

AGRICULTURAL MARKETING

For 3rd year Agri. Economics stdts



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A collage of nine images illustrating various aspects of agriculture and agricultural marketing. The images include: a close-up of yellow corn cobs; a large crowd of people at a market; a close-up of green corn husks; a close-up of white, peeled potatoes; a close-up of a large pile of ripe, red and yellow apples; a man in a suit weighing produce on a scale; a close-up of white, peeled potatoes; a close-up of a large pile of ripe, red and yellow apples; and a close-up of a large pile of ripe, red and yellow apples. A large, red diagonal banner with the text "What is Agricultural Marketing?" in white, bold, sans-serif font is overlaid across the center of the collage.

Chapter –One

Agricultural Marketing and Economic Development

1.1 Agricultural marketing and marketing system

❑ Concept and Definition:

- The word market comes from the Latin word “**marcatus**” which means **merchandise or trade or a place where business is conducted**.
- The word “**market**” has been widely and variedly defined:
 - ✓ A **place** or a building where commodities are brought & sold.
 - ✓ Potential **buyers & sellers of product**.
 - ✓ Potential **buyers & sellers of a country** or region.
 - ✓ An **organization** w/c provides facilities for exchange of commodities.

✓ **Marketing** is a **societal process** by which individuals and groups **obtain what they need and want** through **creating, offering, and freely exchanging products and services of value** with others.

- *Philip Kotler*

- **Agricultural marketing** is the study of all **activity agencies, and policies** involved in the procurement of farm **inputs** by the farms and the movement of agricultural **product** from the farms to the consumer.
- ✓ **Change of ownership** of agricultural and food products.
- ✓ **Link** between agricultural production and food consumption.

Core concepts of marketing

- Needs, Wants and Demands
 - Marketing offers (Products, Services & Experiences)
 - Value and Satisfaction
 - Exchange, Transaction and Relationships
 - Markets
-
- ❖ A marketing system is the sequential set of kinds or types of business firms through which a product passes during the marketing process.
 - ❖ It shows the interrelationships of firms that provide the marketing functions and how these firms are organized.
 - ❖ The agricultural marketing system is a link between the farm & non- farm sectors.

Few essential components of a market:

- ❑ For a market to exist the following conditions must be satisfied.
- These conditions are also being termed as the **component of a market.**
- ✓ we should have **buyers & sellers**;
- ✓ there must be **Product**;
- ✓ there should be **business relationship** between buyers & sellers;
- ✓ **Place** or coverage.

What is Marketed? (Scope)

Goods

Services

Events & Experiences

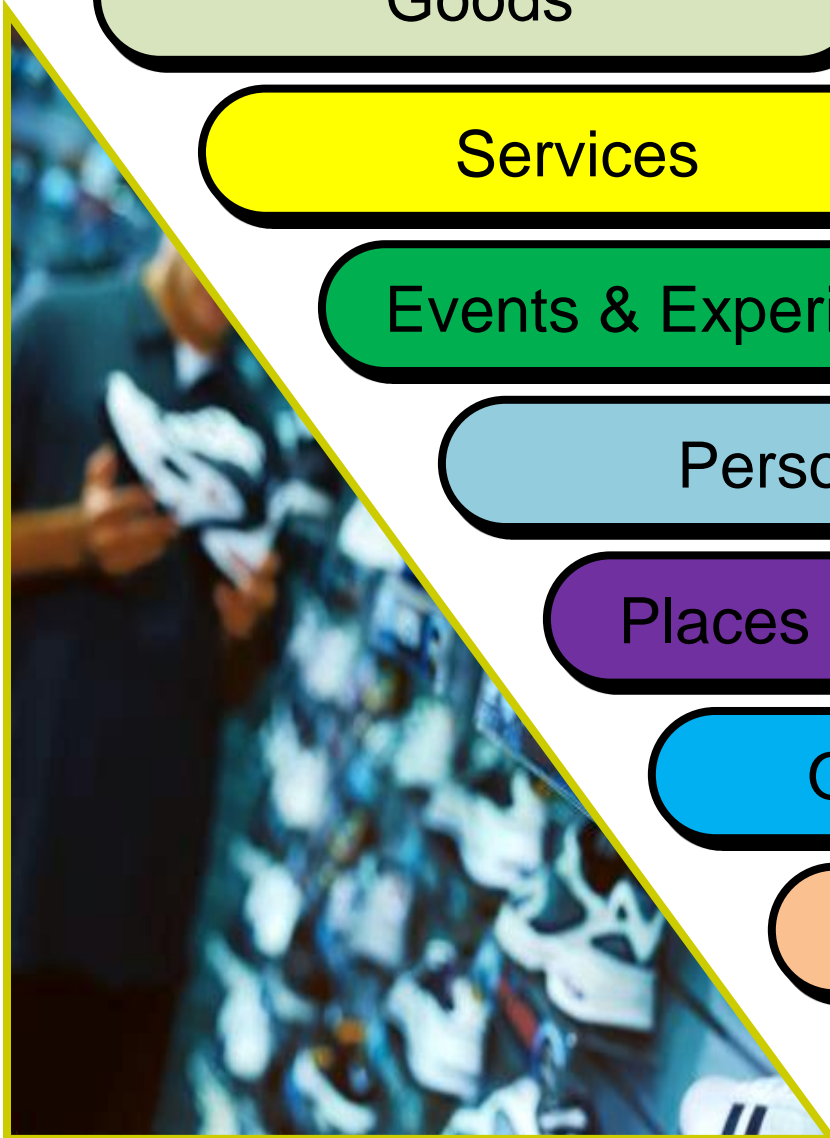
Persons

Places & Properties

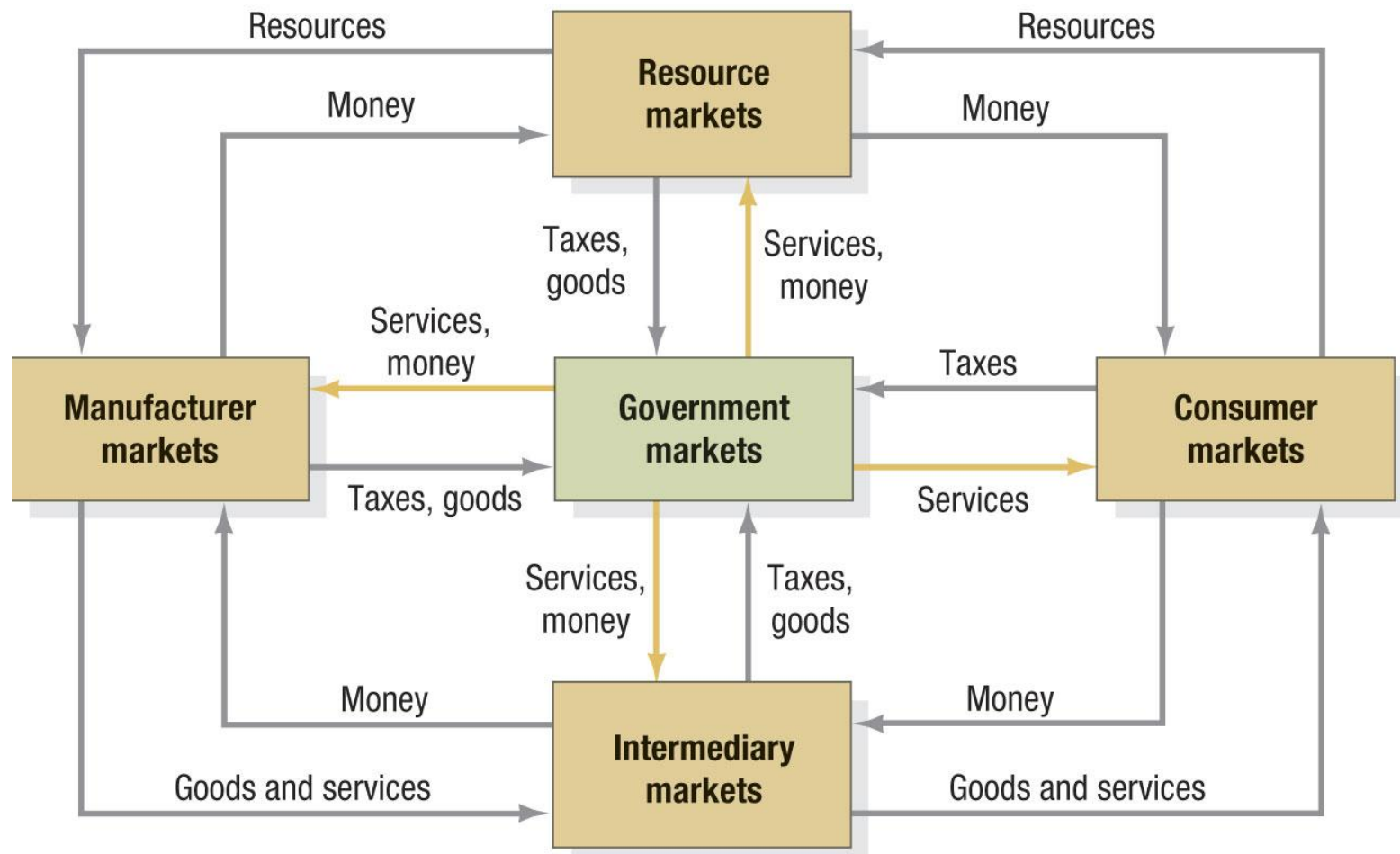
Organizations

Information

Ideas



Structure of Flows in a Modern Exchange Economy



❑ Many **factors affect the marketing system** of a product, but the most common and obvious ones are:

1. The **number of marketing functions** required from a product and to what extent each can be specialized, or combined with others, and performed at lower cost by a separate business.
2. the **degree of concentration of raw materials** and their location
3. the **degree of dispersion of buyers** and their location
4. whether or not a **product is controlled by one or few** companies under a patented process
5. **institutional development** of an industry
6. the **economic progress** of a country

❑ The **agricultural marketing system** includes:

- ✓ The assessment of **demand for farm inputs** & their **supply**;
- ✓ **Post-harvest handling** of farm products;

- ✓ Performance of Various **activities required in transferring farm products** from farm gate to processing industry & or ultimate consumers;
- ✓ Assessment of **demand for farm products**; &
- ✓ **Public policies & programs** relating to the pricing, handling, purchase & sale of farm inputs and farm products.
- ❖ Thus, the agricultural marketing includes **product marketing** as well as **input marketing**.
- ❖ In the context of agricultural marketing, **product marketing** is largely the **food marketing** which is a connecting link-the bridge between food **producers (farmers)** and **consumers**.
- ❖ It is both a **physical distribution** and an **economic bridge** designed to facilitate the movement of commodities from the farm to the fork.
- ✓ The **food marketing** is defined as the performance of all business **activities involved in the flow of food products & services** from the point of initial agricultural Production until they are in the hands of consumers.

