly following the coffee and groundnutt harvests.

Case 4.3 Developing Zimbabwe's Small Scale Poultry Sector

Zimbabwe's poultry industry is typical of that of many developing countries with two distinct strata: the commercial sector, employing modern and sophisticated husbandry, and the small scale sector which produces eggs and meat from bought-in day-old chicks for the family and local market. In 1985 the industry's value was Z$45 million, split 70:30 in favour of the commercial sector over the much smaller but

rapidly expanding small scale sector. Some 80 commercial broiler producers were in business in the mid-80's, but two of these produced over 70% of total production. Four of the largest broiler producing companies are vertically integrated i.e. breeding, compounding their own feed, fattening the birds and marketing them. The trend in the commercial broiler industry is towards production becoming increasingly concentrated and the technology increasingly sophisticated. Commercial egg production in Zimbabwe is also concentrated there are only around 140 producers, supplying just over 11 million dozen eggs per annum.

Most rural farmers produce poultry primarily to feed their own families, with small, and irregular, surpluses being made available on the local village markets. Local markets tends to be limited and easily saturated and the internal market inefficient and incapable of providing reliable outlets for poultry products. Because of the costs involved in production and marketing very few farmers are willing to produce poultry without the security of a contract with a processing firm.

From independence in 1980 onwards, the situation in the rural areas began to change with increased availability of credit and extension services to the small scale sector. There are signs that these measures are having an impact on the poultry sector. There has, been a 300% increase in the number of day-old chicks purchased by the smallholder sector over a 12 year period. The large increase in communal broiler production is confirmed by the stockfeed industry whose sales to this sector have increased remarkably since 1980. Nonetheless, a good deal remains to be done. Eggs still tend to be sold locally and average egg production per hybrid bird is only 175 eggs per year. This is poor by commercial standards where 300 eggs per bird are achieved. This is because smallholders are still, in the main, using rudimentary husbandry and production methods and technologies. That is, the majority of the smallholder sector is still at stage 1 of Sugiyama's 5 stage model and a small number have progressed to stage 2. It would appear that much of the credit made available through government programmes has been spent either on day-old chicks or on consummables such as imported feedstuffs, vetinery products etc. There has been no significant improvement in the level of investment in capital equipment by communal farmers. Moreover, the small scale sector continues to comprise a large number of small production units of 50-100 birds.

4.3. 3 Poultry and eggs marketing

Poultry farmers have three distinct types of bird from which to select their flocks:

Hybrid broilers	In addition to pure chicken breeds, specialised breeders sell chickens which are first crosses and multiple crosses The latter are known as hybrids. These gain weight more quickly and lay more eggs than pure breeds and are therefore generally used by poultry producers. They are only suitable for commercial food production, having an excellent food/meat conversion ratio. Mature females should weigh in excess of 2.75 kg. Young broilers mature rapidly and are ready for market at 12 weeks of age.
Dual purpose birds	These give good carcasses when slaughtered but only moderate egg production. A mature female can be expected to weigh around 2.25 kg. This type of bird has the advantage of rarely exhibiting cannibalism and is hardy against disease. However, they do tend to go broody and egg production, consequently, can fall off. Dual purpose birds are often recommended for farmers new to poultry keeping. Their lower yields, both in meat and eggs, is offset by their hardiness in relation to disease resistance and poor weather.
Lightweight birds	These are bred for egg production. Lightweights have excellent food conversion rates and rarely go broody. However, they do need good management and, therefore, are only recommended to experienced poultry keepers. They are a nervous bird and inclined towards cannibalism. A mature female is likely to weigh less 2.25 kg.

Sugiyama[13] suggests that poultry enterprises pass through distinct stages of development. These are outlined in the following figure.

are reliant, to varying extents, upon expensive imports of breeding stock, i.e. hatching eggs and/or day-old chicks, animal health products and vitamin and mineral additives for compound feeds.

4.3.3.1 **Assembly of poultry and eggs**

It is the case, in most developing countries, that the poultry and egg sector is highly fragmented. Production is, for the most part, carried out by a large number of farmers, each with a very small flock. A minority of farmers have sizeable flocks. Much of the production is sold on markets in the immediate vicinity of the farm.

4.3.3.2 Egg grading

The principal external features of an egg, which collectively determine its quality are shell texture, colour, shape and condition. In some countries standards have been established for each of these external physical features for an egg. The internal condition of the egg is also of interest when assigning a grade to eggs. These include the position of the yolk within the shell and its colour; the extent of blood spots, if any, and the translucence and firmness of the albumen (white). Egg shells are porous and so another internal feature, which is critical to the quality of the egg, is the size of the air cell inside the shell. Eggs which are stored or transported in high temperatures allow a great deal of moisture to escape. This results in an enlarged air cell and consequent loss of weight. Stewart and Abbott[14] report that, in the Sudan, for example, the extremely high summer temperatures can spoil up to forty percent of the eggs before they can be consumed. In other cases, the problem is not one of a total crop loss but of quality losses that may not become apparent until the egg is used by the consumer.

The internal condition of an egg can be established using destructive or non-destructive tests. The most accurate interior test is to break the egg open on to a glass so that the contents can be inspected. This of course would be done on a sampling basis. Alternatively the non-destructive test of canding can be applied. This simply involves holding the egg before a strong lamp so that the position of the yolk, size of the air cell etc can be seen. By spinning the egg, in the hand, the solidity of the albumen can also be observed. Stewart and Abbott illustrate the kind of quality specifications which might be established as follows:

First grade	The shell must be clean, unbroken and practically normal in shape and texture. The air cell must not exceed 9.5 mm in depth and may move freely but not be broken or bubbly. The yolk may appear off-centre but only slightly enlarged, and may show only slight embryonic development. No foreign objects may be present.
Second grade	The shell must be unbroken but may be somewhat abnormal in shape and texture. Only slight stains and marks are permitted. The yolk may appear dark and enlarged and may show embryonic development but not at the blood vessel stage or beyond. Blood spots less than 6 mm are permitted.
Third grade	Other edible eggs, that is, those not rotted, sour, mouldy or musty; not incubated to the blood vessel stage, not containing insects, worms or blood spots 6 mm in diameter, or diffused blood.

This suggested grading scheme underlines the fact that the assessment of egg quality is comprised of both objective and subjective measures. Nonetheless, like all grading schemes, for whatever agricultural commodity, the benefits of implementing a systematic and widely understood method of describing the essential attributes, of the product, would be that sales can take place without personal inspection, disputes are more easily settled and more precise price and supply information can be made available.

4.3.3.3 Poultry grading

The weight of a poultry carcass is a primary attribute when grading the bird. The weight of the carcass will vary by breed, sex and age. It will also vary in accordance with the feeding regime of the bird. The eating quality of poultry meat is of particular concern to consumers. Meat tenderness, juiciness and flavour are the key criteria of quality in which consumers have an interest. Skin colour is another determinant of quality but the preference for white or yellow carcasses varies around the world.

The quality of poultry meat is greatly affected by methods of production. The nature of the feed used has a major influence on the final product. Balanced rations high protein and energy sources such as whole grains and fats, growth promoters such as antibiotics, chemical additives and vitamin supplements. Overcrowding and a lack of veterinary care slows the rate of growth of the birds and increases the incidence of disease and infestation by parasites which, in turn, adversely affect the quality of dressed poultry. In the tropics, climatic conditions make it unsafe to keep poultry carcasses, for more than a few hours after slaughter. For this reason, as well as traditions and culture, consumers generally prefer to buy live or freshly slaughtered birds.

In the industrialised countries detailed standards and grades for dressed birds (i.e. feathers and blood removed) have been established. These grading systems take account of conformation of the carcass, the presence of pinfeathers, skin condition, integrity of bones, and carcass colour/discolouration. However, in most developing countries grading is more informal, less systematic and more subjective. Possibly the two most important ‘quality’ criteria, in the tropics, are age and sex. Younger birds, although lighter, generally enjoy a price premium over older poultry. In the same way, female birds are more highly valued than male birds of

the same age. These criteria apart, market intermediaries usually catch a sample of the birds on offer and feel the breast flesh through the feathers and make a professional judgement as to the consumer appeal of the bird.

Opportunities to apply uniform quality standards depend upon the widespread availability of refrigeration. Live birds are difficult to classify save in the most general of ways; age range, sex, type and subjective evaluation through the handling of the bird. Poultry carcasses are much easier to classify with accuracy. Hence the statement that a prelude to the implementation of uniform grading standards is the sale of carcasses becoming commonplace and this can only happen when refrigeration is equally commonplace. Another barrier to the adoption of standardised grading procedures is the size of the poultry enterprise. The great majority of poultry farmers, in developing countries, are small-scale businesses and therefore unlikely to spare the time, or have a suitable staff member capable of learning how to assess poultry quality in a consistent and systematic fashion. Thus the diffusion of standardised grading also depends upon the structure of the industry within a given locality. In geographical areas where producers are predominantly small-scale, it is unlikely that there will be sufficient impetus to develop grading standards.

4.3.3.4 Poultry and eggs consumption

In the industrialised world poultry, and to a slightly lesser extent eggs, are less of a commodity than they were at one time. Originally these products exhibited a high degree of homogeneity but producers have since differentiated both of them. By manipulating the feed given to poultry. producers have been able to alter the taste characteristics and the appearance of the birds. Poultry has also been differentiated by the way they are preserved, by offering different cuts of the birds, by pre-cooking, coating in bread and in a variety of herbs. With product differentiation producers and food manufacturers have taken the opportunity to brand their poultry and poultry products. The differentiation of eggs has chiefly centred on boxing the eggs and branding them. Some producers, and more particularly food companies, operating in developing countries, have followed suit and have differentiated their poultry products. Eggs, however, continue to be marketed as an undifferentiated commodity.

4.3.4 THE MARKETING OF FRESH MILK

Whilst milk can be converted to a range of dairy products, such as cheese, butter, yogurt, dried powders etc., these are not commodities. It is generally the case that the processing of milk into these products involves a measure of product differentiation. That is, the methods, techniques and technologies, used in manufacturing dairy produce, tend to impart unique characteristics to the finished product. For this reason only milk will be discussed in this chapter.

Milk is an extremely important human food. Not only is it a relatively cheap source of protein, it is also rich in minerals such as calcium and vitamins A, D and B2. The quality of milk is usually judged according to its butterfat content. In addition, buyers are also concerned that it should be free from diseases like tuberculosis.

The relationship between beef and dairy production is an important one. In many countries, beef production is subsidiary to dairy production with sometimes as much as sixty to seventy percent of cattle sold for beef being animals culled from the dairy herd. This can have a significant influence on the characteristics and quality of red meat products since breeds and production methods which give the best milk yields rarely give corresponding results in terms of beef production; or vice versa. In Europe, for example, Friesian cows are a popular breed for milk production. It has been discovered that by crossing the Friesian with the Canadian Holstein, milk yields can be increased substantially. However, this cross-breed gives relatively low meat yields and a meat of inferior palatability. The relationship between the beef and dairy sectors is reversed in some countries. For instance, in Kenya milk production is more a by-product of livestock rearing. Whether it is dairy production which influences beef production, or the reverse, the important point is that the products of one will be determined, to some extent, both in form and quality, by what happens in the other sector; product development and technological change in one will have implications for the other.

In all parts of the world milk production is seasonal but the peaks and troughs are higher in the tropics. Production in the tropics peaks just after the rains when there is lush pasture available and progressively declines the further into the dry season. As in the case of beef production, milk producers have to take into account the lengthy biological lags when trying to match the supply and to the demand for liquid milk. When there is an over-supply of milk

then it might be possible to channel some of the excess into making butter, cheese, yogurts and other processed dairy produce. However, the market for these products is finite too and although dairy products can be stored longer higher levels of capital are tied up and interest charges are higher for storing these value added products, in comparison to milk.

4.3.4.1 Assembly of fresh milk

In the case of fresh milk, the assembly level resembles that of poultry. Milk goes directly from dairy farms to the processing plant. Bulk tanker trucks, visit farms on a regular schedule and collect the milk. It is then moved to a processing plant. Hauling may be done either by the dairy company's own vehicles or by independent truckers under contract to the processor or the dairy farmer.

The collection of milk is most often undertaken either by a marketing board or a cooperative. In the case of marketing boards many of these are now being turned from loss making parastatals into commercial enterprises under economic structural adjustment programmes (ESAP). In the foreseeable future some of these boards will be privatised either in whole or in part.

4.3.4.2 The transportation of fresh milk

Whilst the tankers which carry the chilled milk from the farm to the factory are becoming ever larger the major remain constraint remains that of the inadequate road infrastructure. During the wet season many roads become impassable and the milk simply is not collected.

Whereas the trucks used to transport other agricultural commodities can be used to move a variety of different types of product, milk tankers cannot. This affects the economics of milk transportation. A haulier moving grain in one direction can often get a return load since the type of truck used can carry any kind of aggregate; be it an agricultural commodity or some other load such as backfill for road building. Milk tankers, by contrast, travel empty in one direction and full on the return journey.

4.3.4.3 Fresh milk grading

Fluid milk is usually separated into at least two grades. For the purposes of this discussion these will be referred to as grades A and B. Grade A would be passed as fit for human

consumption. Grade B would be passed only for use in processed dairy products. Grade B milk is processed at much higher temperatures than fluid milk passes through when being pasteurised and this is why it can be approved for human consumption, albeit if only in the form of processed dairy products.

In general fluid milk attracts higher prices than milk destined for use in processed products. In part, this is explained by the need to compensate market participants for the additional costs of marketing a highly perishable product and moving and storing a very bulky commodity. The second explanatory factor is the fact that fluid milk has a lower elasticity of demand than do processed products[15].

Kiranga[16] outlines the tests carried out by Kenya Cooperative Creameries on raw and processed liquid milk. These are fairly standard throughout the world:

Raw milk obtained from farmers

Organoleptic test	This simply means that the sense of smell is used to detect sour odours and perhaps tasted too. Visual inspection reveals the presence of foreign matter
Lactometer reading	This test is conducted to detect any adulteration of the milk like the adding or skimming of fat
Resazurin test	The bacterial count of the milk is measured giving an indication of the standards of hygiene at the farm.
Butterfat	Fat content is the principal criteria used in deciding the level of payment to individual farmers. Raw milk is expected to have a fat content of at least 3.25%

Processed milk at the factory

Level of acidity	Not more than 0.15%
Butterfat content	Not less than 2.25%
Solids other than fat	Not less than 8.5%
Total plate count	Not more than 100,000 grams
Presence of califorms	Not more than 10 per gram
Efficiency of pasteurisation	Photophatese test

In many developing countries, milk processing has been monopolised by a marketing board or other state marketing agency. Even where markets are liberalised the structure of the milk industry has more often been oligopolistic rather than perfectly competitive.

4.3.4.4 Fresh milk consumption

In rural areas many households either own a cow to provide milk for their own households, and perhaps to make some informal sales to neighbours, or they will purchase milk from a local farmer. If there are localized cooling facilities, and health and hygiene laws permit, untreated milk will be made available in local stores. In Zimbabwe, the Dairiboard, helped establish cooling facilities in remote rural areas. In doing so, Dairiboard helped ensure that rural farmers could sell their milk locally and guaranteed rural consumers a supply of milk. The move also helped Dairiboard reduce its costs since it was previously charged with delivering milk to these remote territories. This involved high transport costs and low volumes.

In addition to these rural exchanges, four channels for distributing fresh milk can be identified, as follows:

Depot salesmen	Marketing boards, large cooperatives and large dairy companies often employ their own salesforce. These sales personnel operate out of depots.
Wholesalers	As the number of sales outlets increases there emerges a need for intermediaries to operate between the salesforce and retailers. This is what happened in Kenya as the number of small kiosks increased dramatically in response to urban growth.[17]
Contractors	Contractors are appointed to routes which in most cases would be uneconomical for the marketing board, cooperative or dairy company to service itself.
Home deliveries	In some urban centres there is a tradition of doorstep deliveries of milk Following the commercialisation of Zimbabwe's Dairibord, this service was privatised. Appointed former employees of the board were sold delivery routes and thus became independent businesses in their own right..

In Middle Eastern and African countries, fermented milk rather than fresh milk has been the traditional food. This may be consumed as a drink or as a relish with cereal porridge. Even in this form, the main criteria of 'quality' has been the butterfat content.

Activity 2: well done! You are completed the chapter. Now is the time of storytelling about the commodity marketing practice you learnt from your observation and asking others. To keep your physical distance from COVID-19 you are at home with your family. Believe or not it's an opportunity to you preset your work in front of your beloved family members. Please don't hesitate! Then some of your family member/s will tell how you shared amusing story or some of them will appreciate your confidence and language usage, or some other could even support you in exploring real practice. Good job!

Exercise questions

1. Explain the stages of agricultural marketing
2. Elaborate the general marketing system of agricultural products
3. Explain grain marketing system of your local area
4. Show livestock and meat marketing system of your local area
5. Discuss poultry and egg marketing system of your country/local area

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CHAPTER 5: MARKETING STRATEGY FOR AGRICULTURAL PRODUCTS

Content

5.0 CHAPTER OBJECTIVES

At the end of this chapter students will be able to

- Familiar with the basic concepts of agricultural marketing strategy
- Explain the need for planning in marketing of agricultural products
- Discuss the types of plan
- Develop marketing plan for agricultural products

5.1 INTRODUCTION

Emphasis should be placed on the need for enterprises to adopt the marketing concept and a marketing orientation. Where this is done there is also a need to develop marketing orientated strategy. It is not enough to install marketing management within an organization with middle managers overseeing functions such as product/brand management, advertising, distribution and marketing research. Marketing should not be implemented only at the functional level. Rather, the business as a whole has to be directed by a strategy whose focus is the marketplace. In formulating such strategies, there has to be a careful matching of market

opportunities with organizational resources; this is the task of strategic marketing planning. Thus the subject matter of this chapter is strategy and planning coupled with the controls that need to be in place if strategies and plans are to be prevented from going astray.

5.2 BASIC CONCEPTS OF AGRICULTURAL MARKETING STRATEGY

5.2.1 Strategy, policy and planning

Given that this is an introductory text, and as such is likely to be read by people with little or no previous knowledge of the subject matter, it would seem appropriate to begin this chapter with an explanation of terms whose meaning may not be immediately clear or are easily confused with one another. Those who are new to the subject are unlikely to have a clear understanding of terms like 'corporate strategy', 'business policy' or 'market planning' and the differences between them, where these exist.

5.2.2 Agri-business Corporate strategy

An organization's corporate strategy is reflected in the statement of its overall objectives and the means by which these are to be met. Corporate strategy is usually stated in such a way as to convey the reason for its existence, i.e. its mission and the business it is in or wishes to be in. Whilst corporate strategy and marketing strategy are not one and the same. Baker[1] argues that:

"…the firm's selection of a marketing strategy will influence and affect everything which it does - to this extent then marketing strategy and corporate strategy are inextricably interlinked."

Whilst this reading continually stresses the central importance of marketing and indeed promotes the idea that every aspect of an enterprise ought to be market driven, effective marketing is a necessary but not sufficient condition for business success. In market driven organisations marketing will be allowed to influence other functional areas like R & D, production, finance and personnel these will each have individual, if concerted, strategies and collectively fall into the realm of corporate strategy.

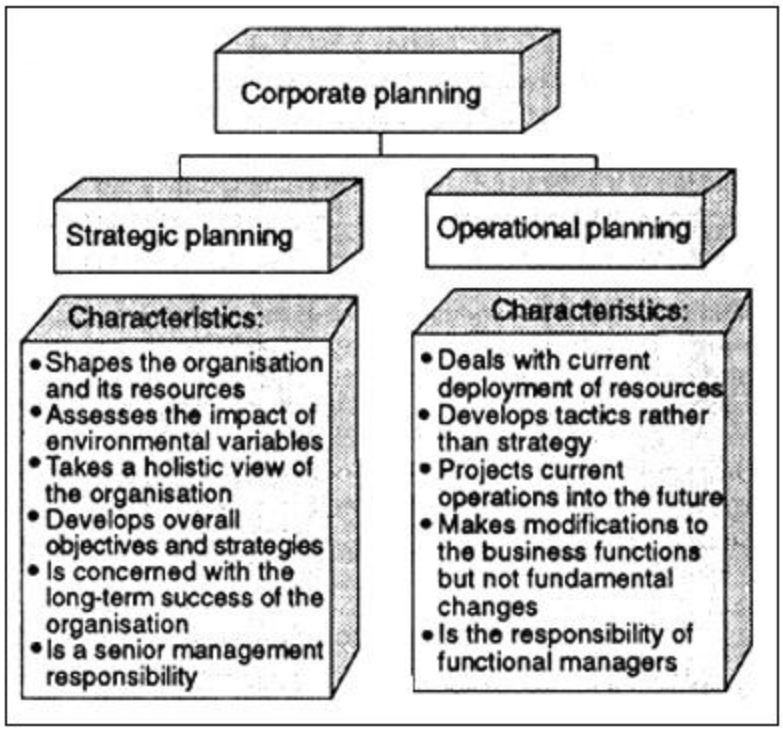
5.2.3 Business policy

Policies are bodies of rules established to guide managers in their decision making. In essence, a policy prescribes the boundaries of the alternative courses of action which the organisation leaves open to him/her within a defined set of circumstances. Thus, for example, a manager whose soft fruit is losing sales in export markets because competitors are offering extended credit to importers may be constrained in his/her actions by company policy with respect to credit. That policy may be paraphrased as, "We will never be placed at a disadvantage by offering terms and conditions of sale that customers perceive to be inferior to those offered by competitors." In other words, the manager will know that he/she has to at least match or if possible better the terms and conditions offered by competitors. How the manager does this is a matter for him/her to decide. (The manager will not necessarily follow suit and offer similar terms to those of competitors but may look instead for ways of increasing the value of doing business with his/her organisation in other ways such as greater flexibility in minimum consignment sizes, faster delivery or improved protective packaging but the option of competing on the basis of credit terms is open to). Alternatively company policy might be embodied in a statement like, "Never to buy custom through direct financial incentives." Here the company may be taking the view that sacrificing part of the marketing margin to gain market share does not help it reach its stated goals and is incompatible with its corporate strategy. In this case, the manager knows immediately that company policy prohibits the use of financial incentives and he/she must seek to regain lost sales in some other way.

5.2.4 Marketing planning

Basically planning involves setting objectives, designing and implementing a programme to achieve the organisation's objectives and having a monitoring and control mechanism to ascertain whether the planned programme is on track or has achieved its desired objectives. Greenley differentiates between corporate planning, strategic planning and operational planning. He says that corporate planning is the organisation's overall planning system and its two principal constituent parts are strategic and operational planning. Strategic planning begins with an assessment of an organisation's internal and external environments.

Figure 5.1 The characteristics of marketing and operational planning



Operational planning can be further divided into short and long term planning. Short term operational planning is also known as tactical planning. Tactics and strategy differ in several important respects. Tactics relate to the following of a plan to achieve short term objectives. Thus tactics equate to the marketing plan rather than marketing strategy. Strategic marketing would establish policies for each element of the marketing mix and would specify how resources are to be deployed. Tactics deal with marketing problems in the short term. Consider the position of a fish supplier who has the competitive advantage of owning refrigerated trucks. The supplier might adopt a marketing strategy in which the price is set high in order to: recover his/her investment in expensive technology; establish a price-quality relationship in the mind of the consumer; and ensure that the level of demand does not greatly exceed the amount he/she is able to supply. Since this is his/her strategy, there would be no departure from the maintenance of prices which are high relative to those of other suppliers. However, there may be tactical maneuvering in order to overcome certain marketing problems. When the supplier, or the product, is new to the market there may be need to stimulate demand by offering discounts. This would probably be done through the use of special 'money-off' coupons, or vouchers, so that the discounts could be targeted at certain customer groups and also to underline the fact that discount prices will not be the normal

practice with respect to the product and are for a limited time only. Similarly, when there is a glut of fish on the market or when the supplier wants to improve short term cash flow or release space in his/her storage facility to accommodate new product lines, the tactic of offering '20% extra free' in a bag of white-bait or kapenta fish might be employed. Once again the supplier would be careful to communicate to the market that these extra value packs would be available in the short term only. Thus, whereas marketing strategy focuses upon achieving long term organisational goals, tactics focus upon achieving annual marketing objectives.

Before moving on, it should be said that corporate strategy, business policy and marketing planning have relevance to enterprises of all sizes. In smaller organisations these management activities are likely to be carried out in a less formal and less sophisticated way than in larger corporations but they need to be done, formally or informally, explicitly or implicitly. Even the small independent grain trader will have to give thought to such matters as his/her strategy for survival in a municipal market overcrowded with grain traders, will have to be consistent whilst remaining flexible - in his/her reactions to problems and opportunities and needs to be in a position to anticipate changes in the marketing environment so that he/she can identify and exploit emerging opportunities.

5.2.5 Strategic business units

An autonomous division or organizational unit, small enough to be flexible and large enough to exercise control over most of the factors affecting its long-term performance. Because strategic business units are more agile (and usually have independent missions and objectives), they allow the owning conglomerate to respond quickly to changing economic or market situations.

When businesses are small and owner operated there tends to be a high degree of entrepreneurial drive. Even after the organisation begins to grow, and salaried managers are employed, there may be no appreciable fall in the level of flair, energy and commitment to achieving success, if indeed there is any at all. However, in very large organisations managers can feel divorced from the events and decisions that are shaping the business. This is particularly the case where the enterprise is highly diversified. For example, a large enterprise

could have interests in say grain trading, fertilizer procurement, the design and installation of silos, financial advisory services to farmers, the hire of transportation of bulk commodities, etc. A manager in fertilizer procurement could well feel that he/she has relatively little effect on overall performance since decisions such as budget allocations and sales and profit targets are dictated and determined by what happens in grain related activities. This is likely to suppress that manager's search for new and better ways of doing business because he/she believes to do so would have relatively little effect and would not be recognised, or rewarded, by senior management. The concept of a strategic business unit (SBU) was developed as a means of retaining the vitality of the entrepreneurial spirit by giving management a high degree of responsibility and autonomy in decision making. The SBU becomes a separate business entity, although still belonging to a larger commercial enterprise, having its own defined business strategy and a management with direct responsibility for its profits and sales performance.

SBUs can be based around individual brands but it is more common for a large corporation to break down its business according to either product categories (e.g. fertilizers, grain trading and farm buildings) or markets served (e.g. agriculture, distribution and construction and design).

Aaker advises that:
"When strategies and competitors have a high degree of commonalty across businesses, it makes sense to combine those businesses into a single SBU. When they differ in meaningful ways, however, it will probably be more useful to use separate SBUs."

The size of a business is also a consideration when deciding on how to structure the organisation. Even when an organization's businesses have similar strategies and needs managers can feel impotent if it is a very large enterprise and it may be best to create two or more SBUs to maximise motivation and the application of initiative, and therefore corporate performance. To do so can change the way a manager thinks about his/her own mission. For instance, the manager of the transport department within a large grain trading organisation is likely to focus his/her attention upon controlling distribution costs and maximising the efficiency with which the transport function is operated. As the manager of an independent

SBU the manager may begin to see his/her task more in terms of maximising the return on investment in transportation. This requires him/her to redefine the business his/her division is in (as opposed to thinking in terms of what business the grain trading division is in). New opportunities may become apparent such as the hiring out of underutilised vehicles, storage capacity and equipment; offering advisory services in logistics, stock control management, fumigation procedures etc.; and so on. The manager thus becomes less myopic in his/her view of the mission of the business.

The degree of autonomy and independence of an SBU varies enormously. Much depends upon whether the SBU has its own dedicated operations such as R & D, design, production, distribution and accounting. Often, the economics of business operations dictate that SBUs share some of these facilities but this will almost undoubtedly reduce the individual manager's sense of responsibility and control.

5.3 The need for marketing planning in agricultural products

Strategic planning began as a response to the inadequacy of assuming that the future will look very much like the past. It is dangerous for a business to extrapolate in economies and markets that are developing and changing. In his classic article "Marketing Myopia", Levitt[4] gives several memorable examples of successful businesses that subsequently went into decline because their actions were based upon the implicit assumption that the *status quo* would be maintained. By way of example, Levitt cites the case of the dry cleaning industry which failed to see that in the future the main threat to their business would come not from continually improved chemical cleaners but from the development of stain resistant synthetic materials. In a similar vein the American railroad companies perceived one another to be competitors but did not anticipate how transporters over road, sea and air would develop their passenger and freight handling facilities to a degree that railroads became uncompetitive. Aaker[4] explains that strategic planning encourages enterprises to abandon the notion that past extrapolations can be relied upon as a basis for future actions. Rather, they should assume that there will be discontinuities between the past and the future.

Strategic planning is also known as strategic market planning when its focus is upon the market environment within which the enterprise must operate. This reflects the fact that what

an enterprise plans to do now, in order to prepare for future developments in the market, should be based upon a detailed understanding of that market and not on mechanistic projections of past and present patterns. Strategic market planning enables organisations to anticipate events rather than merely react to them. Aaker[3] itemizes the following benefits of strategic market planning:

- It focuses management's attention on external events, especially those representing threats and/or opportunities. All too often companies tend to be inward looking when, in reality, customers and competitors are external to the firm and profits are made outside not inside the organisation.
- It locks management into taking a long term perspective when the pressures are to adopt a short term focus with grave dangers of making strategic errors. The natural tendency is for managers to devote their time to dealing with the problems and opportunities of today, to the exclusion of consideration of the longer term. Strategic market management usually has a well-defined time-cycle when managers have to submit short, medium and long term plans. Such cycles instill a discipline that forces managers to devote a minimum amount of time giving thought to future developments.
- It changes the basis on which resource allocation decisions are made. Resource allocations are frequently dictated by financial professionals who understand accounting conventions and terminology and this is often employed to the disadvantage of managers less well informed on these matters. In other cases, resource allocations are made according to the 'political' strength of a group, department or individual manager rather than on commercial merit. Strategic planning seeks to match resources to opportunities (and/or threats).
- It provides a strategic management control system. Monitoring and control are an integral part of strategic management. This enables management to deal with problems as these emerge rather than allowing problems to become crises.
- It provides a vertical and horizontal communication and coordination system. Strategic market management is a vehicle for communicating problems and proposed strategies with precision due to its vocabulary and explicit expression of expectations of the future.

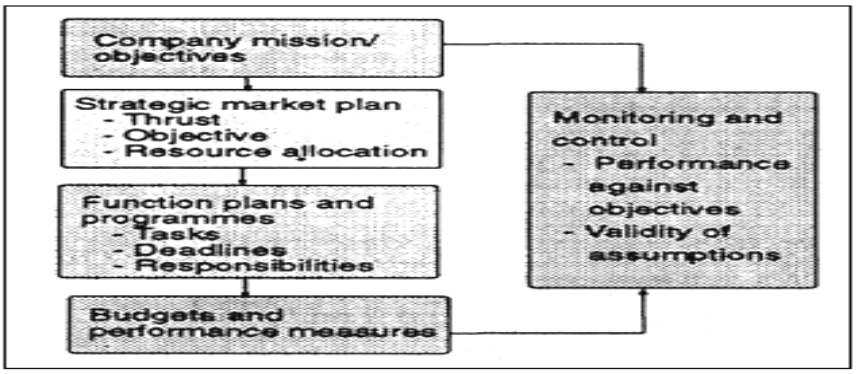
- It helps enterprises operating in rapidly changing and unpredictable environments to cope.

Thus, strategic market management is proactive in that it prepares managers not merely to expect change but to anticipate it. Moreover it serves as an instrument for making management more externally orientated and less insular. Strategic market management also focuses management attention on the longer term and counters the natural tendency for management time to be totally absorbed by today's problems and opportunities.

5.4 The process of marketing planning for agricultural products

As was said earlier, planning involves setting objectives, designing and implementing a programme to achieve the objectives and developing a system for monitoring and controlling the execution of the plan. This process involves analysis, planning, implementation and control. The process of marketing planning is illustrated in figure 5.2.

Figure 5.2 The marketing planning process



The activities described in figure 5.2 can be categorised as diagnosis, planning and action. These three activities, once started within an organisation, never stop. SWOT analysis constitutes the diagnosis stage, the objectives and strategies stages are the planning activities and the action plan and monitoring, evaluation and control stages are the action part of the plan.

5.4.1 TYPES OF PLAN

Plans can be categorised according to time span and complexity. Strategic marketing plans which are intended to guide management through the environment in the long term are

generally complex and have a 2–3 year time horizon. Annual marketing plans (i.e. operational marketing plans) which focus upon specific target marketing objectives of the marketing mix - product, price, promotion, place and people have a one year time horizon. Tactical plans (i.e. short term operational marketing plans) which are "reaction" plans to, say, changes in a competitor's price, have a one to three month duration and are intended to bring the organisation "in tune" or to "react" to a potential disadvantage.

Depending on the agricultural organisation type, plans may vary in terms of their sophistication. A small scale farmer may leave planning to others, for example, to an extension officer who is advising him/her with respect to what and when to plant, or he may react to pre-planning price announcements. His planning may be non-existent or very rudimentary. More sophisticated large scale farmers may have elaborate budgeting procedures, crop rotation patterns and crop production plans. Food processing organisations which deal with many suppliers, products and customers may have a whole range of tactical, annual and strategic plans. Government, which plans the economy, may enlist all types of planning devices. A whole variety of plan types can be identified in the following table:

Table 5.1: types of plan

Corporate plans	An overall master plan for the organisation and its divisions setting out what business (es) it intends to be in over a given time horizon.
Divisional plans	Plans for each division of an organization showing how it intends to carry out the corporate plan and make its contribution to it.
Product line plans	Plans for a series of products within a product range, for example plans to increase a range of canned fruits.
Product plans	Plans for individual products within a range. The decision may be to delete, expand or develop the product.
Brand plans	Plans for an individual brand, for example market repositioning, repackage or deletion of brand.
Product/market plans	Plans which spell out what the organization plans do in each product/market it services.

Functional plans	Plans for advertising, selling and market research departments. It involves decisions on budgets, resources and functions.

5.4.2 The Contents of the marketing plan for agricultural products

The following describes the contents of the marketing plan which includes the executive summary, corporate purpose, situation analysis (SWOT), objectives, strategies, action plan, monitoring evaluation and control and the marketing intelligence system.