Differences in marketing of agricultural and manufactured Goods:

1. **Perish ability of the Product:** most farm products are **perishable** in nature. The marketing processes of farm inputs must be completed in a **very short period**, **before their quality gets deteriorated** or else these products should quickly reach for **processing** activity.
 - ✓ Producers of farm products, thus, **cannot afford to fix reserve price or make the supply regular** but Producers of manufactured goods can.
2. **Seasonality of Production:** the production of farm products are **possible only in a particular season**, where as **their demand is more or less equitably distributed**.
 - ✓ This phenomenon is responsible for **market fluctuation in price**.
 - ✓ production of non-farm goods is not season specific & hence intra-year fluctuations in their prices are not to be seen.
3. **Bulkiness of Products:** most of the farm products are **bulky in nature** which makes their storage & transportation **difficult & expensive**.
 - ✓ it necessitates the closeness location of production, consumption & processing.

4. **Variation in quality of Products:** The quality of farm products significantly **varies due to various agro-climatic, technological and managerial reasons.**
- ✓ This feature of farm products makes their **grading, standardization & quality control very difficult.**
 - ✓ Non farms Products do not have any such problem.
5. **Small size of Holding & Scattered Production:** farm products are produced throughout the length & breadth of the country & **most of the producers are of small size.**
- ✓ This makes the **estimation of supply difficult & creates problems in marketing in terms of infrastructure requirement, & price policy.**
6. **Processing:** most of the farm Products are raw in nature & **need to be processed** before consumption.
- ✓ This **increases the price** spread of farm products.

Conflict of Interest in the Agricultural Marketing System

- **Consumers** are interested in securing the **high agricultural value at lowest possible price**.
- **Farmers** want the **highest possible return from the sale of their products**.
- Agricultural marketing **middlemen** seek to earn the **greatest profit possible**.
- Therefore, one of the primary **tasks of the agricultural marketing system** is to **reconcile these sometimes-conflicting demands**.

Key players	Interests
Farmers	maximum price, unlimited quantities
Manufacturers	low purchase price, high quality
Traders	low purchase price, high quality
Consumers	low purchase price, high quality

1.2 Importance and growth of agricultural marketing

❑ Importance of an efficient Agricultural Marketing

1. Optimization of resource use & output management:

- an efficient marketing system leads to the **optimization of resource use & output management**.
- ✓ contributes to an **increase in the marketable surplus** by **cutting down losses** in the process of storage, transportation, & processing.
- ✓ faster rate of growth in agricultural sector.

2. Increase in Farm Income:

- efficient marketing system results in **elimination of unnecessary market intermediaries, & malpractices; rationalizing market margins, & thereby increasing farmer's share in consumer price**.
- offers farm inputs at reasonable prices which enhance higher utilization of farm inputs, resulting in increased productivity, increased production, & thus increased marketable surplus.

3. Expansion of markets:

- a well-knit marketing system **expands the market** for the products by **taking them to remote corners** i.e. to areas far-off the production points.
- The widening of **market coverage** contributes to the **expansion in demand** & there by an **increase in higher income** to the farmers.

4. Growth of agro-based Industries:

- It results **stimulation the development of input manufacturing & marketing organization**, as well as the **development of many industries using farm products as raw material**.
- This in turn results in accelerated growth of the economy

5. Price signal:

- an efficient agricultural marketing system **transmits price signals to farmers, input supply firms, as also to consumers & processing industries** to enable them to **make rational decisions in resource & budget allocation**.

6. Adoption & spread of new technology:

- provides input to farmers to adopt & adopt quickly the new technology, developed by farm scientists.

7. Employment:

- It provides employment to millions of persons engaged in various activities such as packaging, storage, transportation, & processing.
- Persons like commission agents, brokers, traders, wholesalers, retailers, weigh men, packagers, & resulting staff are directly employed in the system.

8. National income & poverty reduction:

- marketing activities add value to the product & thereby contribute to increase in country's GNP, NNP, & the per capita income.
- An efficient agricultural marketing system aims at reducing food prices, earning more foreign exchange, cutting economic wastes, & there by increasing the purchasing power of people or diminishing poverty.

9. Creation of utility:

- marketing is productive as it helps **creating form utility (via processing activities)**, **place utility (via transportation)**, **time utility (via storage & ware housing activities, &)**, **possession utility (via buying & selling or transfer of ownership activities)**.

❑ Growth of agricultural marketing:

- **In past**, farmers used to **consume most of what they produced**;
- **but now**, most of the farmers produce more than what they consume & thus **exchange the surplus produced for the other things which they require**.
- This tendency **increased their dependence on marketing**, which has resulted in the overall **development of the market mechanism**.

❑ The following **factors have led to the growth in agricultural marketing:**

1. Production specialization:

- ✓ increases productivity & efficiency
- ✓ **increase of farm production & marketable surplus** which is the **base for growth of marketing** & in turn of the economy.

2. Technological change in agriculture:

- ✓ **evolution of high yield crop varieties & livestock breeds,** **increase use of productivity enhancing farm inputs**-fertilizer, agro-chemicals, animal feed, mechanization of farming, & development of better packages of practices, resulted in **substantial increase in farm production.**

3. Transportation & communication:

- ✓ **the increasing facilities of transportation & communication** **have expanded the market for farm inputs & farm products.**

4. Urbanization:

- ✓ movement of people from rural to urban area
- ✓ the demand for farm products is now largely coming from the urban area which has necessitated a faster growth of agricultural marketing.

1.3.The marketing process and approaches to the marketing problem

❑ The marketing process:

- ✓ Is a function that represents activities involved in the flow of goods from the place of its origin/initial production to the place of distribution/ultimate consumers.
- It consists of analyzing market opportunities, researching and selecting target markets, designing marketing strategies, planning marketing programs, and organizing, implementing, and controlling the marketing effort.
- *it is a series of actions & events that take place in some sequence*

❑ it composed of two systems:

- ✓ input marketing system &
- ✓ the product marketing system.

❑ It starts with farm inputs manufacturers/ suppliers

➤ The farm input sector provides seed, fertilizer, & other agro-chemicals, feed, machineries, labor, credit, & other farm supplies.

❑ The process at this stage includes:

1. **Physical & Technological Activities:** such as quality control, packaging, transportation, etc;
2. **Exchange Activities:** like buying, selling & pricing;
3. **Managerial & Business Activities:** such as planning, monitoring, forecasting, inventory, management, operations optimization, etc; and
4. **Organizational Activities:** such as channel designing, channel management, formation as well as observation of social, legal & moral codes of behavior.

- ❑ The second phase of agricultural marketing process starts from farm level of the farmers produces farm products.
- ❑ This product marketing system also consists of four sets of activities in the process
 - ✓ physical & technological activities (e.g. Packaging);
 - ✓ exchange activities (e.g. Price discovery, price determination);
 - ✓ managerial & business activities (e.g. optimization) &
 - ✓ organization activities.
- ❑ The agricultural marketing process ends when the goods & services reach their destination i.e., consumer.
- ❑ *The emerging agricultural marketing process is becoming consumer centered rather than the traditional one which was output & production- centered.*

Approaches to the marketing problem

➡ Tools to understand the existence of & find solutions to various marketing problems.

❑ There are three important approaches:

1. The functional approach
2. The institutional approach
3. The commodity approach

1. The functional Approach

➤ **Marketing function** may be defined as a major specialized activity performed in accomplishing the marketing process.

❑ The widely accepted classification of marketing functions is as follows:-

a) **Exchange function:**

✓ involved in the transfer of ownership (title) of goods & services.

- ✓ It includes functions like **selling, buying, and price discovery & price determination.**

b) Physical functions:

- ✓ include those activities which are involved in **handling movement, & physical change of the actual commodity itself.**
- ✓ These activities are directed to solve the **problems of what, when, & where in marketing processing, storage & transportation.**

c) Facilitating functions:

- ✓ all those marketing activities which **make possible the smooth performance of the exchange & physical functions.**
- ✓ these activities are **not directly involved** in either physical handling of the product or in exchange of title for goods.
- ✓ However, **present day marketing is not possible without these activities;** **standardization or (quality control & grading), financing, market promotions, & risk bearing are important “facilitating” marketing functions.**

- ✓ The functional approach considers the jobs that must be done; it is not concerned as to “who” does “what”.
- ✓ Analyzing the functions of various middleman is particular helpful in evaluating marketing costs.
- ✓ A costs comparison is meaningful only when they are related to the job done.
- ✓ The approach is also helpful in understanding the difference in marketing costs of different commodities.
- ❑ There are 3 important characteristic's of marketing functions:
 - ✓ First, the functions affect not only the cost of marketing but also the value of the product
 - ✓ Second, although it is frequently possible to “eliminate the middlemen”, it is very difficult to “eliminate marketing functions.”
 - ✓ Third, the marketing function can be performed by anyone anywhere in the marketing system.