Step 1: Executive summary

The planning document should start with a short summary of the main goals and recommendations to be found in the main body of the plan. A summary permits management to quickly grasp the major directions of the plan. Brief summary highlighting the plan's purpose, target audiences, major marketing objectives and goals, desired positioning, marketing mix strategies (4Ps), and evaluation, budget, and implementation plans.

Step 2: Describe the Background, Purpose, and Focus

Begin by noting the social issue the project will be addressing (e.g., carbon emissions) and then summarize factors that have led to the development of the plan. What's the problem? What happened? The problem statement may include epidemiological, scientific, or other research data related to a public health crisis (e.g., increases in obesity), a safety concern (e.g., increases in cell phone use while driving), an environmental threat (e.g., inadequate water supply), or need for community involvement (e.g., need for more blood donations). The problem may have been precipitated by an unusual event such as a tsunami or may simply be fulfilling an organization's mandate or mission (e.g., to promote sustainable seafood).

Next, develop a purpose statement that clarifies the benefit of a successful campaign (e.g., improved water quality). Then, from the vast number of factors that might contribute to this purpose, select one focus (e.g., reducing the use of pesticides).

There are two elements to the corporate purpose, one is to prepare the organisation's basic mission statement, and the other specifies the basic management goals/corporate objective.

2.1 Basic mission

Mission is the reason for which an organisation exists. Mission statement is a straightforward statement that shows why an organisation is in business, provides basic guidelines for further planning, and establishes broad parameters for the future. Many of the useful mission statements motivate staff and customers.

This answers the question what business is the enterprise in and what business *should* the enterprise be in? Periodically the basic mission of an organisation has to be reconsidered since the environment of enterprises is constantly changing. For example, in the wake of market liberalisation many marketing parastatals are being forced to revise their mission statements. Those that formerly had exclusive rights to market staple foods such as grains, and under market liberalisation have had this exclusive function taken away from them, are wrestling with the question of what their role should be now. They may have alternative roles which they could assume such as becoming the buyer and seller of last resort, or becoming an instrument of development whereby the parastatal acts as the marketing agent of small scale farmers and with their storage and transport resources close the competitive gap between smallholders and the large farms and plantations. Then again, the marketing parastatal may be commercialised, or even privatised, in order to increase the level of competition when new grain suppliers enter the market. Whatever role is chosen, it should be expressed within the organisation's mission statement.

Another reason for reviewing an organisation's mission from time to time is that larger enterprises can find themselves gravitating away from their core business. The process can be imperceptible. Investments can be made here and there, none of which amounts to a substantial drain on corporate resources but collectively they can sap those resources and divert the organisation from its core business and core customers. This was experienced by the multinational mining company Rio Tinto. The company's core business was the extraction of precious metals but over time it diversified its portfolio and became involved in many other types of business. Some of these were fairly closely related to mining but others had little or no connection. One sector in which Rio Tinto became involved was agricultural equipment and services. These agricultural businesses ranged from the construction and assembly of equipment to the operation of a forge and the provision of an irrigation systems design service. The management of mines and mining has little in common with the management of

agricultural manufacturing businesses. The methods of operation are quite different, the resources required are on quite different scales, as are the returns on investment, and the strategies that are applied in one sector have no relevance to the other. Eventually, Rio Tinto did what many large organisations have done before it and returned to its core business by divesting itself of these other investments. By doing so, Rio Tinto released resources which it could then channel back into the core business.

It should not be concluded that only large organisations become confused over the question of what business they are in. Some businesses never consider the question of what business they are to operate in at the outset. Foba Engineering, based in Kaduna, Nigeria, is typical of many small companies in that it makes a range of unrelated products. For instance, Foba fabricates both grains milling equipment and trucking for street lighting. It could be said that Foba's business centres around maximising the throughput of its fabrication facilities and for as long as the firm can find jobbing work, but Foba finds it difficult to develop expertise in the production of any of the items it manufactures. More importantly, since it operates in diverse markets Foba has neither the facility to properly study the needs of each of those markets nor can they anticipate future developments since they do not have the resources to monitor trends in all of those markets. Moreover Foba, like so many enterprises, suffers from what is termed in the marketing literature as a 'technological fix'. This occurs when an enterprise defines its business in terms of its current production technology rather than according to the needs which it seeks to serve. In Foba's case they are vulnerable to competition from businesses that manufacture milling equipment by casting, machine turning and even plastic moulding.

3.2 Corporate Objective

Objectives are the set of goals to be achieved within a specified period of time. Corporate objectives are most important goals the organisation as a whole wishes to achieve within a specified period of time, say one or five years. All the departments of an organisation including marketing department should works in harmony to achieve the corporate objectives of the organisation. Marketing department must appreciate the corporate objectives and ensure its actions and decisions support the overall objectives of the organisation.

Mission statement and corporate objectives are determined by the top level management (including Board of Directors) of the organisation. The rest of the steps of marketing planning

process are performed by marketing department. All the actions and decisions of the marketing department must be directed to achieve organisation mission and its corporate objectives.

Step 3: The strategic marketing audit

A marketing audit is a comprehensive, systematic, independent, and periodic examination of a company's—or business unit's—marketing environment, objectives, strategies, and activities with a view to determining problem areas and opportunities and recommending a plan of action to improve the company's marketing performance.

Marketing audit helps in analyzing and evaluating the marketing strategies, activities, problems, goals, and results. Marketing audit is done to check all the aspects of business directly related to marketing department. It is done not only at the beginning of the marketing planning process but, also at a series of points during the implementation of plan. The marketing audit clarifies opportunities and threats, so that required alterations can be done to the plan if necessary.

8 Steps for Conducting a Marketing Audit

The marketing audit process helps your company analyze and evaluate your B2B marketing strategies, activities, goals and results. While the process takes time, the results can be enlightening and might:

- Focus your communication of a consistent message to the right customers.
- Reveal new, unknown or neglected markets.
- Help fine-tune current strategies and plans to help increase market share.

Here are the eight steps for conducting a marketing audit to capture the information a corporate marketer needs about their company and how they do business.

1. **Assemble an Overview of Your Company.**

The following are the details to be included as part of this step:

- Company location, date established, sales history, number of employees, key personnel and chronology of company events like mergers, acquisitions and divestitures.
- An estimation of the current awareness level of company as well as perception of your company has among your buying influencers.

2. Describe Your Marketing Goals and Objectives. They can be concepts like increase company visibility, increase audience size, differentiate from competition, increase or maintain market share, generate qualified sales leads or increase usage within existing customers. List your goals and objectives as being:

- Long-term, with 6 to 8 goals listed a priority order to be accomplished in the next two years.
- Short-term, with a narrowing to 1 to 2 goals to be accomplished in the next 12 months.

3. Describe Your Current Customers. Include information like:

- Job titles or functions, industry or SIC codes, geographic location, company size and other demographic, ethnic or behavioral descriptions.
- Size of current customer audience.

4. Describe Customers you'd like to Target. Include the same type of information used in # 3 but also include:

- If target customers are outside your usual industry, geography or size of current customers.
- Any internal or external factors that have changed in your business or industry causing you to target a particular group.
- A behavior that needs to be present for retargeting to occur.
- Size of target customer audience.

5. Describe Your Product or Service. Describe it in terms of its purpose, features, benefits, pricing, sizing and distribution methods. Also include:

- Strength or weakness as compared to competition.
- Any economic, legal, social, technical, seasonal or governmental factors that affect product/service.
- Current awareness level as well as perception of your product/service.
- Sales or market share history and any changes over time.

6. Describe Your Past Business or Marketing Encounters. Describe what has:

- Helped grow your business as well as what has not helped grow business.
- Not been tried but might have helped.
- Your competition has been doing to grow their business.

7. Identify Three to Six Competitors. Include the company name and location as well as:

- Describe their products/services in terms of their features, benefits, pricing, sizing and distribution methods.
- Sales or market share history.
- Competition's strategy for the near future.

1. **Begin to Outline a Communication Plan.**

Begin to list current and future media sources as well if costs are fixed annual costs, and what funds are available for new efforts for:

- Advertising vehicles like broadcast, print, out-of-home and online advertising.
- Promotional vehicles like website, collateral, direct marketing, interactive and online marketing.
- Media relation vehicles like media contacts, public relations and articles.
- Event vehicles like trade shows, special events, seminars and webinars.
- Analytic vehicles like databases, market research and tracking systems.
- List any promotional medium considered to be the most effective to date.

Once this information is written down on paper, you can refer back to it as your roadmap to achieving your marketing goals and objects for the coming year. And as new ideas pop up, this document can help remind you of the big picture. Minor adjustments can be made along the way as changes are bound to occur in sales, customer retention and product development throughout the year.

Step 4: Conduct a Situation Analysis

4.1 SWOT analysis

By constantly monitoring and reviewing the organisation's strengths, weaknesses, threats and opportunities (SWOT). This is an extremely important part of the Marketing Plan. The purpose of a situation analysis is to investigate the company's own strengths and weaknesses (internal analysis) and discover the threats and opportunities in the environment (external analysis) so it can avoid the threats and take advantage of the opportunities. Threats have to be analysed to see if they are "negative" or "neutral" threats. Threats may be insignificant.

The situation analysis helps identify the answer to four basic questions: where is the organisation now? How did it get there? What conditions is it heading into? What strategy should it adopt for the future?

figure 5.3 SWOT analysis

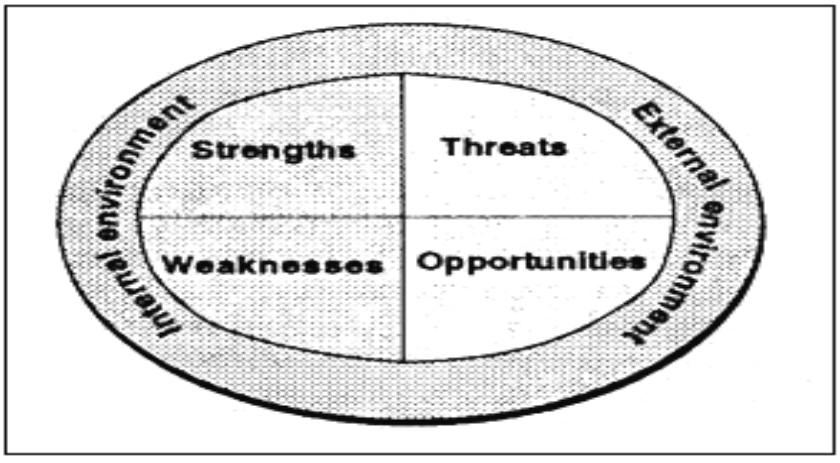
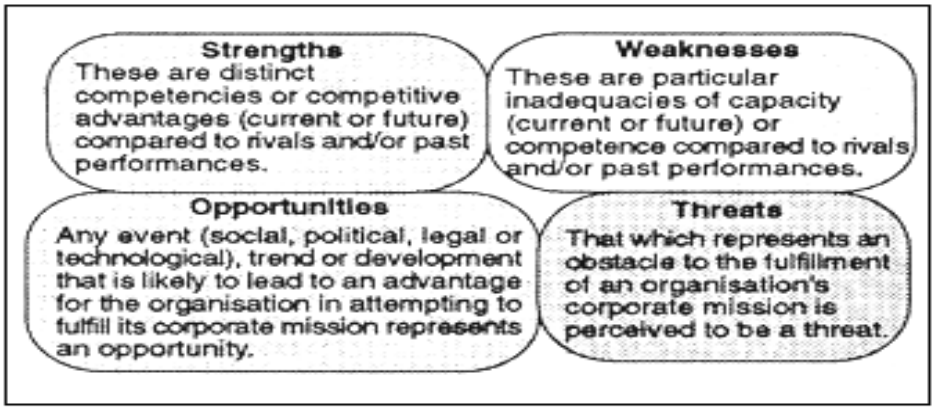


Figure 4.3 reveals that strengths and weaknesses arise from within the organisation and therefore are in large measure controllable. Threats and opportunities, however, have their

origins in the external environment and are, for the most part, outside the direct control of the organisation. Nonetheless, an organisation that is carefully monitoring changes in the external environment is in a position to anticipate events (i.e. to act before the event takes place).

Figure 5.4 suggests some of the questions that might be used in assessing strengths, weaknesses, opportunities and threats. The meanings of these elements of SWOT analysis are:

Figure 5.4 Indicators of strengths, weaknesses, opportunities and threats



4.2 **Marketing Assumptions**

Key Marketing Assumptions/learning from a review of similar prior efforts and additional exploratory market research

A good marketing plan is based on deep customer understanding and knowledge, but it is not possible to know everything about the customer, so lot of different things are assumed about customer.

For example:-

- **Target Buyer Assumptions** - assumptions about who the target buyers are.
- **Messaging/Offering Assumptions** - assumptions about what customers think are the most important features of product to be offered.

Step 5: Select Target market

Market segments are based on product or customer characteristics. Typical product characteristics are different sizes, prices and colours whereas customer characteristics may be age, sex, income, social class, geographical location or personality.

5.1 Descriptions of the target market

Descriptions of priority target market(s), including demographics, geographic, readiness to buy, relevant behaviors, values and lifestyle, social networks, and community assets relative to the plan's purpose and focus.

5.2 Rationality of the target market

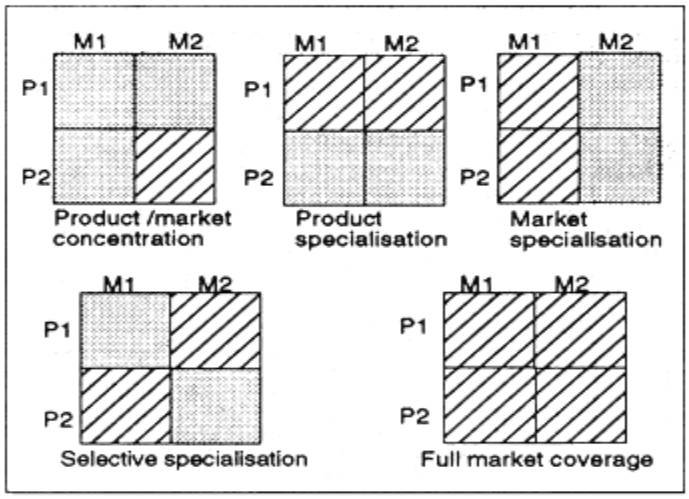
Market research findings providing a rationale for targeted market, including factors such as size, problem incidence, problem severity, defensiveness, reachability, potential responsiveness to marketing mix elements, incremental costs, and organizational match, relative to the plan's purpose and area of focus.

The choice of a target market and the marketing of a product can lead to a number of product/market coverage strategies, as illustrated in table 5.2.

Table 5.2: Target market strategies

Product/market concentration	Growers in Ivory Coast specialising in banana production which is then exclusively sold into French wholesale markets.
Product specialization	In China vegetable traders do not handle other products, not even fruit. The reverse is also true: Chinese fruit traders do not handle vegetables.
Market specialization	Lesotho's production of canned white asparagus sold at premium prices into specialist food stores whose customers are in the higher income categories, in high income countries such as Belgium and Germany.
Selective specialisation	Colombian flower producers grow long stemmed carnations for the North American market and short stemmed carnations for the European market.
Full market coverage	John Deere manufactures a full line of agricultural equipment and seeks to market it, either directly or through agents, in every country in the world that has an agricultural industry.

Figure 5.5 Market coverage strategies

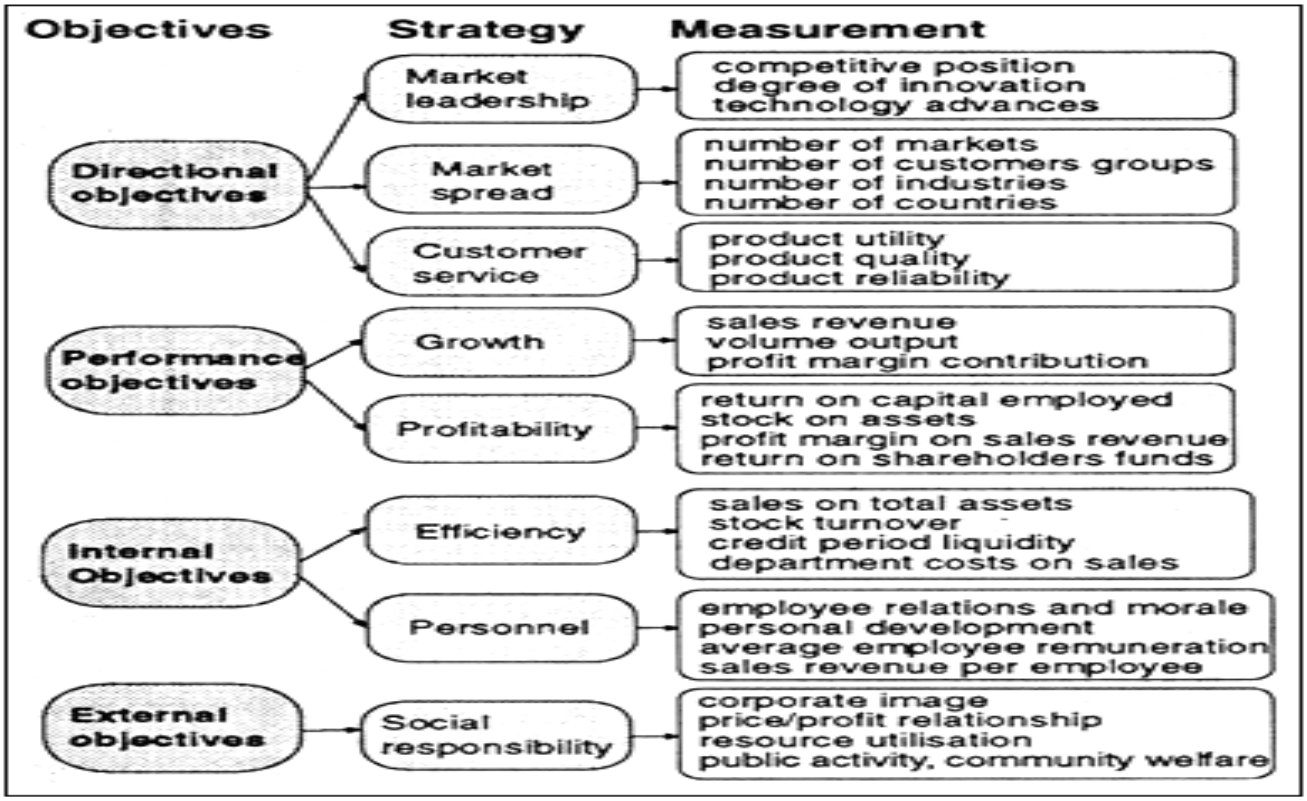


Step 6: Objectives

After identification of opportunities and challenges, the next step is to develop marketing objectives that indicate the end state to achieve. Marketing objective reflects what an organisation can accomplish through marketing in the coming years.

Objective identifies the end point to achieve. Having discovered the issues with which it is faced; management must then make some decisions about objectives which will then guide the subsequent search for promotional strategies and action programmes. Objectives should be quantifiable, measurable, achievable, communicable and consistent. Objectives may be stated in economic or subjective terms. Greenley has carried out a comprehensive study of the range of objectives which organisations pursue, and drawing upon the work of such as Ansoff[5], Hofer[6], Pearce and Robinson[7] and Thompson and Strickland[8] has summarized these objectives and the way in which they tend to be measured. The results of Greenley's work are shown in figure 5.6.

Figure 5.6 Organizational objectives and their measurement



It will be noted that organisations pursue non-economic as well as economic goals. Those goals which do not relate to profitability, such as employee relations and those related to social responsibility, are social rather than economic objectives.

Economic objectives have to be translated into marketing goals. For example if a company wants to earn $1.8m, profit, that is, its target profit margin is over 10 percent on sales, then it must set a goal of $18m in turnover. Further if the company sets an average price of $26, then it must sell 692,300 units. If the company only has a 7 percent market share, then it would be expecting the total industry sales to top 23 million units. The company has to set certain targets for consumer awareness, distribution coverage and so on, if it expects to maintain or improve its 3 percent market share. Hence the overall marketing objectives might include the target of doubling consumer awareness of the brand being sold and raising the number of distribution outlets by about 10 percent over and above the other stated targets.

Case 5.1 Sime Darby Of Malaysia Goes Downstream

Sime Darby is a large Malaysian agribusiness firm that built its considerable fortunes on

the export of rubber, and later crude palm oil. Sime Darby's experience was in commodity trading but the company recognised that it needed to get into 'value added' businesses. Competition in commodity centres around. Moreover, the prices of commodities tend to be highly volatile being subject to the simple laws of supply and demand. The further 'downstream' of production an enterprise is able to operate the greater the opportunities for adding value to products and for differentiating products from those of competitors. It was for these reasons that Sime Darby began to actively pursue ways of reducing its dependence upon its traditional products and diversifying into processing and manufacturing.

It is to be remembered that at the point when Sime Darby began to depart from its traditional commodity businesses it was not in crisis but was enjoying record sales and profits in those businesses. However, senior management was conscious that its continued growth and expansion would come only to a limited extent from its trading activities. At the same time, the corporation was aware that its technical capabilities were more of a weakness than strength. Therefore, Sime Darby adopted a strategy of forming joint ventures and strategic alliances with foreign companies with greater technical expertise. Its partners include Ford, Caterpillar BMW.

Today Sime Darby employs over 21,000 people, enjoys pre-tax profits in excess of US$120 million and achieves a 14 percent return on shareholder's equity. The company operates such diverse businesses as plantations and estates, agricultural equipment distribution, commodities trading and related businesses in finance and insurance. These activities are organised into six divisions or strategic business units.

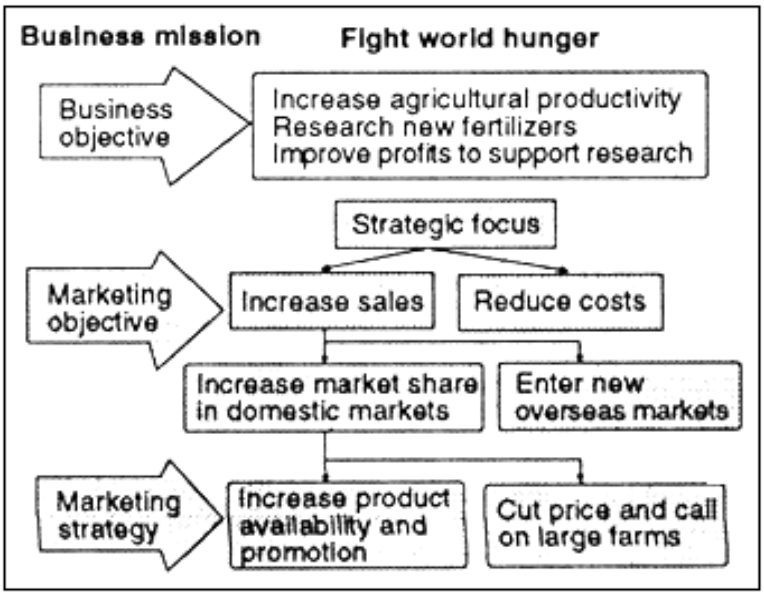
Sime Derby's core business is still in agriculture. Over fifty percent of corporate profits come from products grown on its plantations. Now, however, the company is deeply involved 'downstream' of production. Edible Oil Products (EPL), a vegetable oil refinery located in Singapore was Sime Derby's first acquisition. EPL processes cooking oil from palm, soya, corn and other crops. EPL's products are marketed to consumers in Africa, Asia, North America and Japan. Since Sime Darby has bought food processing businesses in various Asian countries as well as Australia, and its diversification continues.

Thus Sime Darby made the transition from a Malaysian commodity trader, heavily dependent upon two crops - rubber and palm - to an international manufacturing and trading conglomerate. It did so by recognising its strengths in marketing and trading and its weaknesses in the technical aspects of food processing. The corporation also recognised its opportunities as a cash rich business and one that was well situated to give foreign partners an entry into Malaysia, where majority foreign ownership was not permitted. Lastly, Sime Darby foresaw the threat of remaining dependent on commodities where prices and profits were volatile and moved into value added products.[9]

Objectives are usually set in a hierarchical way. Figure 5.7 provides an illustrative example of this hierarchy for a hypothetical fertilizer company. Each objective can be achieved in a number of ways and so the marketing manager is faced with making choices.

Strategic objective: A strategic objective is a choice and a statement of priority for the enterprise. Objectives are drawn up from an analysis of the strategic focus.

Figure 5.7 Hierarchy of objectives for Bora Bora fertilizers



Step 7: Develop Positioning Statement

How we want the target audience to see the targeted behavior, highlighting unique benefits and the value proposition.

In brief, a positioning statement describes how you want your target audience to see the product you want them to buy, relative to competing behaviors. Branding is one strategy to help secure this desired position. Both the positioning statement and brand identity are inspired by your description of your target audience and its list of competitors, barriers, and motivators to action. The positioning statement will also guide the development of a strategic marketing mix. This theory was first popularized in the 1980s by advertising executives Al Ries and Jack Trout, who contended that positioning starts with a product, but not what you do to a product: "Positioning is what you do to the mind of the prospect. That is, you position the product in the mind of the prospect."[14] We would add, "Where you want it to be."[15]

Step 8: Strategic focus

There are many ways to achieve strategic objectives and, indeed, the focus may change over time. A grower of oranges may begin by needing to achieve volume if he/she is to be able to completely fill a container and ship economic loads. Later, the organisation's focus may switch to cost reduction as the market becomes more competitive and margins are being

squeezed. The basic strategic options are outlines in figure 5.8. Marketing strategies are formed to achieve the marketing objectives. Marketing strategies are formed to determine how to achieve those end points. Strategies are broad statements of activities to be performed to achieve those end points.

Figure 5.8 Basic strategic options

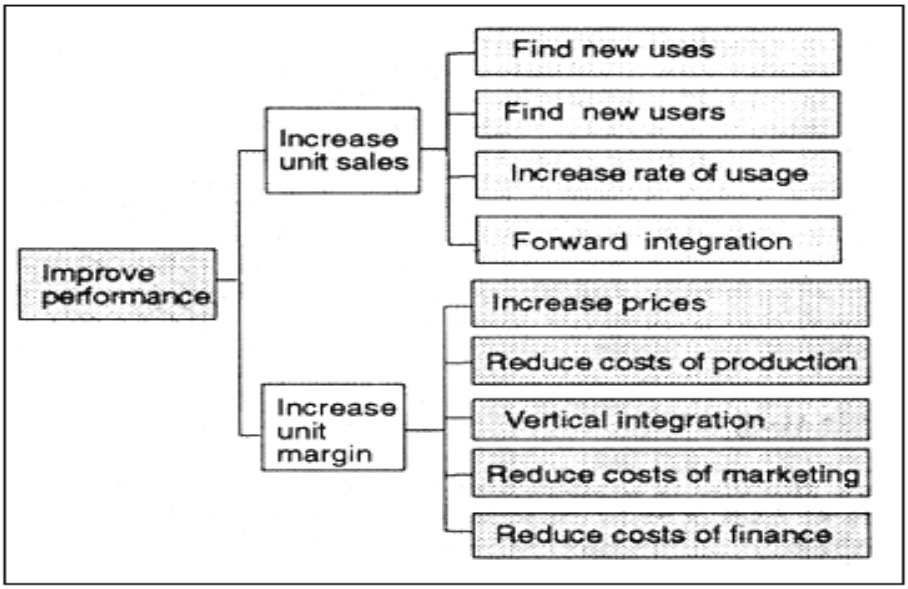


Figure 5.8 suggests that there are two main ways of achieving improved performance, i.e. volume or productivity strategies. Basically the choice is to increase volume or reduce costs; ideally these should be pursued simultaneously. For example, if the objective is to increase sales revenue by 10 percent such an objective can be achieved by either increasing the average price on all units, or by increasing the overall sales volume and/or by selling more of the higher-priced units. Each of these strategies can be achieved by increasing market growth and/or market share. In developing the strategy, the basic marketing tools can be identified: target markets, position in the market, product line, price, sales force, etc.

Step 9: Core strategy

The core strategy is a statement of what an organisation is offering to create a preference for its products and services in the marketplace. Through a careful examination of the customer and his/her needs and wants, the organisation can determine what is required to create a differential advantage.

9.1 The marketing mix

The marketing mix is a concept first introduced by McCarthy[10] and comprises the product, price, place (distribution) and promotion decisions and is often called the "4 P's". The mix is the right combination of marketing activities to ensure customer satisfaction. Each element of the marketing mix has a chapter of this textbook devoted to its exposition and therefore they are discussed only briefly here.

9.1.1 Product

The product offering can be manipulated to create different market effects at three levels: the core product, the tangible product and the augmented product. At its core, a product is not a physical entity but the benefits that it offers customers. Those benefits may be physical or psychological in nature. The consumption of imported foods, in a developing country, sometimes has as much to do with the status of being seen to buy sophisticated, and perhaps expensive, products as it has with any superior physical qualities compared to domestic equivalents. The tangible product refers to its features, quality, styling, packaging, branding and labelling. A third level is that of the augmented product, that is, additional service elements which are attached to the product. Examples include after-sales service, extended guarantees, credit facilities, technical advice and product trials.

9.1.2 Price

Prices should be set in relation to specific pricing objectives. Pricing decisions include payments, terms, discounts, contract and pricing structures. Non-price competition may come through packaging, labelling and advertising. Prices have to reflect the costs of production and marketing and target profit margins. A variety of approaches may be taken to pricing including cost based, demand based, competitor based and market based.

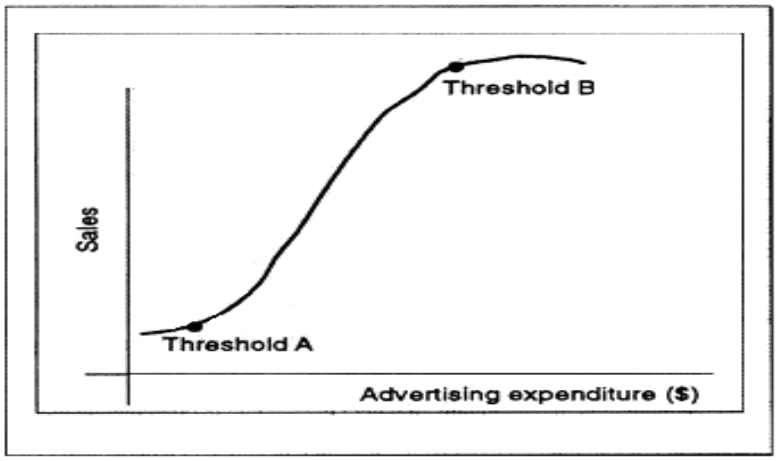
9.1.3 Promotion:

Promotion includes advertising, public relations, selling, exhibitions, brochures, data sheets and free gifts. Possibly the most important decision about promotion is the message to be communicated. The message(s) has to differentiate the products and/or its supplier. To this end, an organisation will seek to convey a unique selling proposition (USP), that is, to find

some aspect of the product, service or organisation which others cannot, or simply do not, promote to customers and this is perceived to be important or attractive to those consumers.

Advertising is a form of communication which a sponsor pays to have transmitted via mass media such as television, radio, cinema screens, newspapers, magazines and/or direct mail. It is intended to both inform and persuade. Whereas, promotion tends to be short term in its effects, advertising tends to take time to have any effect, but then its effects, when they come, can be lasting. Whilst no one has firmly established exactly how advertising works, it is generally thought to conform to the sales- expenditure pattern depicted in figure 4.9.

Figure 5.9 A theoretical advertising response curve



This S-shaped curve suggests that over a range of low level expenditures there is little response in terms of increased sales. This is perhaps because the intensity of advertising that such expenditures would buy is below a threshold where most of the target audience would become aware of the product or service. Once that threshold is crossed there is a dramatic response to increasing levels of advertising expenditure. Eventually though, the target market is saturated and whilst advertising expenditures continue to increase the market response plateaus. Put another way, the enterprise reaches a point where for every dollar spent on advertising the sales returns are below $1.00, i.e. the law of diminishing returns applies. The challenge to strategic planners is to work out the range of advertising expenditures that will prove the above threshold A but below threshold B.

9.1.4 Place

Produce distribution elements include physical distribution like storage handling, transportation and warehousing, both on and off farm and functional distribution e.g. wholesaling and retailing. The decision as to which distribution channel the organisation should seek to use falls into the realm of strategic marketing but actions within the chosen channels are operational in nature. Growers, processors and manufacturers have to market their products to, and not through, channel members. To the extent that channel members see themselves as anyone's agent, they are more likely to see themselves as agents of their customers rather than agents of product suppliers.

Step 10: Forecast the Expected Results

Marketing managers have to forecast the expected results. They have to project the future numbers, characteristics, and trends in the target market. Without proper forecasting, the marketing plan could have unrealistic goals or fall short on what is promised to deliver.

- **Forecasting Customer Response** - Marketing managers have to forecast the response that the average customers will have to marketing efforts. Without some idea how the marketing will be received, managers can't accurately plan the promotions.
- **Forecasting Marketing cost** - To make the marketing plan stronger, accurate forecast of marketing cost is required to be done.
- **Forecasting the Market** - To accurately forecast the market, marketing managers have to gain an intimate understanding of customers, their buying behaviour, and tendencies.
- **Forecasting the Competition** - Forecast of competition like - what they market, how they market, what incentives they use in their marketing can help to counter what they are doing.

Step 11: Create Alternative Plan

An alternate marketing plan is created and kept ready to be implemented at the place of primary marketing plan if the whole or some part of the primary marketing plan is dropped.

Step 12: Marketing Budget

The marketing budget is the process of documenting the expected costs of the proposed marketing plan. One common method to allocate marketing budgeting is based on a percentage of revenue. Other methods are - comparative, all you can afford, and task method.

Step 13: Action plan

Implementing a marketing programme involves deciding on long, medium and short term activities for all marketing functions. Decisions have to be made on budgets, staffing levels, how to communicate the elements of the plan, coordination of activities and motivating people to carry out the plan. All of this has to ensure marketing efficiency. Whilst too much planning can stifle flexibility and creativity, no planning is a recipe for disaster. It leads to ill-conceived product and marketing strategies, enhancing the possibility of waste and inefficiency in a vital industry: the production and marketing of food.

Step 14: Monitoring, evaluating and controlling the marketing planning

It is the task of management to ensure that the marketing plan is carefully monitored, evaluated and controlled. Indeed authors such as Mockler[11] see no distinction between planning and control but view them instead as steps within the same cycle. Typical controls involve setting standards of performance, evaluating actual performance against standards and, if the deviations are intolerable, taking corrective action. Marketing planning can be seen as a cycle, which begins with clear objectives that set out what the marketer intends to achieve, and ending with a feedback mechanism in order that the objectives can be evaluated, a course of corrective action can be taken (if there are deviations from plans) and the organisation can monitor its usage of resources.