2. The Institutional approaches

- The institutional approach focuses on the questions of “who” does “what”.
- it considers the nature & the characteristics of various intermediaries-middlemen & such agencies, as also the arrangement & organization of the marketing machinery.
- **Middlemen** are those individuals or, business concerns who specialize in performing the various marketing functions involved.
- They may operate as individual proprietors, partnerships, cooperatives, or cooperation.
- ❑ In agricultural marketing system the following are the category of middlemen.
 - a. **Merchant middlemen**- (e.g. wholesalers, retailers) who take title to the goods they handle.

- b. **Agent middlemen-** (e.g. commission agents, brokers) who only act as representatives of their clients (buyer /seller) & do not take title to the product they handle.
- c. **Processors & manufactures** -which largely create form utility in the product they receive.
- d. **Facilitating organs/middlemen-who** primarily aid various middlemen directly involved in the marketing process. (E.g. include financial institutions, insurance organizations, trade organization, weigh men, transporters, warehouse owners, etc.

♥ **The rational for existence of middlemen are:**

- 👍 These middlemen often can perform the marketing functions more efficiently than either farmers or consumers;
- 👍 Their use provides the advantages of division of labor & specialization;
- 👍 They enjoy economics of scale & hence lower the cost of function performed;
- 👍 They have adequate amount of resources.

3. Commodity approaches:

- In this approach, a specific commodity or groups of commodities are taken and the functions and institutions involved in the marketing process are analyzed.
- This approach focuses on what is being done to the product after its transfer from its original production place to the consumer.
- It helps to pinpoint the specific marketing problems of each commodity as well as improvement measures.
- The approach follows the commodity along the path between producer and consumer and is concerned with describing what is done and how the commodity could be handled more efficiently.
- This approach has been used in this study as a guideline to identify different aspects of the problem.

1.4. Market classification:

➤ There are **11-dimensions**, used to classify the market:-

1. Location
2. Area or coverage
3. Time span
4. Volume of transactions
5. Nature of transactions
6. Nature of commodities
7. Degree of competition
8. Stage of marketing
9. Extent of public intervention
10. Type of population served
11. Accrual of marketing margins

1. Location

❑ On the basis of the place of location or operation, markets are the following types;

I. Village market

- ✓ Located in **small villages** where transactions take place among the **buyers & sellers of the village itself**.
- ✓ **Limited business activity, limited number of commodity. Function is also limited.**

II. Primary market

- ✓ Located in **big villages or small towns** near the centers of production of farm commodities.
- ✓ Transaction takes place between **producer & traders**.
- ✓ Greater than 70% taken from this market.
- ✓ In these markets, a **major part of the produce is brought** for sale by the **producers-farmers** themselves.

III. Secondary market also know as **wholesale market**

- ✓ These markets are **well equipped with marketing facilities-** transport, storage, and communication & with functionaries like commission agents, brokers, weigh man, etc.
- ✓ Located in **big towns or cities**.
- ✓ A **bulk of commodities** arrival in to secondary markets is **from primary market via traders**.
- ✓ Producers' contribution here is less than 10%.
- ✓ All business activities are taken place here.
- ✓ Traders wholesalers (transaction of commodities takes place normally in bulk.)

IV. Terminal market – also known as “consuming centers”.

- ✓ Whether for export or domestic markets.
- ✓ Transaction is takes place between wholesalers or processors or consumer's or assembled for export.

2. Area or coverage

- On the basis of the area from where buyers & sellers usually come for transaction, markets are of the following types.

I. local market

- ✓ Buyers & sellers confined/drawn/ from the same village or nearby village.
- ✓ The marketing of highly perishable products are carried out largely in local markets.

II. Regional market

- ✓ A market in which buyers & sellers of a product are drawn from a larger area than the local markets.

- ❑ These markets are exists for usually **grain markets (less-perishable-products.)**

III. National market

- ✓ Commodities which are **produced & consumed in the country.**
- ✓ markets found for goods like tea, sugar

IV. Global market

- ✓ **Exchange among or between the countries.** e.g. coffee, cotton, rice than (one)
- ✓ Markets in which **buyers & sellers** are drawn from **more than one country.**

3. Time span

- ❑ Based on the basis of **periodicity of markets**, markets are classified as follows.

i. Short-period Market

- ✓ Largely, **highly perishable products** are transacted in this market.
- ✓ The business confined **not daily** & for **a couple of hours** may be in the **morning or evening of a day** with in once or twice a week.

ii. Long period market

- ✓ Markets have **not only long duration for business transactions but also have high frequently of contact.**
- ✓ Large number of products are congested here / there is transportation means/

iii. Secular-Period market

- ✓ **Permanent types of market**, there are permanent structures & transactions are largely in **durable commodities**.
- ✓ **Duration is also very high**.

4. Volume of Business Transaction

i. wholesale Market

- ✓ **“Bulk”/ large quantity**; markets generally located in **big towns or cities** & are well equipped in terms of storage, transpn, communication & other required marketing facilities.
- ✓ **Transactions are takes place among traders**/ link between primary market & terminal markets.

ii. Retailer market

- ✓ **Small quantities**, products are bought by consumers in small quantity, as per their requirements.
- ✓ Obviously, these markets are **near to consumers**.
- ✓ **Traders & consumers**.

5. Nature of transaction

i. Spot or cash market

- ✓ A market in which goods are exchanged for money immediately after the sale is called the spot market.
- ✓ The transaction is made deliberately.

ii. Forward /Future market

- ✓ A market in which the purchase & sale of a commodity is negotiated much before the actual physical transactions of the commodity.
- ✓ Negotiation takes place at least once & transactions take place in the future deliberately.

6. Nature of commodities / Products/

i. commodity market

- ✓ A market which deals goods & raw materials such as wheat, seed etc.
- ✓ raw materials industry or consumption

ii. Capital market

- ✓ A market in which bonds, shares, security & money are bought & sold.
- ✓ Credit market (domestic market), share market(stock market), foreign exchange market(international market)

iii. Bullion market

- ✓ Precious metals are being transacted, “Gold” & like

7. Degree of competition

i. Perfect competition market

- ✓ Large number of buyers & sellers;
- ✓ All have perfect knowledge about the market;
- ✓ No restriction on entry & exit;
- ✓ Products are homogeneous;
- ✓ Price variation at a point of time is almost uniform.

ii. Imperfect market

- ✓ One or more features of perfect Competition are lacking.

- ✓ Monopoly, monopsony, duopoly, duopsony, oligopoly oligopsony, monopolistic competition.

8. Stage of marketing

- Assembling
- Processing
- Wholesaling
- Retailing

➤ **Producers market** largely concern on **assembling the commodities** for future distribution to other markets.

- ✓ Largely come from farmers-producers

➤ **Consumers market**; goods are finally **distributed to consumers**.

9. Extent of public intervention

- ✓ Based on the **extent of intervention of government** in the conduct of business, markets may be of the following 2-types:-

I. regulated markets

- ✓ Markets in which business activities are carried in accordance **with the rules and regulations formed by the statutory market organization.**
- ✓ **How the price is fix**, method of pricing of the wholesalers.
E.g. in India almost 99% is regulated market.

II. Unregulated market

- ✓ Markets in w/c business are conducted **without any set rules & regulations.**
- ✓ Traders frame their own rules for the conduct of business.

10. Types of population served

- I. Urban market:** - a market which largely **serves the people living in urban areas.**
- II. Rural market:** - a market catering largely to the demand **for rural people.**

11. Accrual of marketing margins

- ✓ Markets can also classify on the basis of as **to whom the marketing margins accrue**.
- ✓ Over the years, there has been a **considerable increase in the producers or consumers cooperatives as also other organizations handling marketing** of various products.
- ✓ Though bulk of the trade of farm products is in the hands of private traders, **the cooperative marketing is increasing its share** in some developing countries rapidly.
- ✓ The **marketing margins are negligible** or shared amongst members when marketing activities are carried (undertaken) by cooperatives.
 - I. cooperative markets
 - II. private(traders) market

CHAPTER-TWO



MARKETING FUNCTIONS, COSTS AND EFFICIENCY



2.1. MARKETING FUNCTIONS

- ❑ **Market function** may be defined as a major specialized activity performed in accomplishing the market process.
- ❑ Classified into 3 categories:
 - ✧ **Exchange function:**
 - ✓ selling
 - ✓ Buying
 - ✓ Pricing: (price determination , Price discovery)
 - ✧ **Physical function:**
 - ✓ Storage
 - ✓ Transportation
 - ✓ Processing
 - ✓ Packaging

❏ **Facilitating function:**

- ✓ Quality control (grading and standardization)
- ✓ market intelligence
- ✓ Risk management
- ✓ Financing

1. **Exchange functions**

- **heart of marketing function** (buying & selling)
- title changes, product changes hand

♣ **Buying: taking of title**

- Decide on What, when, where, how much, how to buy
1. planning of purchasing is a must
 2. identify the source, establish contact
 3. negotiate price & terms of condition
 4. take delivery & make payment

♣ Selling:

1. planning of sell: - product development
2. identify buyers and establish contact
3. creation or expansion of demand
4. negotiate: prices & terms of conditions

☐ Methods of buying & selling – trade practices

- ✓ Open auction:- most beneficial / completed ones
All (buyers, sellers & facilitators known how much price is the price.)
- ✓ Under cover: - only (sellers & buyers) know the price, but facilitators do not know.
- ✓ Personal negotiation
- ✓ Closed tenders: depends on grades & likes
- ✓ Quotations based: samples

♣ Pricing

- Price discovery is a human process, **set by judgment & fact**, subject to the relative **bargaining power of buyers & sellers**.
- There is **no guarantee** that buyers & sellers will always **immediately discover the equilibrium price**.
- The distinction between the **price determination & the price discovery** gives us a **two-stage price discovery process** for farm products.
- ❖ **Stage one**, consists of **evaluating the supply & demand forces & estimating the market clearing price**.
- ❖ **Stage two**, is the **application of this estimated price to a specific trade**, taking into considerations **grade premiums, quality, discounts, buyer & seller services, & bargaining power**.
- ➡ **Pricing errors** can arise at both stages of the pricing process.
- ✂ **Price discovery**: *the process by which **buyers & sellers** arrive at a specific price for a given lot of produce in a given location.*

✧ **Price determination:** *the process by which the broad forces of supply and demand establishes a general, market- clearing equilibrium price for a commodity.*

♥ Five systems of price discovery for farm products have been identified;

1. Individual, decentralized negotiation

- ✓ Farmers bargain individually with buyers of farm products until a price is established.
- ✓ The resulting fairness of price depends upon the information, trading skills, & relative bargain power of buyers & sellers.
- ✓ Generally takes place at farm level or production.