Figure 5.10 The planning execution and control cycle

Clearly any system of monitoring and control has to be implemented in accordance with organisational structure. That is, if there are SBUs, divisions or other business units that have a degree of autonomy and responsibility for the development of strategy and plans, then these must have their own systems of monitoring and control in place.[12]

Marketing controls

Marketing control involves setting a desired standard, measuring deviations from the standard and taking the appropriate action. In many cases the standard is expressed in terms of budgets and any substantial deviation from budget is investigated. Both positive as well as negative deviations can be a cause for concern. If sales are far in excess of planned levels then this can over-stretch the enterprise's production, storage and distribution resources, for example. At the same time, the investigation of all deviations from budgeted levels would prove an unbearable load on managers. Instead, since not all deviations are significant, parameters are set for "allowable" deviations and only those exceeding these parameters are investigated. There are four types of marketing control: the annual plan control, profitability control, efficiency control and strategic control. Table 5.3 shows the level of management which has responsibility for each of the types of control.[13]

The different types of controls can be seen as a complementary and interlocking set of activities, as depicted in figure 4.11.

Figure 5.11 The different levels of marketing controls

Table 5.3 Types of marketing control

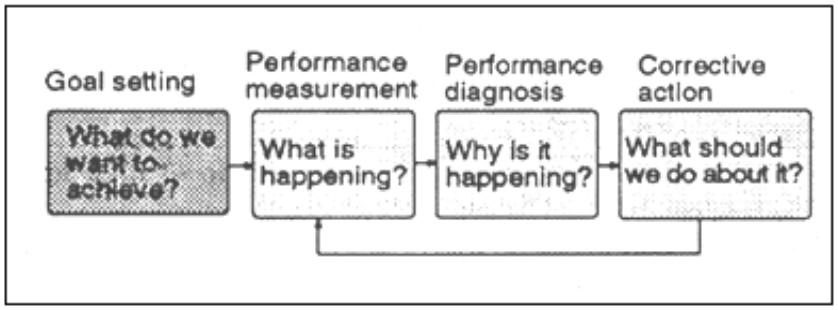
Type of Control	Prime Responsibility	Purpose of Control	Approaches
Annual plan control	Top management	To examine whether the results are being	Sales analysis Market-share analysis

	Middle management	achieved	Sales-to-expense ratios Financial analysis Attitude tracking
Profitability control	Marketing controller	To examine where the company is making and losing money	Profitability by product territory Customer group trade Channel order size
Efficiency control	Line and staff management Marketing controller	To evaluate and improve the spending efficiency and impact of marketing expenditures	Efficiency of sales force Advertising sales promotion distribution
Strategic control	Top management Marketing auditor	To examine whether the company is pursuing its best opportunities with respect to markets, products, and channels	Marketing effectiveness rating instrument Marketing audit

Marketing plan control

The purpose of the annual plan control is to ensure that the company achieves the sales, profits and other goals established by the marketing plan. It is, therefore, an operational control plan. This type of control applies to all levels of the organisation and the process.

Figure 5.12 The annual plan control process



Several measures may be taken in assessing performance in relation to the marketing plan, including sales analysis, market share analysis, marketing expenses to sales ratios, attitude tracking, profitability and efficiency. Each of these will be briefly discussed.

Sales analysis

Actual sales can be compared to sales targets and budgets and an analysis of any variance between the two would be carefully examined. Sales analysis centers interest upon the relative contribution of different factors to a gap in sales performance. Say, for example, that the

managing director of the National Canning Company is told by the marketing manager that sales are up half a million units on the target and that revenues are five percent above budget, this would be cause for celebration. Or would it? Before answering this question the managing director would wished to look at these figures a little more analytically. The operating results might look those presented in table 5.4.

Table 5.4 Operating results for a canned product

Canned Produce	Planned	Actual	Variance
Sales (units)	5,000,000	5,500,000	+ 5000,000
Price per unit ($)	3.50	3.40	- 0.10
Total revenues ($)	17,500,000	18,700,000	+ 1,200,000
Total market (units)	10,000,000	12,000,000	+ 2,000,000
Share of market	50%	46%	- 4%
Variable costs @ $ 2.5 per unit	12,500,000	13,750,000	+ 1,250,000
Profit contribution ($)	5,000,000	4,950,00	- 50,000

It can readily be seen that, although sales have exceeded expectations, the planned price was not achieved and so the product made a lower contribution than expected. In this case the price mechanism would need investigating as would the estimates of market share. Whilst the Canning Company recorded an increase in sales of ten percent, the market as a whole was twenty percent above target. Seen in this light, there is more cause for concern than for celebration.

This approach to sales analysis can be extended to specific products, market segments and/or sales areas, etc. to evaluate the profit contributions of each and to identify those that were poor performers. From there consideration can be given to the underlying reason for that performance.

Market share analysis

Market share analysis shows how well the organisation is doing vis-a-vis competitors. The first step is to determine market share, either by absolute measures (overall market share) or relative to main competition (relative share), or to leading competitor (relative to market

leader share). The second step is to analyse market share movements in terms of the following:

Total market share	=	Customer penetration (CP)	×	Customer loyalty (CL)	×	Customer selectivity (CS)	× Price selectivity (PS)

where:

CP = Percentage of all customers who buy from the company.

CL = Purchases of this company by its customers expressed as a percentage of their total purchase from all suppliers of the same product.

CS = Size of the average customer purchases from the company expressed as a percentage of the size of the average customer purchase from an average company.

PS = Average price charged by this company expressed as a percentage of the average price charged by all companies.

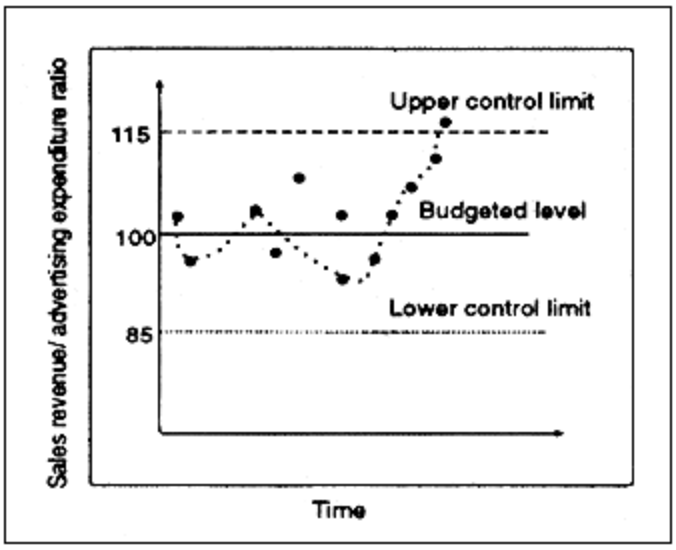
Example: If the CP = 3% and CL = 2% and CS = 2% and PS = 2%, then overall market share = 3×2×2×2 = 24%.

Market expense to sales ratio

The marketing expense to sales ratio is used to ascertain whether the organisation is spending too much or too little on marketing in order to achieve its sales goals. The marketing expense to sales ratio can be made up of a number of components such as sales force size to sales, advertising to sales, sales promotion to sales, and marketing research to sales and sales administration to sales. The monitoring procedure involves determining an acceptable level (or standard) and by using a variety of charting devices (control chart or expense to sales deviation chart) look at actual to budgeted expenditure.

An illustrative example may help to clarify the procedure. Suppose that management has decided that the organisation should spend around 0.01 percent of sales revenue on advertising. This equates to 1¢ in every $1.00. Over a period of time, the following pattern of advertising expenditures to sales revenues is observed.

Figure 5.13 Marketing expense control chart



Before any decision or even interpretation, is made on the basis of these figures, management has to be clear on whether the baseline ratio was derived from some systematic evaluation of cause-and-effect or simply reflects what the organisation felt that it could afford. In the case of the latter, this chart is of doubtful value. If, on the other hand, the ratio has been arrived at after careful analysis, then when both the upper or lower boundaries are breached there is cause for concern. At the very least, management has to raise questions over the reasons why this has happened.

Customer attitude tracking

Whilst most of the control techniques described so far has been quantitative in nature, customer attitude tracking studies give qualitative information. The main customer attitude tracking measures are complaint or suggestion schemes, customer panels or customer surveys. These can be very useful in revealing what customers feel about the organization, its products, services and behavior towards society as a whole.

Profitability control

Besides annual plan control, organisations need to measure the profitability of their various products, territories, customer groups, trade channels and order sizes. This information will help management determine whether any products or marketing activity should expand, reduced or eliminated. There are two major techniques: marketing profitability analysis and Lorenz curves.

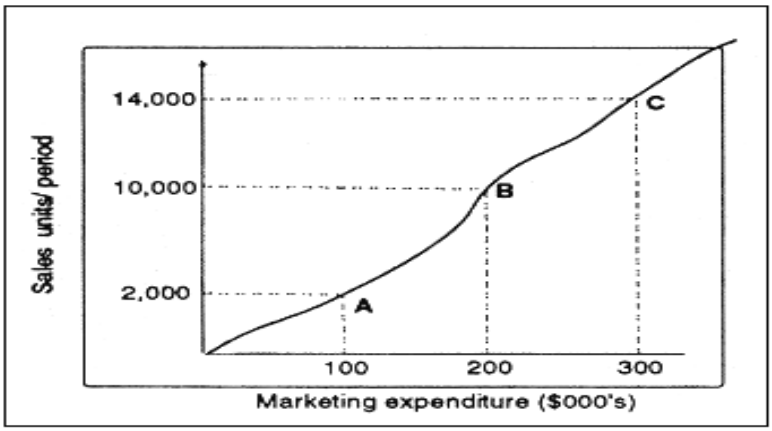
Marketing profitability analysis

This consists of starting from the target profit plan and then applying the control measure - marketing profitability analysis. Assume the manager of a line of baked products is setting his/her annual plan. Further assume that it is believed that:

- demand conditions will be the same next year as this year
- there will be no change in marketing strategy
- the price set will reflect only changes in input costs and not competitive activity
- the manager's interest is in making "satisfactory" not "optimal" profits.

In theory the manager should devise a plan intended to optimise the sales response function. A sales response function forecasts the likely sales volume during a specified period associated with different levels of one or more marketing mix elements. Typically he/she should assess the sales which would be generated by ever increasing amounts of marketing expenditure until the point of diminishing returns is reached.

Figure 5.14 the sales response function



With reference to figure 5.14 marketing expenditure of $100,000 and $200,000 will generate sales units of 2,000 and 10,000 respectively (points A and B). However the optimum marketing expenditure is $300,000 resulting in sales units of 14,000 (point C). Any expenditure beyond this point will generate diminishing returns. In practice, estimating the optimum marketing expenditure is very difficult because of the interrelated effect of the marketing mix variables.

Case 5.2 One Man's Threat Is another Man's Opportunity - The Case of Venezuela's Flour Market

In the late 1950's Venezuela's Government adopted policies of high tariffs and import duties in order to encourage more manufacturing within the country. Up to that point Venezuela had been a very profitable export market for North American flour millers. MONACA, a wholly-owned subsidiary of International Foods, was the first 'local' company to invest in modern roller milling technology to take advantage of the situation. Within a few years MONACA was operating three large mills and was able to market all it produced, and it then diversified into animal feed production. The most interesting aspect of MONACA's success story is the strategy that changed a commodity export market into a market for value added branded consumer products.

MONACA's first challenge was to develop a market entry strategy into the consumer flour market. The competition was formidable with well-known North American companies such as General Mills, Pillsbury and Quaker dominating the market. In its search for an appropriate strategy MONACA conducted marketing research and discovered that some imported brands had quality control problems. A number of respondents to the survey complained that bugs got into the flour during shipment. To persuade consumers that its Robin Hood brand was bug free, MONACA packed it in clear plastic wrapping so that consumers were able to inspect the flour. Competitors' products were packed in paper. Within two years of launching this product MONACA had fifty percent of the market. To minimise distribution costs and maximise market penetration MONACA sold its product through an existing network of agents operating throughout the country. This gave the company a higher level of market coverage than competitors were able to achieve and MONACA were able to offer a higher level of customer service. From the outset MONACA adopted an aggressive marketing policy. Whereas most locally produced goods are considered inferior to their imported equivalents and local manufacturers typically try to conceal differences, MONACA believed its product to be superior and therefore emphasised the differences in its promotional campaigns.

The company has continued to grow and develop. In addition to its flour and feeds businesses, it manufactures convenience foods like its maize package mixes and a range of speciality flours. MONACA has succeeded in Venezuela because it boldly exploited the weaknesses of the competition and made sure that its product actually was superior.[14]

Returning to the example of the product manager for the baked products line, a plan set under his/her assumptions might look like that in table 5.5:

Table 5.5 Target profit plan

1.	Forecast of total market (cases)	5,000,000
2.	Forecast of market share	25%
3.	Forecast of sales volume (cases) (1×2)	1,250,000
4.	Price to distributor per case	$ 20
5.	Estimate of sales revenue (3×4)	$25,000,000
6.	Estimate of variable costs per case [Ingredients ($6) + cans ($2) + labour ($2) + physical distribution ($2)]	$12

7.	Estimate of contribution margin to cover fixed costs, profits and marketing [(4–6)×3]	$10,000,000
8.	Estimate of fixed costs (Fixed charge $1 per case x 1,250,000 cases)	$ 1,250,000
9.	Estimate of contribution margin to cover profits and marketing (7–8)	$ 8,750,000
10.	Estimate of target profit	$ 3,000,000
11.	Amount available for marketing (9–10)	$ 5,750,000
	Split of marketing budget:	
	• Advertising	$ 2,000,000
12.	• Sales promotion	$ 1,000,000
	• Selling	$ 2,500,000
	• Marketing research	$250,000

In this example the firm is estimated to make $3 million profit after deduction of all expenditures. However, as indicated earlier, this analysis assumes a static position and a constant sales response rate. In practice, it may be necessary to perform sensitivity analysis on a number of combinations of the marketing mix elements. In the analysis in the table 3.3 a set of mix combinations could yield the following results shown in table 5.6). It should be noted that these results are before subtraction of variable and fixed costs and selling and marketing research costs.

Table 5.6 Marketing mix combinations and results

Marketing Mix No.	Price $	Advertising $	Promotion $	Sales Units	Profits $
1	20	2,000,000	1,000,000	1,250,000	22,000,000
2	20	2,000,000	4,000,000	3,000,000	56,000,000
3	20	4,000,000	1,000,000	2,000,000	37,000,000
4	25	2,000,000	1,000,000	1,000,000	22,000,000
5	25	4,000,000	4,000,000	3,000,000	67,000,000

In this case marketing mix number 5 would yield the best profit because:

Profit = Total revenue - Total cost

Profit = (Price × quantity) - Total variable cost - Fixed cost - Marketing cost.

Applying this to marketing mix No. 5:

Profit = ($25 × 3,000,000) - ($12 × 3,000,000) - (12 × 3,000,000) - ($ 1 × 3,000,000) - (4,000,000 + 4,000,000 + 2,500,000)

= $25,000,000

Of course, this calculation would only be as accurate as the estimates of the responsiveness of the market to changes in price, advertising and promotion.

Marketing profitability analysis can also be applied to historical data to determine whether a territory, product or channel should be added to, altered, reduced or eliminated. This involves identifying or assigning the functional expenses to marketing activities and preparing a profit and loss statement for each marketing entity. For example, suppose that Quesi Ltd. sold its tree cutters through different outlets: its agricultural equipment suppliers, garden supply and retail stores. Further assume that management wanted to assess the profitability of each of the outlets and take any necessary corrective action. The methodology would be as follows:

The first step would be to analyse the profit and loss statement:

Table 5.7 A profit and loss statement for Quesi equipment

Sales		$ 120,000
Cost of goods sold		78,000
Gross margin		42,000
Expenses		
Salaries	$18,600	
Rent	6,000	
Supplies	7,000	31,600
Net profit		10,400

The next step would be to apportion functional expenses to each major cost category of the business as illustrated in table 5.8.

Table 5.8 Apportioning functional expenses

	Total	Selling	Advertising	Packing and delivery	Billing and collecting
Salaries	18,600	10,200	2,400	2,800	3,200
Rent	6,000	-	800	4,000	1,200
Supplies	14,000	800	3,000	2,800	400

31,600	11,000	6,200	9,600	4,800

Next the manger would assign the functional expenses to the various marketing entities in order to develop a profit and loss account for each one. This is illustrated in the table which follows.