2. Organized, central markets trading

- ✓ Price uniformity considerably improves over individual decentralized negotiations method.
- ✓ The focus of price discovery is shift from farm level to central markets.
- ✓ All buyer & seller, and, their supplies & demands are represented in the central markets,
- ✓ Terminate markets & auctions are the examples.

3. Formula pricing systems

- It involves attempts to secure the benefits of central market price discovery without physically routing all produce via central markets.
- Central markets determined price is used as a base & adjusted by formula, for transportation costs and quality differences.
- E.g. A Restaurant want 500 eggs per day & price of egg = 2.75 birr/egg. So the Restaurant would make a formula for how much egg should add if / in cases, the eggs breaking with transportation and like.

4. Bargaining pricing

- ♥ These bargaining prices are common for perishable commodities like fruits, vegetables, milk, etc.
- ♥ Bargaining implies collective pricing on the part of farmers.
- ♥ The collective bargaining process used in labor market is frequently cited as the model for farmers to follow, in order to discover farm price. However, there are differences in labor & farm products.

❑ Bargaining price discovery probably **works best for commodities:-**

- a. with relatively few producers;
 - b. Produced in a concentrated geographic area;
 - c. Which cannot be stored or withheld from the market,
- ♣ E.g. Trade union: wage rates, cooperative marketing society.

5. Administered pricing system

- These systems are those in which the **government becomes a third party in the price discovery process.**
- Price supports, price ceilings, public procurement & distribution are the techniques of administered pricing.

2. Physical functions:

- 1. **Packaging: is first performed by farmers** in the marketing of agricultural commodities. The function is quite often put as **facilitating marketing functions.**

- This function is expected to be performed almost at all stages of marketing, starting from assembling to the retailing.
- The type of packaging & material used for packing, however, vary from commodity to commodity & across the stages of marketing.
- ♣ Packing materials used include gunny bags, plastic, polythene, aluminum, tin or glass containers, wooden boxes or straw/ bamboo baskets.
- Packing (single product) & packaging (all products covering)
- ❖ **Packing** means the wrapping and creating 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, or parcels for sale to the ultimate consumers. branding, expiry date and manufacturing date

II. Transportation

- Place utility created;
 - Market development, demand expansion;
 - Transportation cost accounts for over 50% of the total marketing cost. It implies high cost or poor efficiency.
- ❑ The following may be identified as **influencers of the transportation cost**:
- a. distance
 - b. quantity of the product
 - c. mode of transportation
 - d. conditions of roads
 - e. nature of the product (period)
 - f. Risk associated.
- Road /land transportation, pathways (head loads, two wheels, pack animals), railways and like.
 - Competitive advantage is in terms of degree of flexibility (of route), cost speed, frequency, & efficiency.

III. Storage

- Processing fresh products by canning or freezing them is another form of storage.
- And because storage operations delay sales & subject the farm /firm to inventory risks, financing & risk bearing are considered part of the storage function.
- # 25-30% of farm products are lost, due to storage.
- # time futility e.g. warehousing
- ✚ a number of issues concern the farm products storage function:-
 - ✓ How large should the food stocks be?
 - ✓ How should food stocks be managed & financed?
 - ✓ How can inventory & storage costs be reduced?
 - ✓ What storage capacity is desirable?
 - ✓ Storage decreases deterioration both in quantity & qualities.
- ☐ Storage structures: there are variety of storage structures used to store farm products;

- Underground storage structure (mainly at farm levels)
- Metal drums storage
- Bulk or loose storage: keep as it is (without anything)
- Bag storage
- Improved storage structure: bins (largely small size), Cover & plinth (CAP) storage, Ware houses, silos, Cold storage.
- Three types of risk in storage:-
 - ✓ Quality risk (deterioration);
 - ✓ Quantity risk (loss);
 - ✓ Price risk.
- Stocks can be Food stocks, carryover, & reserves: there are **several kinds of food storage, serving various purposes:**
 - ❖ Working inventory or certain level of supply: the basis purpose of it is to **prevent supply disruptions.**
 - ❖ Seasonal food stocks: are held to **balance supply with demand.**

- ❖ Carryover stocks: refers to the amount of commodity left over from one markets year to the next.
- ❖ Reserve or Buffer stocks: contingency refers to /intended/ balance food supply with demand over the long-run & between food surplus & deficit regions of the country.
- ❖ Speculative stocks= profit motive (cost- benefit ratio).
- ❑ Components /factors affecting/ storage costs:-
 - ➡ Maintenance cost (technical cost & administrative cost)
 - ➡ nature of the product
 - ➡ losses
 - ➡ investment require: size interest
 - ➡ Risks involve.

IV. Processing

- Innovation and branding: - innovation and change have become a way of life in the food industry. All sectors have been affected, from farm supply industry to farmers to food retailers.

- ❑ Most of the product innovation in the food industry has originated in the food processing sector.
- **An innovation is the discovery and application of a new idea.** Three-types of innovations have been important for food manufactures.
 - a. New marketing methods and techniques, which often increase operational efficiency.
 - b. New products and services, which add more consumer value of products; and
 - c. New business organizations: such as the cooperative food processor, joint ventures between firms, or new market channels.
- ❑ Branding permits the food manufacturer to quality-certify his products, transfer the goodwill of the firm to new products, and otherwise differentiate his products from competitor's products.

- ❖ These firms situation play a vital role in transforming bulky, raw, perishable farm products into storage, concentrated, & more appealing food products.
- ❖ 1-2% of a product is being processed;
- ❖ form utility for a product;
- ❖ Not necessarily changes of a form, but canning, freezing for keeping quality increases, shelf life increases, value addition increases.
- ❖ Food processing- milling of grains, manufactured of edible oils & oil cakes, sugar, preservation of food, & like.
- ❖ agro-related (non-food) processing: leather industry; textile; processing of tobacco leaves & manufacture of tobacco products; brewed & manufactured of beverage; manufactured paper & paper products manufactured wooden products, furniture & fixtures.

■ Problems of food processors

☞ Food processors experience problems & face challenges in 3- major areas:

- a. Processing problem: - high capital investments, underutilization of capacity; dilemma in decisions on location, number, size of plants.
- b. Buying operations: - non availability of regular, quality & bulk raw materials.
- c. Selling strategies: problem of credit sale; problem of selection of channel.

3. Facilitating functions

1. market information

➡ Includes. Market news (do not carry out research, producing information like price & other)

Roles of market information:-

- 👉 to improve **operations efficiency**
- 👉 improve **competitiveness**: pricing effect
- 👉 **decision making** process

❖ **Information sources** are private source, government based, research institution.

Criteria for evaluation for market – information effectiveness:-

- information must be available **timely**;
- information must be **complete /comprehensive**;
- information must be **reliable, accurate, timely**;
- information must be **relevant & in usable form**;
- Information must be **accessible** to all users.

Problems related to market-news & information:

- Price specifications (for which quality)
- Net or gross price (means of measure)
- Information cost

d. Market organ is changing; this changes of market organization lower the utility of past market information.

❑ Criticisms of market information:

- a. The forecasts are usually **inaccurate**;
- b. Market reports inevitably **depress farm prices**;
- c. Market information is of **greater value of buyer of farm products than to farmers**;
- d. Market reports are **manipulated**.

II. Quality control- grading & standardization

- **To perfect product** is objective of grading & standardization.
- Standardization: more conceptual/ **provide grade standards**/.
- ❑ **attribute of grade standards**:-size, color, tenderness, length-fiber, aroma, fat% like
- **Grading**: sorting out of the unlike lots of products into uniform categories or homogeneous lots, according to quality standards.
- **Sensory attributes**: smell, test & like

❑ The advantage of grading & standardization:

- a. **Improve the competitiveness**- Ethiopian grade & standard Authority responsible to this.
- b. **Improve operational efficiency & price efficiency** – cost reduction.

❑ Criteria for grades & standardization

- a. Standards should be based on **recognizable and user friendly characteristics**.
- b. Standards should use factors which can be **measured accurately**.
- c. Standards should use those **factors & use terminology which is common** (that will make the grades meaningful to a majority of users)
- d. Should have **enough coverage**.
- e. Should **not be costly/should be reasonable**.

❑ Problems of grade & standardization:

- a. Designing food grades; 9(d/ce in preference)
- b. Implementation of food grading systems;&
- c. Determining quality standards (criteria)

III. Risk management

- Risk is inherent with the ownerships of goods & as with other functions of marketing; risk must be borne by someone.
- They cannot be eliminated. Risks can, however, be managed.
- every person in marketing system “bears” risk
- ❑ There may be 2- category of risk in marketing management:-
 - a. Physical damage/stolen, fire, & like/: production destruction from natural hazards, such as, fire, wind & so on.
 - can be managed by:
 - ✓ Insurance: transferring the risk to somebody.
 - ✓ Build up of own fund: to cover such a possibility.
 - b. value deterioration (quality deterioration, price changes): product deterioration in value resulting from- quality deterioration or price changes because of a change in consumer preferences, a change in general business activity.

- The management for reducing this risk is more important than the physical damage/risk.
- ❖ improvement on the market information system;
- ❖ Government price support program.
 - ✓ Shifting price risk from producers to the tax roles of the society.
- ❖ Selling of a products in advance i.e., fixation of price in the present for delivery at specific future dates, called future market.
- ❖ Via vertical integration of the marketing channel also reduces or transfer risks.

2.2. Marketing Agents and their function

☐ Market Agents:

➡ Producers

➡ Middlemen are:

- ✓ merchant middle men like wholesalers, retailers,
- ✓ agent middle men commission agent and brokers,

- ✓ speculative middle men (who specialize in risk taking), processors,
- ✓ facilitative middle men (laborers, weigh men, graders, transport agency, communication agency, advertising agency, and auctioneers)

➡ Marketing institutions:

- ✓ Public sector (market and inspection, agri. cost and price, food corporation, etc)
- ✓ Cooperative sector

2.3. Marketing Channels

- ✓ *Path/root via which product flows.*
- ✓ *It links different marketing middlemen in sequences.*
- ✓ In LCDs, minimum three intermediaries are there between producers and consumers.
- ✓ In DCs, there one or two intermediaries between production and consumption.

➡ **Marketing channels:** *it is route through which products move from producer to consumer.*

☞ The **length** of channel depends on **type of commodity, form of consumer demand, degree of regional specialization**, etc.

➡ Marketing channels are the **chain of intermediaries through whom the various agricultural products passes from the producers to the consumers.**

➡ It represents the **route through which agricultural products move from the producers to the consumers.**

➡ In other words, it is the **set of firms and individuals that take title or assist in transferring title**, to a good or service as it moves from the producer to the final consumer.

➡ Marketing channel can be thought as **a connecting link-the bridge-between farmers and consumers.** In this sense, it is both a physical distribution and an economic bridge designed to facilitate the movement and exchange of commodities form

the farm to the dish.

- ❑ The physical distribution is concerned with the physical handling and transfer of agricultural products as they move from producers to consumers.
- ❑ The economic aspect plays the **role of adding value** to farm commodities and **facilitating the exchange process** between buyers and sellers.
- ❑ ***Refer what wrote in the class!!!!!!!!!!!!***

- The decision about which channel to use is extremely important because both **potential profits** and **potential costs** are involved.
- **Selection of distribution channels** will impinge up on decisions about every other element of the marketing mix.
- **Pricing decisions will be greatly affected** whether the company attempts to mass market through as many wholesale and/or retail outlets as possible, or purposively target a relatively small number of outlets offering its customers high service levels.
- The amount of promotional effort required of an organization will be a function of how much, or little, of the selling effort is undertaken by the channels of distribution it uses.
- The **product and/or its packaging** may have to be designed to suite the storage and physical handling systems of the distributor.
- Decisions relating to distribution channels are **part of the strategic marketing plan**.

- In this plan, target market will be specified along with the target level of **market share, market coverage, customer service and so on.**
- The channels of distribution used by an organization must be **capable of assisting in reaching these targets.**

❑ Modern distribution systems are based on:

- ✓ strategic planning,
- ✓ adhere to the marketing concept,
- ✓ focus on target markets, and
- ✓ are consistent and flexible.

✧ **Strategic planning:** Distribution channels must be compatible with the strategic marketing plan.

- If, for instance, the product requires technical support, then mass marketing is probably inappropriate.
- Alternatively, if **large volume of sales** is required in order to achieve particular profit targets, then **selective distribution** would be inappropriate.

- As new products are introduced, existing channels have to be reassessed since they may not be the right channels for the new product.
- Sometimes a company will decide not to launch a new product because it doesn't fit in with the existing distribution channels and existing strategy.
- Another consideration is the stage of the product's life cycle. It can happen that as the product proceeds through its life cycle the appropriateness of the distribution channel can change.
- When developing the strategy, thought should be given to how the needs of the product might differ over its life span.
- ❖ An organization's distribution strategy is often interconnected with its promotional strategy.
- ➡ If the agribusiness concerned believes that its product(s) can be meaningfully different from others on the market, then it may elect to direct the greater part of its promotional effort towards end users.
- This is called a pull strategy, whereby the objective is to create such a strong preference for the product among end users that the resulting

demand pulls the product through the channel of distribution.

- ➡ Where the product is perceived by end users to be a commodity (or one where there is little difference between brands) then the channel strategy may be to target much of its promotional effort on intermediaries.
- *If intermediaries can be persuaded to stock the product, in preference to those of competitors, then when consumers visit a sales outlet and ask for a product by its generic name it is the product of the company which is supplied.*
- This is termed as a push strategy.
- In practice, *the promotional strategies of most agribusinesses will be a combination of pulling and pushing the product through the channel of distribution*, but there is likely to be more emphasis on one or the other.

✧ **Adherence to the marketing concept:** Agribusinesses which themselves have adopted the **marketing concept often experience a problem** when their products and services have to be delivered to end user through **intermediaries** who are **more sales than market oriented**.

- This should be one of the **primary criteria when selecting distributors**, i.e. the degree of market orientation.
- In many cases, the producer or supplier will find it **difficult to find market oriented intermediaries** and in these instances will have to embark on **training and education programs**.

✧ **Target Marketing:** Another important criterion on the selection of distribution channels is **the extent to which these focus on the specific market segments that the producer or supplier wishes to penetrate**.

❑ Factors in Choosing (Affecting) Channels of Distribution

- The factors to be considered in deciding **how a channel should be organized** are divided into those that **are external to the firm (exogenous)**, and those that are **internal to the firm (endogenous)**.

❑ Exogenous Factors:

1. Characteristics of Customers

- A. **Sheer Number of Customers**- **large number of customers** for a product entails a **long and numerous channels**.
- B. **Location of Customers**- if the customers of a product are geographically **dispersed**, the most effective channel may be by mail order, or through a **distributor covering a wide area**.
- C. **Common Size of Purchases**- where customers buy **small birr** amounts, the **channel is likely to be long**.
- D. **Way of Communication by Customers**- where customers obtain information and advice from local retailers, **retailers** should definitely be included in the channel.

2. Product Class:

- In some cases, product class weighs heavily in the selection of channels of distribution for agricultural products.
- **Perishable products** often require **less complex channels with few participants** because:
 1. the more the product is handled, the greater the **opportunity for spoilage** and
 2. Marketing of perishable products often require **highly specialized skills** and personnel who **know the products and the business well**. When the channel is complex, there is more opportunity for things to go wrong.
- Products that are highly technical in nature tend to have less complex channels. Also, products that sell for a **high price per unit** are often marketed by company representatives **directly to user**.

3. Competition

- In some agribusiness marketing situations, the competition among companies is so intense that it influences the selection of channels of distribution.

- This is often the case in market situations where the market shares for certain products tend to be stable, and marketing managers are reluctant to make any changes which might threaten that stability.
- Moreover, many consumers prefer to shop in stores which carry a selection of brands, so that they may take advantage of different promotions.
- Therefore, the more competition, the greater consumers' satisfaction.
- From the seller point of view, the advantages of **staying in conventional channels of distribution**-even with high level of competition- may far outweigh those of selecting another, more innovative channel.

❑ Endogenous Factors:

1. Experience of the Firm

- ✓ may have a lot to do with the channels of distribution it uses.
- ✓ **An older, experienced firm**, which have developed marketing expertise through the years, established relationships and amassed a supply of working capital, may prefer to **select a channel of distribution where it will play an active role in the distribution of the product until delivery to the consumer**, and even thereafter.
- ✓ On the other hand, **a new firm**, which is still coping with production problems and is short of working capital, **may prefer to utilize channels of distribution that include experienced intermediaries who are able to take over more of the marketing.**

2. Control Requirements

- ✓ in many cases, a company's **desire to maintain control over the quality of a product entails a less complex channel of distribution.**

- ❖ Sometimes, in order to control the quality of the product and maintain high image, companies may sell directly to user.

3. Economic Aspects

- ✓ the firm sets out to obtain the highest profits, and **the channel that produces the highest profit** is the one that will be selected.
- ✓ In order to determine which channel gives the highest profit, the firm **analyses each channel in terms of anticipated sales and anticipated costs**.
- ✓ The length of channel varies from commodity to commodity, depending on the quantity to be moved, the form of consumer demand, and the degree of regional specialization in production.

2.4. Fundamental approaches to study marketing

1. Commodity approach:

- Commodity approach refers to **the detail study of the problems encountered in the marketing of particular products** that may be consumer, industrial or agricultural product.