Table 5.9 Assigning functional expenses to marketing entities

	Selling	Advertising	Packing and delivery	Billing and collecting
Channel type	No. of sales calls in period	No. of advertisements	No. of orders placed in period	No. of orders placed in period
Street traders	400	100	100	100
Small shops	130	40	42	42
Supermarkets	20	60	18	18
Total calls	550	200	160	160
Functional expense/No. of units	$11,000/550	$6200/200	$9600/160	$4800 /60
	$20	$31	$60	$30

Table 5.10 Profit and loss statement for each marketing entity

	Agents ($)	Garden supply ($)	Department stores ($)	All retail outlets ($)
Sales	60,000	20,000	40,000	120,000
Cost of goods sold	39,000	13,000	26,000	78,000
Gross margin	21,000	7,000	14,000	42,000
Expenses				
Selling ($20/call)	8,000	2,600	400	11,000
Advertising ($31/ad)	3,100	1,240	1,860	6,200
Packing & Del. ($60/order)	6,000	2,520	1,080	9,600
Billing ($30/order)	3,000	1,260	540	4,800
Total expenses	20,100	7,620	3,880	31,600
Net profit	900	(620)	10,120	10,400

In this case selling through the garden supply stores is causing a loss and therefore management may decide to cut the level of service to this type of outlet, increase sales, cut down on expenses or alter the marketing mix.

Lorenz curves

The 80/20 principle enjoys wide acceptance and applicability in marketing. Typically, this principle manifests itself in statements like, "Eighty percent of an organisation's profits arise from only twenty percent of the products within the product range". Or:-

- 20% of stock items account for 80% of inventory costs, or
- 20% of customers provide 80% of sales volumes, revenues and/or profits, or
- 20% of the distribution outlets served provide 80% of consumer sales

Table 5.11 Analysing the contribution of products to sales volumes

Product	Unit Sales (000's tonnes)	Cumulative Sales (000's tonnes)	Cumulative Percent Of All Sales
White Maize	400	400	40.0
Wheat	200	600	60.0
Rice (paddy)	150	750	75.0
Sorghum	100	850	85.0
Sunflower seed	100	950	95.0
Groundnuts	20	970	97.0
Yellow maize	15	985	98.5
Coffee beans	10	995	99.5
Rice (upland)	3	998	99.8
Rapoko	2	1000	100.0

Where the 80/20 principle is seen to apply, marketing management focuses its control on the "twenty percent". Thus, for instance, only relatively senior personnel are authorised to place purchase orders for those stock items which fall into the "20% category" since control over the amount invested in these items has a significant effect upon the cash flow and profitability of the organisation. In the same way, marketing management is likely to concentrate resources

on the customer groups and/or middlemen who generate the greater proportion of the organisation's turnover and/or profits.

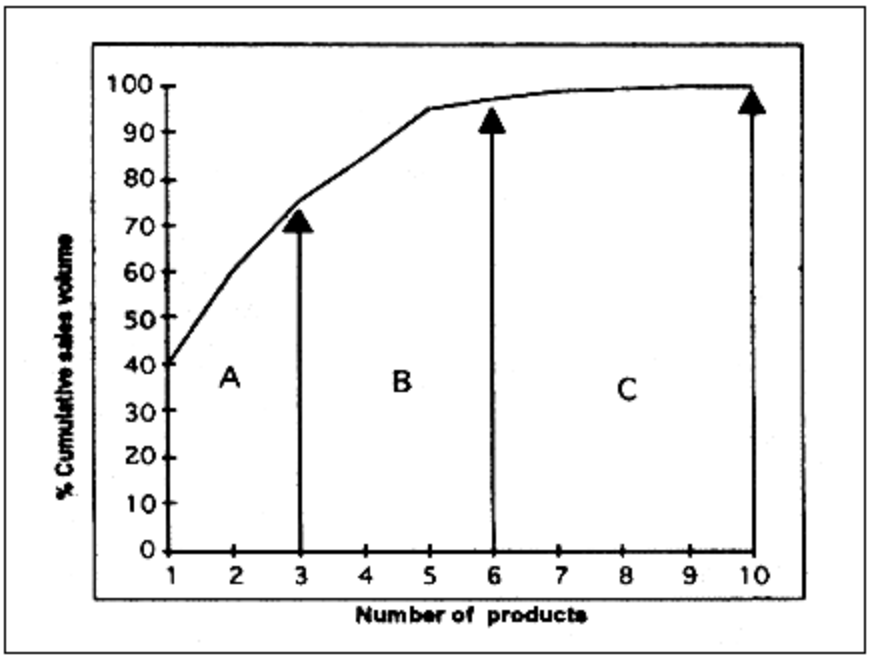
Lorenz curves are a mathematical-graphical method of analysing the degree of concentration of sales, revenues, profits and/or costs of a business. The hypothetical data in table 5.11 show that just two products, maize and wheat, account for the great majority of the organisation's sales volume. More precisely, 20 percent of the items in the product range (i.e. 2 out of 10) account for 80 percent of total unit sales. Given the importance of these commodities the organisation will pay particular attention to procuring and promoting wheat and maize. If sales of these products decline, even to a small extent, then this would have a substantial effect on the organisation's trading position.

The degree of concentration in the organisation's business becomes even more apparent when the table of data is displayed graphically as a Lorenz curve as in figure 4.15. Of course, it rarely happens that the concentration of sales conforms precisely to the 80/20 ratio but it is surprising just how widely applicable the pattern of concentration is to business phenomena. Businesses find that a small proportion of stock items account for the greater part of the value of their inventory; that most of their profit arises from a relative small number of products within the total product range and that a minority of customers/distributors generates the majority of sales and/or profits.

The Lorenz curve allows the categorisation of the products marketed according to their respective contributions to sales. In this example there appear to be three categories which have been labelled A, B and C. Category a items - which are only 30 percent of the product range - have to be managed very carefully since they add up to 75 percent of sales volume and, therefore, the performance of these items is critical to the organisation. Category B products add a further 20 percent to total sales volume and although having less impact on the overall performance of the enterprise, nonetheless should be regularly monitored. If categories A and B are combined then it is found that 50 percent of the product range is responsible for 95 percent of volume sales. Given, however, that category B products (i.e. 50 percent of the product range) collectively yield only 5 percent of unit sales and their performance in any

season will have only a modest effect upon the organisation's overall sales results these do not merit too much of management's time and effort.

Figure 5.15 A Lorenz curve



An obvious response is to delete products in category C from the company portfolio on the grounds that these items contribute relatively little to the company's sales volumes. The pattern of sales volume concentration might also have implications for the structure of marketing management within the enterprise. Each of the products in category A might justify the assignment of an individual product or brand manager whereas items in categories B and C could be managed collectively as a product range and possibly by less senior personnel. Other marketing decisions which could be influenced by the degree of sales volume concentration revealed by the Lorenz curve include:

- How the promotional budget should be allocated
- Where sales personnel should focus their time
- Determination of inventory and reorder levels for products
- Production scheduling
- Identification of priorities for the cutting and/or control of marketing costs.

When basing decisions on the analysis which a Lorenz curve provides, there are a number of *caveats*. For instance, when contemplating the deletion of products from the product line, the decision to take this action should only be made after consideration has been given to the reasons for the apparently poor performance of the products in category C. It may be possible to improve the sales of these items by giving them greater support or through more imaginative marketing. Even if this is not the case and the potential of these products is limited, their retention may be justified because they complement more profitable items and customers expect the manufacturer, producer or supplier to offer a complete product line.

It also has to be remembered that a Lorenz curve represents a 'snapshot' of the situation at a particular point in time. No account is taken of the future position of these products. That is, the top performing products of today may, in the longer term, fall into decline whilst other products achieving only moderate sales could be the 'star performers' of the future. The Lorenz curve may show a spurious concentration due to the capturing of data at a single point in time when, in reality, there are random fluctuations in period-to-period buying.

Several perspectives should be taken when conducting an analysis of this type. It may be the case that a certain product, or group of products, is assigned to a low category when the criterion is 'sales volume' but would fall into a higher category when the criterion used is perhaps 'profit contribution'.

Efficiency Control

If the profitability analysis reveals that the company is earning poor profits in connection with certain products, territories or markets, the question is whether there are more efficient ways to manage the sales force, advertising, sales promotion and distribution in connection with these poor performing entities.

Sales force efficiency

Hartley provides the following key indicators of sales force efficiency in their territory:

- average number of calls per salesperson per day
- average sales call time per contact
- average revenue per sales call
- average cost per sales call

- percentage of orders per 100 sales calls
- number of new customers per period
- number of lost customers per period
- sales force cost as a percentage of total sales.

Advertising efficiency

Difficult as it is, the marketer should try and track the following:

- advertising cost per thousand buyers reached overall, for each media category, and each media vehicle
- percentage of audience who noted, saw/associated, and read most for each media vehicle
- consumer opinions on the advertisement content and effectiveness before/after measures of attitude towards the product
- number of inquiries stimulated by the advertisement
- cost per inquiry.

Sales promotion efficiency

Track should be kept of each sales promotion campaign and its impact on sales:

- percentage of sales sold on the offer
- display cost per $ sales
- percentage of coupons redeemed
- number of inquiries resulting from the demonstration.

Distribution efficiency

This will enable the marketer to search for economies in distribution. Measures are mainly taken through statistical/operational research methods:

- inventory control
- warehouse location
- Transportation methods - optimum routing, scheduling, loading, unloading.

Monitoring and control enables marketing management to address two vital questions: are resources being used effectively and is there a better way of using them? In answering these questions much waste can be removed from marketing activities and functions.

Summary

Revision questions

1. Name as many different types of marketing plan as you can.
2. What is an SBU?
3. What is the essential distinction between 'strengths and weaknesses', on the one hand, and 'opportunities and threats', on the other?
4. Explain the term 'generic strategies'.
5. Briefly outline the main market coverage strategies.
6. What are the 4 categories of organisational objectives summarised by Greenley?
7. What are the 2 types of marketing planning?
8. What is the 80/20 principle?
9. Outline the main headings likely to be found in a marketing plan.

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CHAPTER 6: AGRICULTURAL COMMODITIES EXCHANGE

Content

6.0 CHAPTER OBJECTIVE

By the end of this chapter students will be able to:

- Define commodity exchange
- Identify the problems commodity exchange can address

6.1 INTRODUCTION

Agricultural commodity exchanges are typically associated with efficient and sophisticated markets, providing valuable benefits such as price discovery, publicly available market information, contracts for minimizing price risks, low transaction costs of exchange, and insurance against potential opportunistic behavior of trading partners. But these benefits are far from being achieved in any African country except for South Africa and Ethiopia in some commodities.

6.2 DEFINITION OF COMMODITIES EXCHANGE

What is commodity exchange (CE)?

A commodities exchange is an entity, usually an incorporated non-profit association, which determines and enforces rules and procedures for the trading of commodities and related investments, such as commodity futures. Commodities exchange also refers to the physical center where trading takes place.

A commodity exchange is an organized marketplace where buyers and sellers come together to trade commodity related contracts following rules set by the exchange.

The third definition tells us that;

1. For an exchange to occur there should be at least two parties
2. The buyer and sellers exchange contract but not the actual product
3. The two parties should have common language
4. The two parties should have something valuable to each other
5. The two parties should have mutually agreed currency
6. Some rules should followed by both parties unless punishment
    a) Quantity Demand and Supply
    b) Price
    c) Time of delivery
    d) Place of delivery
    e) Quality
    f) The commodity category

Modern commodity markets began with the trading of agricultural products, such as corn, cattle, wheat and pigs in the 19th century. Modern commodity markets trade many types of investment vehicles, and are often utilized by various investors from commodity producers to investment speculators.

For example, a corn producer could purchase corn futures on a commodity exchange to lock in a price for a sale of a specified amount of corn at a future date, while at the same time a speculator could buy and sell corn futures with the hope of profiting from future changes in corn prices.

6.3 WHAT PROBLEMS CAN A COMMODITY EXCHANGE ADDRESS?

Commodity exchanges can reduce the costs and risks of transacting. They can provide valuable public information such as prices and volumes of trade. In many indirect ways, they can encourage the financial sector to invest in agricultural value chain development, improve farmers' access to markets, reduce marketing margins, and encourage agricultural productivity growth.

6.3.1 High Production and Marketing Costs

Commodity exchanges are unlikely to bring about major reductions in the costs of inputs or improvements in the availability of new farm technologies. However, well-functioning CEs could reduce the transaction costs and risks of exchange and thereby shrink the wedge between the prices received by farmers and the prices paid by consumers. If the commodity value chain is competitive, then the reduction in marketing costs at the various stages of the system can provide important benefits to both farmers and consumers.

Commodity exchange leads to the high production and lower transaction costs by maintaining:

a) Organized and planned effort, and
b) Using resources in common- vehicles, inputs, show rooms/warehouse/storage

6.3.2 Constrained Access to Credit

CEs rarely provide credit directly to farmers. CEs can support the development of warehouse receipting systems, which can increase the supply of credit finance to traders. Indirectly then, by increasing the supply of credit to assembly traders, farmers operating in a competitive

marketing environment may receive more seasonal credit from traders. These connections between CEs and farmer access to credit are indirect and contingent on the behavior of market intermediaries, yet potentially quite important.

A warehouse receipt system (WRS) enables farmers to deposit storable goods (usually grains or coffee) in exchange for a warehouse receipt (WR). A warehouse receipt (WR) is a document issued by warehouse operators as evidence that specified commodities of stated quantity and quality have been deposited at a particular location.

Commodity exchanges (CEs) facilitate warehouse receipting systems can increase the supply of credit finance to traders b/c they have license.

6.3.3 Limited Availability of New Farm Technology

CEs (commodity exchanges) cannot directly support sustainable agricultural intensification or new technology generation. In cases where a virtuous cycle of investment in new technology, productivity gains and wealth creation has been achieved, then CEs can indirectly but potentially substantially strengthen this kind of virtuous cycle. The main point is CEs cannot encourage farm technology investment and productivity growth directly, but can indirectly promote such processes in a favorable enabling environment where there are already positive incentives for investing in the agricultural system.

6.3.4 Price Volatility

With that said, commodity exchanges can provide risk management tools that allow marketing actors to hedge their positions in future crops. Mature commodity exchanges, which price and sell risks through futures contracts for example, can also make the financing of farm inputs and fixed agricultural assets less risky for financial institutions. Commodity exchange management entities that understand the risk management requirements of traders, farmers and financial institutions will be in a relatively good position to develop the services and incentives for these actors to want to trade on the exchange.

Well-functioning commodity exchanges can therefore support the use of forward contracting, futures trading, and other activities that allow market actors to mitigate the consequences of unpredictable market price movements but not the magnitude of price volatility.

6.3.5 Farmers' Market Access Conditions

Commodities exchanges (CEs) cannot directly improve farmers' market access conditions or the degree of competition in assembly markets. However, if a commodity exchange can be successfully introduced, it is likely to attract new firms into the market which may contribute to greater competition among traders at various stages of the value chain and improve farmers' market access conditions. As new entrants enter food markets they compete away the rents that dominant traders might have enjoyed earlier. This process of new market entry and enhanced competition for farm product can be accelerated when commodity exchanges (CEs) provide services that previously were available only to dominant traders. An important example of such a service is price discovery. If the commodity exchange publicly publishes daily strike prices and trade volumes agreed through the exchange, such information will reduce the information advantages of dominant firms, substantially level the playing field with regard to information, and promote new entry by other firms that would ultimately improve farmers' access to markets.

6.3.6 Ancillary Market Institutions and Services Required of a Commodity Exchange

There are two sets of services essential for the success of a commodity exchange (CE) that can be either out-sourced or in-sourced. These include settlement services and collateral management services.

1. **Settlement services**

Settlement services are most conveniently delivered by commercial banks. They involve transferring funds from the bank account of buyers to the account of sellers upon the completion of a transaction and the notification of trading partners that the funds have been distributed in compliance with standing orders from the exchange. An efficient and reliable inter-bank transfer system is a prerequisite for an exchange to use third-party settlement services. Inter-bank funds transfer systems do not exist in many parts of Africa.

2. **Collateral management systems**

Collateral management systems are important for establishing trust among market participants that the commodity exchange can honor its contracts. Collateral managers take physical control of the farm commodity assets being traded, certify their quality and assure potential buyers that assets under their control comply fully with quality standards adopted by the

exchange. They transfer ownership rights from sellers to buyers upon the execution of a trade and transfer of funds. Importantly as well, they record details of the asset transfer relationship in the exchange's management system, they monitor customer exposure and collateral received or posted on the agreed market-to-market, to call for margin as required, to transfer collateral to its counterparty once a valid call has been made, to check collateral to be received for the eligibility, to reuse collateral in accordance with policy guidelines, to deal with disagreements and disputes over exposure calculations and collateral valuations, and to reconcile the portfolio of transactions.

Some of the hallmarks/features of a well-functioning spot market include:

(i) trading according to grades and standards,

(ii) specified delivery points with sufficient storage capacity to handle marketed volumes;

(iii) warehouse certification and collateral management services,

(iv) bank settlement services,

(v) a clearly defined set of exchange rules that form the reference for all transactions; and

(vi) Established procedures for resolving disputes.

What is spot market?

A spot market is one in which commodities are traded for immediate delivery.