❖ This detailed analysis encompasses the study of:

- ✓ classification of products;
- ✓ characteristics of each kind of product,
- ✓ source of supply,
- ✓ the persons engaged in exchange,
- ✓ its transportation,
- ✓ financing,
- ✓ storage and
- ✓ advertisement

2. Institutional Approach:

- this approach studies the various institutions particularly the middlemen or facilitating agencies which perform the marketing functions.
- It emphasizes the type of middlemen and agencies involved (wholesaling, retailing and other agent-middlemen at the different distribution level)

3. Functional approach

- refers to the classification and study of specialized activities which are performed in doing marketing works i.e. functions of marketing systems.
- It analyses each function, in relation to its importance of its performance.
- The different marketing functions are:
 - ✓ selling,
 - ✓ buying,
 - ✓ transportation,
 - ✓ warehousing,
 - ✓ financing,
 - ✓ risk-taking and
 - ✓ market-intelligence

4. Decision-making approach:

- ❑ Decision is to be based mainly on two variables: uncontrollable and controllable variables.
- ❑ Uncontrollable variables are interaction of economic, psychological and political forces and sociological factors that can bring change in the market.
- ❑ controllable variables refer to the individual firms adjustments to prices, products, publicity, personal selling etc.
- *Thus, this approach looks into the analysis of these factors in the decision making process*
- Even though we differentiate 4 different approaches to marketing, almost all marketing studies use the stated approaches in combination.
- They are also helpful in conceptualizing analysis

2.5. Marketing costs

- ◆ Marketing costs refers to those **costs, which are incurred to perform various marketing activities** in the shipment of goods from producers to consumers.
- ◆ Marketing cost includes: Handling cost (packing and unpacking, loading and unloading putting inshore and taken out again), transport cost, product loss (particularly for perishable fruits and vegetable), storage costs, processing cost, capital cost (interest on loan), market fees, commission and unofficial payments

1. Packaging costs:-Most produce needs packaging. Exceptions are generally larger fruits and vegetables such as pumpkins and watermelons which may be transported in bulk. Leafy vegetables, such as cabbages, are also often transported in bulk.

- ✓ Here the outer leaves themselves act as a form of packaging by protecting the inner leaves.

✓ *There is no packaging cost but it should be remembered that the outer leaves are often thrown away before sale and thus there is a cost in terms of product loss.*

➡ **Packaging serves three basic purposes.**

- ❖ Firstly, it provides a **convenient way of handling and transporting produce**. Costs would certainly be much higher if everything had to be carried and moved without any form of packaging.
- ❖ Secondly, it provides **protection for the produce**. The efforts which are continually being made to improve bulk packaging are designed mainly to improve the protection offered rather than to increase the convenience of the packaging from a handling point of view.
- ❖ Finally, packaging can be used to **divide the produce into convenient units for retail sale and to make the produce more attractive to the consumer**, thus increasing the price at which it can be sold. The more sophisticated the packaging, the greater the cost.

❑ **Calculating packaging costs:** Assume that oranges are packed 20 kg at a time in wooden boxes which, with occasional repairs, can be used for 10 trips. A box costs \$10, repairs and cleaning during its life costs \$2 and each time transporting back the empty box to the producing area costs \$1.

❑ Then the packaging cost per trip is...

$[(\text{original cost} + \text{repairs}) \div \text{no. of trips}] + \text{transport when empty}$

➤ OR $(\$10 + \$2) \div 10 \text{ trips} + \$1 = \$2.20 \text{ per } 20 \text{ kg}$ and

$\$2.20 \div 20 \text{ kg} = \0.11 per kg

2. Transport costs

- ❖ Transport costs are incurred by farmers when they take their produce to the market and by traders as they move the produce down the marketing chain to the consumer.
- ❖ Sometimes transport costs are very obvious because they involve the direct payment by a farmer or trader to a truck owner or, in some cases, boat owner on a per piece basis.
- ❖ In other cases such costs are less direct, for example when the trader, or even the farmer, owns and operates his own vehicle.

❏ Calculating transport costs

- Assume that there are 40 m³ of spaces available in the truck to be used and that it costs \$500 to hire the truck. A container of 0.2 m³ holds 8 kg of tomatoes and a container of 0.4 m³ holds 10 kg of green peppers.
- Then the transport cost for tomatoes per container and per kilogram is...
$$\$500 \div (40 \text{ m}^3 \div 0.2 \text{ m}^3) = \$2.50 \text{ per container}$$
and
$$\$2.50 \div 8 \text{ kg} = \$0.3125 \text{ per kilogram}$$
- While the transport cost for green peppers per container and per kilogram is...
$$\$500 \div (40 \text{ m}^3 \div 0.4 \text{ m}^3) = \$5.00 \text{ per container}$$
and
$$\$5.00 \div 10 \text{ kg} = \$0.50 \text{ per kilogram}$$

3. Product losses

- If a trader buys one kilogram of produce from a farmer, how much of that one kilogram will he actually end up selling? And what will be the average price of what he sells?

➤ **Post-harvest losses of produce**, particularly fresh produce, can be quite considerable, both in terms of **quantity and quality** and considerably affect the selling price.

❑ **Calculating the cost of product losses**

➤ Assume that, at 10 percent loss levels, 1 kg of tomatoes purchased by the trader from the farmer results in 900 grams (0.9 kg.) available for sale to consumers. The trader buys tomatoes from the farmer at \$5 per kilogram and marketing costs are \$2 per kilogram for the tomatoes originally purchased. The selling price of tomatoes is \$8 per kilogram.

➤ Then the costs are...

1 kg purchased at \$5 per kg = \$5.00

1 kg packed and transported at \$2 per kg = \$ 2.00

Total Costs = \$7.00

Sales Revenue or \$8 x 0.9 kg = \$ 7.20

Thus the margin to the trader = \$0.20

➤ Below is an example of the more usual and wrong, method of calculation.

1 kg purchased at \$5 per kg = \$5.00

1 kg packed and transported at \$2 per kg = 2.00

10 percent losses or $\$5 \times 0.1 = 0.50$

Total Costs = \$7.50

Sales Revenue or $\$8 \times 1 \text{ kg} = 8.00$

Thus the margin to the trader = \$0.50

- The second calculation is clearly wrong because here the trader is seen to be obtaining revenue from produce which has already been "lost".

4. Storage costs

- Storage is carried out in order to extend the period of availability of a crop to a consumer.

- ❖ In the case of staple food crops long-term storage is, of course, essential. The harvest period may be just a few months **but the staple has to be consumed throughout the year.**
- ❖ Storage can be carried out by the farmer, the trader (or marketing board) or by the consumer.
- ❖ With regard to more perishable crops, storage can be used to extend what is often every short period of availability.

❑ **Calculating storage costs**

- 👍 Assume that a warehouse is hired for 120 days of the year at a total cost of \$600 and that the weighted average contents are 250 bags of potatoes.
- 👉 Then the storage cost is...

$$\$600 \div 120 \text{ days} = \$5.00 \text{ per day}$$

$$\$5 \div 250 \text{ bags} = \$0.02 \text{ per bag/day}$$

❑ **Calculating storage costs over time**

- 👍 Assume that a trader buys potatoes at \$10 per bag and keeps them in store for 4 months. To do this he has to borrow money at 12 percent per year.

☞ Then the cost of bank interest is...

$\$10 \times 0.03$ (12% p.a. over 4 months) = \$0.30 per bag

☞ Thus a realistic calculation of storage costs per bag for our consignment of potatoes is...

Storage charge for 120 days at \$0.02 per day = \$2.40

Interest charge of \$0.30 per bag = 0.30

Total cost per bag = \$2.70

5. Processing costs

➡ The transformation of a product from one form to another clearly involves costs associated with the operation of the processing facility.

➡ In calculating marketing costs, however, we need to consider **two other important aspects of processing costs.**

☑ Firstly, as with **product losses**; one kilogram of product purchased from the farmer cannot be compared with one kilogram of processed product sold to the consumer.

- We therefore need to ask, "how much will be sold to the consumer if one kilogram is bought from the farmer?"
- ☑ Secondly, there may be a by-product as a result of the processing and this by-product can often be sold. The value of the by-product must therefore be included in the calculations.
- ☐ Calculating processing costs
- Assume that a rice milling operation converts paddy at the rate of 70 percent (0.7) and has saleable by-products equal to 25 percent of the paddy weight. Processing costs per kilogram of paddy have been calculated at \$0.20 per kilogram on the basis of the mill's total annual costs divided by the number of kilograms of paddy processed. The buying price of the paddy was \$1.50 per kilogram and the by-products have a value of \$0.50 per kilogram.
- Then the processing cost per kilogram of paddy is...

One kilogram of paddy purchased = \$1.50

Processing costs or 1 kg x \$0.20 = 0.20

Total Costs = \$1.70

Less the by-product revenue of 1 kg x 0.25 x \$0.50 = 0.12

Break even selling price per kilogram of paddy = \$1.58

➤ Thus the break even selling price per kilogram of milled rice is ...

$\$1.58 \div 0.7 = \2.25

- It should be clear that calculation of marketing costs won't be easy as it is done in the above.
- There can be many intangible and other costs which can't be easily estimated.
- So inclusion of these cost values in the gross marketing margin to calculate the net margin will be a tedious work and may possibly result in inaccurate net margin values.
- So, Gross margins are usually considered for evaluating the benefit of the participants in the market chain.

2.6 Aspects of Marketing Efficiency

☑ Marketing Efficiency

- ✓ The meaning of marketing efficiency ranges from the seemingly **simple notation of the ratio of output to input** to the complex esoteric notation of the **maximization of total welfare** allegedly flowing from an economic meeting the conditions of the perfect market idea.
- ✓ However, efficiency of agricultural marketing refers to the **efficiency with which resources are used in marketing**, in terms of physical input and output ratios.
- ✓ An efficient firm or market **produces the maximum possible output from the input used**, given location and environmental constraints, and it **minimizes resources inputs for any given output**.
- ✓ Efficiency is an important **index of performance** of agricultural marketing.

- ➡ To state it as simply as possible, *marketing efficiency requires the existence of a marketing system having a structure of stages and firms within stages such that marketing costs are minimized*
- Efficiency is the ratio of outputs to inputs.
- The efficiency of a marketing system is measured in terms of **the level and/or costs to the system of inputs, to achieve a given level and/or quality of output.**
- Marketing inputs includes the resources necessary to perform the marketing functions.
- ➡ The marketing efficiency ratio can be increased in two ways.
 1. Any marketing change that reduces the costs of performing the functions **without altering the marketing utilities** would clearly be an improvement in marketing efficiency.
 2. Or, **enhancing the utility-output of the marketing process without increasing marketing costs** would also increase efficiency.
- *The movement of goods from producers to consumers at the lowest possible cost, consistent with the provision of the services desired by the consumer, may be termed as efficient marketing.*

- The usefulness of a particular method to estimating marketing efficiency mainly depends upon the purpose for which evaluation is being made.
- There are numerous ways of estimating the efficiency of agricultural marketing. The characteristics of performance vary based on the measurability and in the implicit weighting given to each by the society.
- However, **marketing efficiency is usually measured in two ways**, operational efficiency and pricing efficiency.

1. Operational Efficiency

➡ Operational Efficiency is defined as **the provision of goods and services at least cost and at a level of output**, or combination on inputs, which ensures that the **value of marginal product equals marginal factor costs**.

➡ *refers to the situation where the marketing costs are reduced without necessarily affecting the output side of the efficiency ratio.*

- ☞ The fundamental question in assessing the static operational efficiency of market and of marketing firms, are whether, **the level of output per combination of inputs are such that marginal revenues equate with marginal costs.**
- ❖ There are many **potential sources of operational inefficiency** including:
 - ♥ lack of incentives/motivation,
 - ♥ inadequate information,
 - ♥ marginal expertise /poor skill, capability, knowledge, and/ or
 - ♥ bottlenecks in input supply.
- ❖ Similarly, another common source of operational inefficiency in many **LDCs** is the **lack of standardized weights, measures, qualities and grades** that often makes visual inspection of products necessary.
- ❖ This not only increases the direct costs of buying and selling, but also **inhibits longer distance trade** and therefore increased geographical specialization in production.
- ❖ *Thus, both direct and indirect costs could be reduced if such standards were effectively instituted.*

2. Price Efficiency

➡ Concerned with the **ability of the marketing system to efficiently allocate resources and coordinate the entire food production and marketing process** in accordance with consumer directives.

➡ Prices fail to:

1. Fully represent consumer preferences
2. Direct resources from lower to higher-valued uses, and/or
3. Coordinate buying and selling activity.

2.7 Evaluating Market performance and Efficiency

❑ Marketing margin and cost

♣ **A marketing margin** may be defined alternatively as **a difference between the price paid by consumers and that obtained by producers** or; the price of a collection of marketing services that is, the outcome of the demand for and the supply of each service.

- The portion of the consumer's food dollar that goes to agricultural marketing firms is referred to as the **marketing margin**.
- This is **the difference** between what the **consumer pays for food**, and **what the farmer receives**.
- In a sense, the marketing margin is **the price of all utility-adding activities and functions performed by agricultural marketing firms**.
- A marketing margin is **the percentage of the final weighted average selling price taken by each stage of the marketing chain**.
- *The **margin must cover the costs** involved in transferring produce from one stage to the next and **provide a reasonable return** to those doing the marketing.*

☞ The size of market margins is largely dependent upon a combination of :

- (1) the quality and quantity of marketing services provided;
- (2) the cost of providing such services; and
- (3) the efficiency with which they are undertaken and priced

- For instance, a margin may result in little or no profit or even a loss for the seller involved depending upon the marketing costs as well as on the selling and buying prices .
- However, under competitive conditions, the size of market margins would be the outcome of the supply and demand for marketing services, and they would be equal to the minimum costs of service provision plus “normal” profit.
- Therefore, analyzing market margins is an important means of assessing the efficiency of price formation in and transmission through the system.

- Likewise, marketing margins were computed by applying concurrent method with the marketing margins (GMM) calculation formulas as:

$$GMMP = \frac{\text{Consumer Price} - \text{Marketing Gross Margin}}{\text{Consumer Price}} \times 100$$

$$TGMM = \frac{\text{Consumer Price} - \text{Producer Price}}{\text{Consumer Price}} \times 100$$

$$NMM = \frac{\text{Gross Margin} - \text{Marketing Costs}}{\text{Consumer Price}} \times 100$$

- Where.
- TGMM = Total Gross Marketing Margin
- GMMP = Gross Marketing Margin of the Producer
- NMM = Net Marketing Margin Where,
- GMMp is the producer's share of consumer price.

➤ Because of precise marketing costs are frequently difficult to determine in many agricultural marketing chains for the reasons that costs are often cash and imputed, the gross and not the net marketing margin is calculated.

➤ The producer's margin is calculated as a difference:

$$GMM_p = \frac{\text{End Buyer Price} - \text{Total Marketing Gross Margin}}{\text{End Buyer Price}} \times 100$$

➤ Where, TGMM is total gross marketing margin.

➤ It is useful to introduce the idea of producer's participation, “farmer's portion”, or “producer's gross margin (GMMP)” which is the portion of the price paid by the consumer that goes to the producer.

➤ The net marketing margin (NMM) is the percentage over the final price earned by the intermediary as his net income once his marketing costs are deducted. The equation tells us that a higher marketing margin diminishes the producer's share and vice-versa.

- ♣ It also provides an **indication of welfare distribution** among production and marketing agents.
- ♣ From this **NMM measure**, it is possible to see the **allocative efficiency of markets**.
- ♣ *Higher NMM or profit of the marketing intermediaries reflects reduced downward and unfair income distribution, which depresses market participation of smallholders.*
- ♣ An efficient marketing system is where the **net margin is near to normal or reasonable profit**.
- ➡ Table; - Price of Honey in the market channel

<i>Market chain participants</i>	<i>selling price</i>
Producers" price -----	3.26br/kg
Rural assemblers price-----	4.5br/kg
Wholesalers" price -----	5br/kg
Retailers" price -----	6br/kg
Consumers" price -----	6br/kg

$$GMM(RA) = \frac{\text{Assembler Price} - \text{Producer Price}}{\text{Consumer Price}} \times 100 = \frac{4.5 - 3.26}{6} \times 100 = 21\%$$

$$GMM(W) = \frac{\text{Wholesaler Price} - \text{Assembler Price}}{\text{Consumer Price}} \times 100 = \frac{5 - 4.5}{6} \times 100 = 8\%$$

$$GMM(R) = \frac{\text{Retailor Price} - \text{Wholesaler Price}}{\text{Consumer Price}} \times 100 = \frac{6 - 5}{6} \times 100 = 17\%$$

❖ Total Gross marketing margin = $GMM(RA) + GMM(W) + GMM(R)$
 $= 21\% + 8\% + 17\% = 46\%$

❖ Gross marketing margin of producers ($GMM(P)$) = $100\% - 46\% = 54\%$

❖ So from the above calculation, it is clear that 21%, 8%, 17% and 54% of the final consumers price is shared by rural assemblers, wholesalers, retailers and producers respectively.

❖ However it is evident that market participants in a given market chain **do not only get profit from the transaction.** *They also incur a cost in the marketing activities*

CHAPTER-THREE

Agricultural Product Prices

- ❑ Agricultural price analysis plays a more important role in countries predominantly depending on agriculture.
- ✓ Prices of farm products fluctuate more than those of industrial goods.
- ✓ Changes in agricultural prices affect incomes and standard of living of farmers, rural laborers, and the non-farming population.
- ✓ They also affect the prices of non-farm goods and foreign trade.
- ✓ Price analysis is a sine-qua-non for many policy decisions and has to be a continuous and never ending process, because the causes, instruments and consequences of price changes constantly move in seemingly unpredictable patterns.

❑ Price analysis is necessary for the following reasons:

1. Testing old and establishing new principles of value and price:
 - ✓ Testing old theories and refining or modifying them is done by establishing the relationship between prices and other parameters like demand.
2. Explaining the relationship between current prices and other variables:
 - ✓ To identify the factors responsible for price variations in any commodity at a point of time, its fluctuations and movement pattern.
3. Forecasting price and Other variables:
 - ✓ Price analysis helps in forecasting the price of commodities

based on the present trends and other variables.

- ✓ These **forecasts help taking decisions** on whether agricultural production should be stepped up or imports/exports allowed.
 - ✓ Advance actions on these fronts ensure that the **economy proceeds in the right direction** and different economic problems are managed or avoided.
4. **Analyzing effects of alternative policy proposals:**
- ✓ Impact of different policy proposals (such as price support, input subsidy, introduction of restriction on movement of goods) **on the income of farmers, traders and business groups** can be found out by price analysis.

❑ Economics of price stabilization:

➡ Why price stabilization?

- Agricultural households in developing countries face a variety of **price, production, and marketing risks**.
- ✓ In the absence of appropriate risk mitigating institutions, exposures to these risks can have **direct consequences on the farmers, consumers, and overall economic growth**.
- ✓ To understand the implications of this statement, consider the consequences of price instability to poor urban consumers, farmers, agricultural workers, and on the overall economy.
- ✓ International experiences suggest that poor households spend about 70 percent of their income on food; and the rest on

cloths, shelter, schooling and other essentials.

- ✓ *Suppose a typical household in rural Ethiopia earns 300 Birr a month, of which the household spends 210 Birr (70 percent) on teff (about a quintal) and the rest (90 Birr) on other things.*
- ✓ *Now, suppose **teff price suddenly doubles** (remember price increases during January – February this year!).*
 - What will happen to this household?
 - 1. The household's food budget, 210 Birr, **can now only buy half a quintal of teff**
 - ✓ **consumption goes down**
 - 2. Half a quintal of teff is not enough. So **the household cuts down other expenditure**. What does that mean?

a. Take out their children from school

✓ kids miss their chances of escaping poverty.

b. Cannot go to a doctor if someone in the household is sick

✓ loss of income

✓ further severity in poverty. In extreme cases, income earners die of the sickness

✓ the whole household is trapped in poverty!!