NEW TARDING SYSTEM

CHAPETR 7: MANAGING AGRICULTURAL MARKETING RISKS USING FUTURES MARKETS

Content

7.1.3 minimization of risk

7.2 risk management strategies in agricultural marketing: speculation & hedging

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7.2.2 hedging

7.2.3 futures market/trading

7.2.3.1 meaning of futures markets/trading

7.2.3.2 purpose of futures markets

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7.2.4.1 meaning of contract farming

7.2.4.2 types of contract farming

7.2.4.3 offsetting contracts

7.2.5 mechanics of a futures market

7.2.6 examples of futures market participation

7.2.7 market risks-price variability

7.2.8 market risks-placed out of the market

7.2.9 hedging risk using futures market

7.2.9.1 local Vs. futures markets

7.2.9.2 hedging local market price risk

7.2.10 basis

7.3 futures market practice

7.3.1 speculator approach

7.3.2 hedger approach

7.4 options

7.0 CHAPTER OBJECTIVES

Upon completion of this chapter students will be able to:

- Identify agricultural marketing risks
- Explain the general risk management techniques
- Discuss price risk management strategies for agricultural products
- Introduced with the concept and application of contract farming
- Introduced with the concept and application of futures market

7.1 AGRICULTURAL MARKETING RISKS

7.1.1 Meaning of Risk

Hardy has defined risk as uncertainty about cost, loss or damage. Risk is inherent in all marketing transactions. There is the risk of the destruction of the produce by fire, rodents or other elements, quality deterioration, price fall, change in tastes, habits or fashion, and the risk of placing the commodity in the wrong hands or area.

There is a time lag between the production and consumption of farm products. The longer the time lags, the greater will be the risk. The risk associated with marketing cannot be dispensed with, for this risk contributes to profit. Someone has to bear the risk in marketing process. But most of the risk is taken by market middlemen, as they have the capacity to bear it.

Whenever risks are greater and varied, the margin taken by the risk-bearers is higher, and vice versa. One who holds the commodity in the process is the bearer of the risk, because of which he may be better off or worse off.

Activity 1: **take a moment and think about the possible risks that could be encountered in marketing of agricultural products.**

7.1.2 Types of risk in agricultural marketing

The risks associated with the marketing process are of three basic types:

(i) ***Physical Risk***

This includes a loss in the quantity and quality of the product during the marketing process. It may be due to fire, flood, earthquake, rodents, insects, pests, fungus, excessive moisture or temperature, careless handling and unscientific storage, improper package, looting or arson. These together account for a large part of the loss of the product at the individual as well as at the macro level. Such losses are a loss to society, too, and must be averted to the extent possible.

(ii) ***Price Risk***

The prices of agricultural products fluctuate not only from year to year, but during the year from month to month, day to day and even on the same day. The changes in prices may be upward or downward. Price variation cannot be ruled out, for the factors affecting the demand for, and the supply of, agricultural products are continually changing. A price fall may cause a loss to the trader or farmer who stocks the produce. Sometimes, the risks are so great that they may result in a total failure of the business, and the person who owns it may become bankrupt.

(iii)*Institutional Risks*

These risks include the risks arising out of a change in the government's policy, in tariffs and tax laws, in the movement restrictions, statutory price controls and the imposition of levies.

7.1.3 Minimization of Risk

The agencies engaged in marketing activities worry about the risk associated at every stage; and they continually try to minimize the effects of these risks. A risk cannot be eliminated because it also carries profit. The agencies which do not take risks hardly earn profit. The risk management by the adoption of some of the measures listed below may minimize the risks:

1. Reduction in Physical Loss

The physical loss of a product (quantity and quality both) may be reduced by the adoption of the following measures:

a. Use of fire-proof materials in the storage structures to prevent accidents due to fire;
b. Use of improved storage structures and giving necessary pre-storage treatment to the product to prevent losses in quality and quantity arising out of excessive moisture, temperature, attacks by insects and pests, fungus and rodents;
c. Use of better and quicker transportation methods and proper handling during transit; and
d. Use of proper packaging material.

2. Transfer of Risks to Insurance Companies

The burden of physical risk may be minimized by shifting it to insurance companies. There are specialized professional agencies to bear such risks. They collect some premium and provide full compensation to the party in case of loss due to the reasons for which the products are insured. In this way, the company insures a number of farmers against losses.

3. Minimization of Price Risk

The risk associated with the variations in the prices may be minimized by the adoption of the following measures:

a. Fixation of minimum and maximum prices of commodities by the government and allowing movements in prices only within the specified range:
b. Marketing arrangements for the dissemination of accurate and scientific price information to all sections of society over space and time. This should include information on market demand, acreage under a particular crop, estimates of market supply and of the import and export of commodities;
c. An effective system of advertising may reduce price uncertainty and create a favorable atmosphere for commodity;
d. Operation of speculation and hedging. The price risk associated with the commodities for which the facility of forward trading is available may be transferred to professional speculators through the operation of hedging. A detailed exposition of speculation and hedging follows.

7.2 Risk Management Strategies in Agricultural Marketing: Speculation and Hedging

Speculation and hedging are important ways of minimizing price risk in business. In the former, risk is taken by the person specializing in the business without much consideration of business trends, while in the second, a calculated risk is taken.

7.2.1 Speculation

The fundamental idea underlying speculation is the purchase or sale of a commodity at the present price with the object of sale or purchase at some future date at a favourable price. The speculator is normally concerned with profit-making from price movements. He purchases when prices are low. He is, therefore, not a normal or regular trader. The difference in the prices prevailing at two times constitutes his profit. Speculator may lose in this process. The essentials of a speculator are:

- He enters the trade at current prices;
- The transactions of speculators are completed on some future date;
- The speculators enter the trade with the sole object of making profit from price movements. Sometimes, they indulge in hoarding as well;

- Except in a few cases, the physical delivery of produce is neither taken nor given. Only the difference in the prices is paid or taken; and
- Speculators are not regular buyers and sellers in the market. They do not conduct any regular business apart from speculative business.

Based on the legalities involved, speculation is of two types:

(i) Speculation Proper

Speculation proper refers to speculation on the part of a person who makes it his profession. Such professional speculators devote their whole time and energy to the collection of information about the future course of price movements. The decisions of the speculator are not hunch decisions. These are intelligent forecasts based on predicted trends. This type of speculation is beneficial for the economy as a whole and is usually accepted by the society.

(ii) Illegitimate Speculation

This is a gamble in business. The speculators adopt such manipulative practices as create conditions of artificial scarcity in the market and lead to a rise in prices. The main aim of the speculator is to earn a big profit. This type of speculation is not based on any rationale, though it influences the prices of products. Such speculation is prohibited by the government in the best interest in the economy.

7.2.2 Hedging

7.2.2.1 Meaning of hedging

Hedging is a trading technique of transferring the price risk. It protects traders from extreme crash in prices. Hedging has been defined as follows:

"Hedging is executing opposite sales or purchases in the futures market to offset the purchases or sales of physical products made in the cash market".

- *Shepherd*

"Hedging is the practice of buying or selling futures to offset an equal and opposite position in the cash market and thus avoid the risk of uncertain changes in prices".

- *Hoffman*:

Hedging refers to the purchase or sale of a commodity in a futures market accompanied by a sale or a purchase in the cash market. In this approach, each sale is entered into with an equivalent, purchase of the commodity. It is assumed that prices in the two markets move exactly parallel, and that the losses arising in one market are offset by profit in another market. Hedging is based on two assumptions:

a. The future and cash commodity prices move up and down together, *i.e.*, the basis of price changes remains unchanged.
b. The mechanics of hedging includes the making of simultaneous transactions, but of opposite nature, in the futures and cash markets.

7.2.3 **Futures Trading/market**

7.2.3.1 Meaning of Futures Trading/market

Futures' trading is a device for protection against the price fluctuations which normally arise in the course of the marketing of commodities. Stockists, processors or manufacturers utilize the futures contracts to transfer the price risk faced by them. Futures markets for commodities have been an important method for agricultural producers to hedge revenue risk, which can be very high. Not only do agricultural producers face the fluctuations of demands for their goods, but they also face significant risks of events that can substantially affect their output. Both of these can affect commodity prices. By allowing producers to lock in" a price far in advance of actually selling a commodity, futures markets can be used to remove the risk of fluctuating and unknown sale prices.

Futures trading include both hedging and speculation. But since hedging is its *raison deter*, it is also known as hedge-trading. Futures markets are, therefore, known as "hedge" markets. Widely divergent views exist on the effects of futures trading. A few are convinced that commodity futures trading tend to stabilize prices and reduce price variations. Others not only disagree with this view but vigorously allege that, more often than not, futures trading aggravate the price trends and increase both the magnitude and frequency of price variations. A third group denies that futures trading have any influence, either favourable or adverse, on commodity prices.

7.2.3.2 Purpose of Futures Markets/trading

Futures markets are price discovery and risk management institutions. In futures markets, the competing expectations of traders interact to "discover" prices. In so doing, they reflect a broad range of information that exists on upcoming market conditions. Futures markets are actually designed as vehicles for establishing future prices and managing risk so you can avoid gambling if you want.

For example, a wheat producer who plants a crop is, in effect, betting that the price of wheat won't drop so low that he would have been better not to have planted the crop at all. This bet is inherent to the farming business, but the farmer may prefer not to make it. The farmer can hedge this bet by selling a wheat *futures contract*.

Why did futures markets come about?

- Transportation distances increased-higher price volatility followed.
- No central information source, such as Ethiopian commodity exchange (ECX), Banks and media
- No standardized trading rules and measures.
    - ✓ absence of Commercial law, and
    - ✓ absence of Units of measurement

Basically futures markets are used to create and trade futures contracts between a buyer and seller of a commodity.

Activity 2: it's believed that contract farming is one of the risk aversion strategies in the marketing of farm products. So, how it could work?

7.2.4 Contract Farming/Contract Marketing (Farmer – Processor Linkages)

7.2.4.1 Meaning Contract Farming

Contract farming involves agricultural production being carried out on the basis of an agreement between the buyer and farm producers. Sometimes it involves the buyer specifying the quality required and the price, with the farmer agreeing to deliver at a future date. More commonly, however, contracts outline conditions for the production of farm products and for their delivery to the buyer's premises. The farmer undertakes to supply agreed quantities of a crop or livestock product, based on the quality standards and delivery requirements of the purchaser. In return, the buyer, usually a company, agrees to buy the product, often at a price

that is established in advance. The company often also agrees to support the farmer through, e.g., supplying inputs, assisting with land preparation, providing production advice and transporting produce to its premises. The term "outgrower scheme" is sometimes used synonymously with contract farming, most commonly in Eastern and Southern Africa. Contract farming can be used for many agricultural products, although in developing countries it is less common for staple crops such as rice and maize.

Contract farming or marketing essentially is an arrangement between the farmer producers and the agri-business firms to produce certain pre-agreed quantity and quality of the produce at a particular price and time. It can only be a pure procurement transaction or can extend to the supply of inputs or even beyond.

Contract farming is emerging as an important mode of procurement of raw materials by agribusiness firms in India due to the development in the field of agricultural marketing, changes in food habits and in agricultural technology in the new economic environment. This is an important initiative for reducing transaction costs by establishing farmer-processor linkages in addition to the already existing methods of linking the farmers to the consumers.

The distinction between 'sales' and 'contract to sell' needs to be understood clearly. In the case of sale, the title or ownership of goods is transferred at once whereas in the 'contract to sell', the goods are transferred at a later date. A contract to sell is not in the true sense of the word a sale, rather it is merely an arrangement to sell. A contract is an agreement but an agreement is not necessarily a contract.

In contract farming, companies or organizations engaged in processing and marketing of agricultural products are entering into contracts with the farmers. They provide inputs to the farmers and buy back the product at a rate specified in advance. Following type of inputs and services are normally provided by the company to the farmers:

- Seeds of the variety they need for processing/marketing
- Guide lines to grow the crops
- Pesticides which do not result in residual toxicity
- Extension services
- Fertilizers/harmones required for the crop

- Other material if not locally available.

The contract may be entered into by parties anytime from the start of the sowing or planting to the harvesting, processing, packaging and marketing stage of the crop. Normally, the contract is entered before the start of the sowing or planting because the buyer can then stipulate the conditions of cultivation, use of the seed variety needed by them, use of pesticides and insecticides, and requirement of on farm grading, sorting, packaging and processing. The buyer of the product generally keeps the right to monitor the crop at every stage of its growth. Following documents are obtained/given to selected farmers by the companies:

- Application/Registration form
- Contract farming agreement
- Issue of pass book
- Issue of ID Card

7.2.4.2 Benefits of contract farming

Contract farming has been used for agricultural production for decades but its popularity appears to have been increasing in recent years. The use of contracts has become attractive to many farmers because the arrangement can offer both an assured market and access to production support. Contract farming is also of interest to buyers, who seek supplies of products for sale further along the value chain or for processing. Processors constitute the main users of contracts, as the guaranteed supply enables them to maximise utilization of their processing capacity. Contracts with farmers can also reduce risk from disease or weather and facilitate certification, which is being increasingly demanded by advanced markets. There are also potential benefits for national economies as contract farming leads to economies of scale, which, as Collier and Dercon argue, are "bound to provide for a more dynamic agricultural sector.

Although contract farming must first and foremost be considered as a commercial proposition, it has also come to be viewed as an effective approach to help solve many of the market access and input supply problems faced by small farmers. A guide published by GIZ in 2013 seeks to advise on ways in which contract farming can be developed to maximise such benefits for smallholders in developing countries. Effective linkages between companies and thousands of farmers often require the involvement of formal farmer associations or

cooperatives or, at least, informal farmer groups. However, empirical evidence of the best way of achieving this is not yet available.

7.2.4.3 **The types of contract farming**

1. Forward Contracts

A forward contract is an agreement between two parties (such as a wheat farmer and a cereal manufacturer) in which the seller (the farmer) agrees to deliver to the buyer (cereal manufacturer) a specified quantity and quality of wheat at a specified future date at an agreed-upon price. Forward contract can also be expressed as a market in which the purchase and sale of a commodity takes place at time „t'' but the exchange of the commodity takes place on some specified date in future i.e. t+1. Sometimes even on the specified date in the future, (t+1) there may not be any exchange of the commodity. Instead, the differences in the purchase and sale price are paid or taken. It is a privately negotiated contract that is not conducted in an organized marketplace or exchange.

Both parties to a forward contract expect to make or receive delivery of the commodity on the agreed-upon date. It is difficult to get out of a forward contract unless the other party agrees.

All forward contracts specify quantity, quality and delivery periods. If any of these conditions are not met, the farmer will usually have to financially compensate the buyer. It is essential you understand your legal obligations before entering into a forward contract in case you cannot meet the conditions of the contract.

2. Futures contract

What is Futures contract?

A futures contract is a forward contract traded on an organized exchange (and not over-the-counter), standardized in terms of quantity, quality, and delivery time and location. **Futures contract** are a statement signifying a promise between a seller and a buyer (two sides are required to trade).

The components of futures contract- A contract specify the following:

- An obligation of the seller to deliver a commodity to a specified point-of-delivery at a future time.

- An obligation of the buyer to pay a fixed price and pick up the commodity at the pre-specified point-of-delivery.
- An expiration date (time of delivery).
- Other standardized measures and dates-quantity and quality, etc measures of the commodities

Commodity futures markets-contract price information

Where do you get contract price information?

1. Exchange organization- in Ethiopia case ECX through price notice board and web page
2. Banks-as a sponsorship to information displayers
3. Mass-medias- business news

What does futures contract provide?

Futures contract provide a very structured and standardized method for buyers and sellers to determine the terms of an exchange. In other word, futures contract provides formality of an exchange. Each futures contract is exactly the same except for the price of exchange established by the buyer and seller.

The following describe the standardizations that exist in each futures contract:

- **quantity/Measures**
  - ✓ 5,000 quintal, wheat, corn, soybeans, etc.
  - ✓ 40,000 live cattle.
  - ✓ 50,000 k.g, taff.
  - ✓ 20,000 tones, beef
- **Quality**
  - ✓ Magna taff
  - ✓ Yehumora selit
  - ✓ Harare coffee
  - ✓ Yirga chefie coffee
  - ✓ Bahirdar's chat
- **Delivery location**
- **Contract end date**
  - ✓ 15th day in the contract month.

- ✓ Last day of the contract month (live cattle)
- ✓ Last Thursday of the contract month (wheat)

- **Pricing units**
  - ✓ Cents per gram (tick: 0.25 cents)
  - ✓ ETB 200 per k.g, coffee
  - ✓ ETB 1500 per quintal, taff

Purchasing a Futures Contract

Every contract requires **two parties** - buyer and seller.

- **Seller**: a party that promises to deliver the designated quantity of a commodity. In exchange, they will receive a fixed price.

  Who is seller?

Seller is a party who promises to deliver Pre-determined quantity of the commodity, at Pre-determined fixed price, at the pre-determined point-of-delivery In the future time.

Selling a contract is known as taking a **short position**. If delivery date comes and the seller can't deliver, they are short of the commodity.

Buyer: a party that promises to take delivery of a specified quantity of commodity.

In exchange, they will pay a fixed price.

-Buying a contract is known as taking a **long position.**

If delivery date comes and the buyer has a commodity they may not want (or too much of it), they are long in the commodity.

7.2.4.3 Offsetting Contracts

Typically, only relatively few contracts have sellers and buyers who can actually deliver or take on a commodity. Instead of delivering or taking on a commodity, a party can offset a short or long position by purchasing an opposite contract.

- **Short position ⟶offset by buying a contract (long position).**
- **Long position ⟶offset by selling a contract (short position).**

By offsetting a futures contract with another opposite-position futures contract, an individual is released of the responsibility to either buy or sell the physical commodity. The only obligation that the individual is required to meet is any difference the price of the two contracts. For example, if one contract was bought at ETB 5.00/k.g and another was sold at ETB 4.50/k.g, the individual would be responsible to pay ETB 0.50/k.g (more on this later).

7.2.5 Mechanics of a Futures Market

The operations of futures market can be carried out either in open outcry or electronic exchange. The futures market operation approaches are presented here below.

- **Open outcry.**

The buyer and seller come together in one place, then the short shout his/her limit price in the pit, the long who first accepts the limit gets priority to take long position. Trading pit is a place where trade takes place at the commodity exchange.

- **Electronic exchange**

It is a trading system which is directly connected with the trading server. The members (buyer and seller) are recognized and their computers connected with the commodity exchange's server that displays trading information.

Disadvantage - impossible to observe partners' emotion.

The day-to-day operations of a futures market are described below:

1. Times vary, but usually markets are open between 9:00 a.m. and 2:00 p.m.
2. Buying and selling occurs simultaneously.
   - But: Each contract must have exactly one buyer and one seller.
3. Two types of participants:
   a) Exchange members.
   b) Nonmembers.

Nonmembers can participate in the market either through members or through a broker.

4. Clearinghouse overlooks positions and obligations.
   - Notifies buyers and sellers of obligations.
   - Matches open positions (buyers with sellers).…….open interest

Futures contracts are a promise to pay a fixed price at some future time. But, buying/selling a contract is not free. Any time a transaction takes place, a margin requirement is necessary. A margin requirement is an amount of money required as a payment in order to purchase or sell a contract.

- Typically, 5% - 20% of a contract's value.
- Margin payments differ for speculators and those that actually have the commodity.
- Along with assurance, provides coverage for potential losses if price fluctuations occur.
- At daily market closing, all participants are marked-to-market (more on this later).

7.2.6 Example of Futures Market Participation

Consider the following scenario:

- Current date (t_0): November 1
- July wheat futures contract is trading @ $5.50/kg
- You believe that the actual price in July will be $4.00/kg.

7.2.6.1 Deciding what position to take

Knowing the information that you know, which position should you take?

Short - sell a contract

Long - buy a contract

Properties of Market Positions:

- **A short position benefits when the price drops:**

Suppose you take a short position by selling a contract at $5.50/kg. This implies that at the delivery date, you have agreed to sell 5,000 kg of a commodity at $5.50/kg. If in July the price of the commodity drops to $4.00/kg, you can buy that commodity at $4.00/kg and sell it at $5.50/kg because that is the price at which you established the original futures contract. Thus, a drop in price benefits you if you have a short position.

Conversely, if you took a short position and the price rises, then you are worse off. Because you now have to buy a commodity at a higher price than you will receive by selling at the established contract price, you lose money.

❖ **A long position benefits when the price rises:**

Suppose you take a long position by buying a contract at $5.00/kg. This implies that at the delivery date, you have agreed to buy 5,000 kg of a commodity at $5.00/kg. If in July the price of the commodity rises to $6.00/kg, you can buy the commodity at $5.00/kg using your futures contract, and then sell at $6.00/kg. Thus, a rise in price benefits you if you have a long position.

Conversely, if you took a long position and the price drops, then you are worse off. Because you now have to sell a commodity at a lower price than at which you have agreed to purchase the commodity, you lose money.

So, the best strategy is to take a short position because you believe that seven months (July) the price per kilo gram will be lower than it is today. Thus, you are counting on the fact that you will be able to buy the commodity at $4.00/kg in July, and then sell at $5.50/kg using your futures contract.

7.2.6.2 Entering the market

Now that you have decided which contract will be most beneficial, you need to enter the futures market. Suppose you want to sell ten (10) July contracts (i.e., agree to deliver 50,000 kg in July). To do so, you would take the following steps:

1. Call a broker or exchange member and inform them of your intentions.
2. Pay a commission fee-typically 1 cent per kilo gram ($0.01 x 50, 000 = $500)
3. Put up a margin deposit-10%

Margin deposit: 10% x 10 x 50, 000 x $5.50 = $275,000

So the total funds needed to sell 10 contracts in November: $280,000.

7.2.6.3 Actions at Delivery Time

After seven months, you are near the delivery time in July. At this point, you have two options:

1. Deliver on the contract

Find someone who is selling wheat, purchase the wheat and deliver the wheat to the delivery location.

2. Take a long position on an off-setting contract by buying a July contract at the going price.

Suppose that you don't actually have the wheat, so you are required to choose option 2. In July, you discover that a better than usual harvest leads to excess supply of wheat and a drop in the price of wheat. This is reflected in the price of the July futures contracts being offered in July at $4.00/kg. This outcome is exactly what you had anticipated!

You purchase (take an off-setting long position) July contract at $4.00/kg and realize the following profit:

($5.50 - $4:00) x10 x50, 000 = $750, 000

7.2.7 Market Risks - price variability

In the example above, you predicted exactly what would happen to the price of corn in July. Unfortunately, doing so on a regular basis (or even once) can be extremely difficult because prices are established by thousands of people acting to maximize their own welfare.

Thus, prices are subject to many unexpected fluctuations. Suppose that instead of prices dropping to $4.00/kg, prices actually rose to $6.50/bu. As mentioned, you will lose money if you take a short position and prices rise. In the example above, your loss would be:

($5.50 - $6.50) x10 x 5, 000 = -$50, 000

So, small, unpredictable price movements can a substantial difference in whether you lose/win and how much you lose/win.

7.2.8 Market Risks - Placed out of the Market

When entering the futures market, you are required to pay a margin requirement-usually 5% - 20% of the futures contract value. The margin account provides assurance that there exists a line of credit that can be used to finance changes in the value of the futures contract. The margin account is recalculated at the end of each trading day to accurately reflect price changes.

What if price changes?

Each day, there is a very high probability that the closing price for a particular futures contract will be different than the opening price.

How do the losses and profits get paid?

Marking-to-market: process of determining the financial positions of all market participants after the market closes. All remaining futures contracts are recalculated to reflect the closing price.

7.2.8.1 Example-Marking-to-Market

Let's consider an example of typical futures market day-to-day operations:

Day 1

You sell (take a short position) a July futures contract for 100,000 kg of wheat at $3.50/kg. You pay 10% into the margin account: $35,000.

Day 2

July wheat futures prices fall to $3.40/kg. Since you are short, a decrease in price implies that you profit by $0.10/kg. In other words, your futures contract is now worth ($0.10/kg x 100,000) = $10,000 more.

So, $10,000 is deposited into your margin account at the end of day 2. However, this implies that your contract has been marked to market - it is now a contract that would require you to sell at $3.40/kg, not $3.50/kg.

Day 3

July wheat futures prices rise to $3.45/kg. Since you are short, an increase in prices implies that you lose by $0.05/kg. In other words, your futures contract is now worth
($0.05/kg x100, 000) = $5,000 less.

So, $5,000 is taken out of your margin account at the end of day 3. However, this implies that your contract has been marked to market- it is now a contract that would require you to sell at $3.45/kg, not $3.40/kg.

7.2.9 Hedging Risk using Futures Markets

Markets can be very risky. So why use them?

For many agricultural producers, futures markets can be important tools for reducing risk. It is important, however, to understand how futures markets can reduce risk! This process is known as hedging: taking opposite positions in commodity markets (typically, local cash and futures markets) in order to guarantee a certain profit.

7.2.9.1 Local vs. Futures Markets

In the basic example of participating in futures markets, we assumed that the participant was a speculator. Typically, speculators do not have the actual commodity and participate in futures markets for one reason: profit. When we discuss the use of futures markets as a hedging tool, we are typically talking about agricultural producers who are either involved in producing the commodity (e.g., growing wheat; raising cattle) or purchasing the commodity (e.g., grain elevators; feedlot operators). For these producers, there are two markets in which participation can occur:

- ✓ Local market
- ✓ Futures market

There is an important distinction between these markets:

- **Local market** - used primarily to sell or buy the physical commodity. Most farmers deliver their commodities to the local market and sell at the price offered in that local market. For agricultural producers, it is the fluctuation of prices in the local market that are source of risk.

- **Futures market** - used to hedge the risk that can exist due to the fluctuation of prices in local markets. Typically used to offset the position that the agricultural producer has in the local market.

The price that you observe in a local market is the price at which an agricultural producer can sell a commodity. The price observed in a futures market is the price at which the "market" expects the commodity to be sold at the time that the futures contract expires.

Typically, the local price and the futures contract price are not the same. One exception to this is at the expiration date of a futures contract. We will assume that at delivery time (i.e., the date that a futures contract expires), the price of a commodity in the local market and the futures market is exactly the same.

Positions in the local market

When you want to figure out what position you are in your local market, ask yourself this question:

i. **If the price in the local market drops, do I benefit or do I lose?**

- If you own (or are producing) the commodity, then a drop in price is not beneficial, because you will not be able to sell it for as much as you could before the price drop. So, if you don't benefit when the local market price drops, then you are naturally long. Conversely, you benefit if price rises.
- If you consume the commodity, then a drop in price is beneficial, because you will be able to purchase it for a lesser price and reduce your costs. So, if you do benefit when the local market price drops, then you are naturally short. Conversely, you lose if price rises.

7.2.9.2 Hedging Local Market Price Risk

Suppose that in November, an operator of a grain storage facility buys 100,000 kg of wheat from a farmer at $4.00/kg. You now own the wheat and will sell it to processors at the local market price in July. You worry that by the time July comes around, the price of wheat might drop below $4.00/kg, meaning that you will lose money. How do you hedge this price risk?

Well, if there is a July wheat futures contract that has a price above $4.00/kg, you can lock in a profit!

Because you own the commodity and wish to sell it at the highest price possible, you do not benefit if the price drops. So, you are naturally long. To hedge the risk of a price drop, you will need to take an off-setting short position (short hedge) in the futures market.

Remember that if you are a short position in the futures market, every drop in the price of the commodity is a gain for you. So, if the price drops in the local market, it will also drop in the futures market. Thus, even though you lose in the local market, you exactly offset those losses by gaining in the futures market. Let's see how this works.

7.2.10 BASIS

7.2.10.1 Introduction

In analyzing how to hedge price risk, we assumed that at the time that a futures contract expires, the price in the local and futures markets is exactly the same. This is known as perfect convergence of prices. In reality, perfect convergence is rare, because there are always factors

that can contribute to differences between local and futures contract prices. Some of these factors include:

Locational differentials.

- Delivery point locations.
- Storage costs.
- Unforced load out provisions.
- Speculators in the market.

We need to analyze how imperfect price convergence affects an agricultural producer's ability to hedge risk. To do so, we introduce the concept of basis.

7.2.10.2 The Concept of Basis

What Is Basis?

Basis is the uninsurable changes in price that may prevent creating a perfect risk hedge using a futures market.

"Basis" is the difference between local cash price and a nearby futures price, quoted in common currency. For example, if the nearby futures price is $4.75, and cash is $4.55, then basis is $0.20 under (-$0.20). If the futures price is $4.75 and cash is $4.95, basis is $0.20 over (+$0.20).

Basis is typically measured against the nearest futures month after a cash transaction. For example, a cash corn transaction occurring in March will be measured against the May futures price; a forward price for November will be matched to the December futures, etc.

Basis = Local Cash Price - Nearby Contract Price **B = P - F**

7.3 Futures Market Practice

7.3.1 Speculator Approach

Who are speculators?

Speculators are people who attempt to profit through buying and selling, based on price changes, and have no economic interest in the underlying commodity. As a speculator, you

can either make or lose quite a bit in the commodity futures market. **Speculation** can also be defined as a Purchase or sale of a commodity at the present price with the object of sale or purchase at some future date at a favorable price.

Consider the scenario:

It is currently November. The July wheat futures contract is trading at $3.50/kg. Answer following:

1. You believe that the price of wheat will fall. What position should you take? Ignoring commission, calculate your rate-of-return on investment for 10 contracts if the margin requirement is 10% and the July prices are:

- $3.25
- $2.00
- $4.50

7.3.2 Hedger Approach

What is hedging?

To hedge is to take a futures position that is *equal* and *opposite* to a position held in the cash market. The objective is to mitigate the risk of an adverse move in prices.

Hedging: It is a trading technique of transferring the price risk. "Hedging is the practice of buying or selling futures to offset an equal and opposite position in the cash market and thus avoid the risk of uncertain changes in prices.

Hedging works in mitigating price risk because futures prices and cash prices are highly correlated. For example, a producer of soybeans has the risk that the cash price will decrease before the beans are harvested and can be sold. Selling soybean futures mitigates this risk. If the cash soybean price in fact declines, the futures price will have decreased as well. Then, the producer can buy back (or offset) the futures contract for less than he sold it for, generating a profit. This profit can be applied to the revenue he gets from selling the soybeans on the cash market, thereby mitigating the cash price decrease.

Hedging using futures very seldom results in delivery against the futures contract; contracts are liquidated via offset and do not result in delivery. The purpose of the delivery provision is

to ensure convergence between futures price and the cash market price. It is the threat of delivery that causes cash and futures to come together.

Short Hedging

A person who already owns or is in the process of producing a commodity has the risk that the price will fall. This risk can be mitigated by selling futures (short hedge), protecting the hedger from a decline in the price of the commodity/product owned or being produced.

Long Hedging

A person who does not now own the cash commodity but will require it in the future has the risk that the price will increase. *Buying* futures (long hedge) can mitigate this risk. A long hedge protects the hedger from a rise in price.

What makes hedging work is the fact that cash and futures prices converge at the delivery point - when one goes up, the other goes up as well.

The hedger takes an *equal but opposite position* in the futures market to the one held in the cash market to avoid the risk of an adverse price move. However, by doing this, the hedger forfeits any advantage of a cash price improvement.

7.4 Options

Options on futures provide a further possibility to cover price risk for some commodities. Options give the right to sell a futures contract or to buy one, at a strike price. Thus options truncate the probability distribution of price at the strike price and provide protection against adverse price movements (low spot price for sellers/put holders, high spot price for buyers/call holders). At the same time, an option allows the option holder not to exercise it and to profit from favorable movements (high prices for put options and low prices for call options). Farmers can use put options to create a floor price for their produce.

An option is a contract to buy or sell a specific financial product known as the option's underlying instrument or underlying interest. For equity options, the underlying instrument is a stock, exchange traded fund (ETF) or similar product. The contract itself is very precise. It

establishes a specific price, called the strike price, at which the contract may be exercised, or acted upon.

Contracts also have an **expiration date**. When an option expires, it no longer has value and no longer exists.

Options come in two varieties, **calls** and **puts**. You can buy or sell either type. You decide whether to buy or sell and choose a call or a put based on objectives as an options investor.

	Holder (Buyer)	**Writer (Seller)**
Call Option	Right to buy	Obligation to sell
Put Option	Right to sell	Obligation to buy

Buying and Selling

If you buy a call, you have the right to buy the underlying instrument at the strike price on or before expiration. If you buy a put, you have the right to sell the underlying instrument on or before expiration. In either case, the option holder has the right to sell the option to another buyer during its term or to let it expire worthless.

The situation is different if you write or sell to open an option. Selling to open a short option position obligates the writer to fulfill their side of the contract if the option holder wishes to exercise.

When you sell a call as an opening transaction, you're obligated to sell the underlying interest at the strike price, if assigned. When you sell a put as an opening transaction, you're obligated to buy the underlying interest, if assigned.

As a writer, you have no control over whether or not a contract is exercised, and you must recognize that exercise is possible at any time before expiration. However, just as the buyer can sell an option back into the market rather than exercising it, a writer can purchase an offsetting contract to end their obligation to meet the terms of a contract provided they have not been assigned. To offset a short option position, you would enter a buy to close transaction.

At a Premium

When you buy an option, the purchase price is called the premium. If you sell, the premium is the amount you receive. The premium isn't fixed and changes constantly. The premium is likely to be higher or lower today than yesterday or tomorrow. Changing prices reflect the give and take between what buyers are willing to pay and what sellers are willing to accept for the option. The point of agreement becomes the price for that transaction. The process then begins again.

If you buy options, you begin with a net debit. That means you've spent money you might never recover if you don't sell your option at a profit or exercise it. If you do make money on a transaction, you must subtract the cost of the premium from any income to find net profit.

As a seller, you begin with a net credit because you collect the premium. If the option is never exercised, you keep the money. If the option is exercised, you still keep the premium but are obligated to buy or sell the underlying stock if assigned.

The Value of Options

The worth of a particular options contract to a buyer or seller is measured by its likelihood to meet their expectations. In the language of options, that's determined by whether or not the option is, or is likely to be, in-the-money or out-of-the-money at expiration.

A call option is in-the-money if the current market value of the underlying stock is above the exercise price of the option. The call option is out-of-the-money if the stock is below the exercise price. A put option is in-the-money if the current market value of the underlying stock is below the exercise price. A put option is out-of-the-money if its underlying price is above the exercise price. If an option is not in-the-money at expiration, the option is assumed worthless.

An option's premium can have two parts: an intrinsic value and a time value. Intrinsic value is the amount that the option is in-the-money. Time value is the difference between the intrinsic value and the premium. In general, the longer time that market conditions work to your benefit, the greater the time value.

Options Prices

Several factors affect the price of an option. Supply and demand in the market where the option is traded is a large factor. This is also the case with an individual stock.

The status of overall markets and the economy at large are broad influences. Specific influences include the identity of the underlying instrument, the instrument's traditional behavior and current behavior. The instrument's volatility is also an important factor used to gauge the likelihood that an option will move in-the-money.

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