➤ Commodity price instability discourages investments and encourages subsistence farming, which in turn creates investment disincentives and leads to inefficient resource allocation.

➤ What do we mean by this? Consider the following examples:

1. Suppose a farmer has options of cultivating **two crops** one of which is **less risky and less productive**; and the other is **more risky** (cost of cultivation is high and prices are more unstable) and **more productive**.

■ Also, suppose there is now insurance market in the country.

➤ *How is this farmer likely to allocate his land?* It depends on a lot of factors, but let's consider the following example:

a. *Farmer takes the risk and allocates all of his land to more risky crop*; and borrows money to buy modern inputs with a hope that he would be able to pay it back after harvest.

✓ **If prices are stable as expected, the farmer is a winner.**

✓ **But if prices collapse, he will not be able to recover his costs.** What does that mean?

i. Sell his lands or other assets

✓ poorer next year

ii. His neighbor will observe this and they will not invest in this new technology

iii. Back to low productive agriculture.

2. *The farmer is risk averse and allocates most of his land to less risky crops* and allocates the rest to high productive crops.

➤ What does this mean for the economy?

❖ The consequences of price instability on agricultural workers are similar to urban consumer, but there is an important difference, that is, urban consumers usually have a steady income.

- But the income of an agricultural worker depends on the performance of agriculture.
- Suppose **Ethiopia is hit by a big draught** and most of the crops are destroyed. What will happen?
 1. **Labor demand will go down**
 - ✓ there won't be enough jobs for the workers
 2. **The workers who do not find jobs will starve**
 - ✓ nutritional status will decline
 - ✓ less likely to find job next year.
 3. **All the consequences listed under the consumer**

- The economy is the sum of what consumers, producers, and workers do.
- If a large share of an economy is agriculture, what happens in agriculture will effect overall economic growth.
- In Ethiopia, agriculture accounts for about 65 percent of the economy, 85 percent of total employment, and about 80 percent of export earnings of the country.
- *Thus, if price instability reduces labor productivity, impedes human capital development, and creates disincentives, this will reduce overall growth of the country.*

❑ What Causes Price Instability?

- Instability in agricultural prices can be triggered by a number of factors and these can be grouped into three major categories: (i) agro-climatic factors, (ii) lack of infrastructure and institutions, and (iii) global market phenomena.

❑ Agro-Climatic Factors

- It has been amply demonstrated that *yield variability translates into price variability; and the more a country's agriculture depends on weather the more is the variability in yields and hence the prices.*

❑ Infrastructure, Information, and Institutions

- Price of any given commodity is the final *outcome of an exchange process;*

- price of a commodity can be *right only if the process of exchange is right*.
- *Three critical determinants of an efficient process of exchange are infrastructure, institutions, and flow of information.*

❑ **Volatility of World Food Market**

- world market of staple food has been thin, highly volatile, and heavily influenced by agricultural policies in the developed countries.
- high variability in world prices can transmit to the domestic markets and worsen price instability
- sudden increase in food import may lead to worsening of balance of trade, causing devaluation of the currency, and making import more expensive in local currency

- The other factor that can contribute to food price instability in Ethiopia is **food aid**. Ethiopia continues to be one of the largest recipients of food aid,

3.1. Characteristics of Agricultural Product Prices

❑ The major characteristics of agricultural products price are:

1. The high cost of price volatility:

✓ prices of many agricultural commodities remain highly volatile.

2. price taking environment- supply and demand determine prices; producers accept these prices when they sell, and consumers accept these prices when they buy.

3. price augmentation;

4. Price is a signal for production and consumption.

5. Government can play a large role in affecting prices in agricultural markets.

- *Prices of agricultural commodities can be expected to decline relative to industrial products as technological advances reduce costs* and make it possible, at given prices, to expand production at a rate that outstrips both population growth and increases in demand spurred/rise by rising incomes.
- Prices of some commodities have also been driven lower by oversupply, fuelled by intense global competition in production, reduced transportation costs and new technologies that have increased productivity and introduced synthetic alternatives to some commodities.
- In some cases, the emergence of major new producers has also affected market balance

- Export subsidies and subsidies to producers in some developed countries have pushed down world prices for many agricultural products grown in temperate zones, reducing the export earnings of developing countries that export commodities such as cotton, sugar and rice.

❑ **The high cost of declining prices:**

- Most agricultural commodities have experienced a downward trend in real prices, and the long-term forecasts are not encouraging.

- ☑ Knowing and predicting future prices is very important (but extremely hard to do).
- ☑ Prices convey an immense amount of information to consumers and producers:
 - ❖ Signal the demand for products.
 - ❖ Signal the supply of goods.
 - ❖ Allow for the coordination of demands for and supplies of goods.
 - ❖ Provide an incentive to act on the available information.

3.2. Structural Change and Shifts in Supply and Demand

❑ Supply and demand

❖ Supply

- ✓ *refers to the entire schedule of quantities of a product that firms are willing to produce and sell at alternative prices.*
- ✓ the law of supply states that, ceteris paribus, the higher the price of a commodity, the more will be offered for sale.
- ✓ Whereas, **demand indicates the relationship between quantities and price from the buyer's viewpoint**, **supply indicates a similar relationship from the seller's viewpoint.**
- ✓ when supply is used in the economic sense, it always represents a series of price – quantity relationships. supply curve

- The quantity that producers supply is affected by a number of factors, the most important being;
 - ✓ The price of the good/product in the market
 - ✓ The price of inputs/cost of production
 - ✓ Technological factors
 - ✓ The climate
 - ✓ How much was planted
 - ✓ Imports
 - ✓ Storage possibilities
 - ✓ The lower the price, the less will eventually be supplied(because less will be produced)

❖ Demand

- ✓ *Demand is a schedule of different quantities of a commodity that buyers will purchase at different prices at a given time and place.*
- ✓ The law of demand states that, ceteris Paribus, as price increases quantity demanded decreases and as price decreases quantity demanded increases.
- ✓ Demand indicates the differing amounts that will be purchased at differing prices, and not simply the amounts needed by purchasers.
- ✓ The demand that is important in marketing is Effective Demand- the desire of the consumer for the commodity backed up by purchasing power.

- ✓ The demand for most of the agricultural products is **Derived Demand** – the demand level for agricultural products is **caused by the level of demand for the final products made from it.**
- ✓ In agriculture, there exists a **Reservation Demand** - sellers of agricultural products may **reserve some part of their supplies for their own consumption or for latter sale.**
- ✓ **A farmer's reservation demand is influenced by:**
 - present and expected market prices,
 - product perishability,
 - urgent cash need of the farmer,
 - on farm uses of the product and
 - the availability of storage space.

➤ *For agricultural produce the quantity that consumers want and purchase is affected by a number of factors, the most important being the:*

- 1. Price of the good.*
- 2. Taste and preference of consumers*
- 3. Number of consumers*
- 4. Incomes of consumers*
- 5. Price of related goods (competition)*
- 6. Range of goods available to consumers*
- 7. Time of the year*

3.3. Price Discovery in Agricultural Markets

- ***Dear students!!! Please refer what you have learnt in chapter two concerning price discovery.***

3.4. Measuring Changes in the General Level of Prices

- Economic theory suggests that producers and consumers in the market will organize purchase transactions in such a way that an equilibrium will result.
- That is, a single quantity (representing aggregate transactions of buyers and sellers) will be transferred at a single price.
- An economic equilibrium occurs in a market that “clears,” that is when a price has been attained where the amount supplied of the product equals the amount demanded.
- At equilibrium, supply price equates demand price and supply quantity equals demand quantity

- Market equilibrium explains the balance/stability b/n demand and supply for a commodity.
- In this case, it occurs when the quantity demanded equals the quantity supplied over a time period (I.e. $Q_d = Q_s$).
- The terms supply and demand do not mean the amount of goods and services actually sold and bought; in any sale the amount sold is equal to the amount bought, and such supply and demand, therefore, are always equal.
- *In economic theory, supply is the amount available for sale or the amount that sellers are willing and able to sell at a specified price, and demand, sometimes called effective demand, is the amount purchasers are willing and able to buy at a specified price.*

- Therefore, when quantity of a good supplied is exactly equal to the quantity demanded, then the market condition is said to be in equilibrium.
- Geometrically, equilibrium occurs at the point of intersection of the commodity's market supply and market demand curves.
- *The price that equates the equilibrium quantity supplied and demanded is said to be the 'market equilibrium price' of supply and demand in a market for a good or service.*
- **Market Equilibrium Price;** - is the price level where quantity demanded is equal to quantity supplied. It is also called market clearing price because all the commodities provided for market are sold in the market since the demand is there.

- Algebraically, equilibrium occurs at a point where demand and supply functions are equal.

Example: if Demand function:

$$D_x = 100 - 14P_x$$

Supply function:

$$S_x = 28 + 10P_x$$

- Try to solve equilibrium price and quantity!

- In practice, it may be difficult to find all other factors constant & market remains in the disequilibrium.
- The prevalence of surplus or shortage of a commodity in the market is a characteristic of disequilibrium condition.
- **Surplus (excess supply):-** exists in a market when the quantity supplied of a commodity exceeds the quantity demanded ($Q_s > Q_d$) over a given period.
- This a condition that occurs when the good's price is above the equilibrium price and then the quantity supplied exceeds the quantity demanded.

- **Shortage** (excess demand):-prevails in a market when quantity demanded of a commodity exceeds the quantity supplied ($Q_d > Q_s$) over a given period.
- This condition is observed when the good's price is below the equilibrium price and then the quantity demanded exceeds the quantity supplied in the market.

- For ex., if the inverse market demand and supply curves are represented mathematically as $P_d = 6 - 0.3Q$ and $P_s = 1 + 0.2Q$ respectively, then the equilibrium quantity and price will be 3 and 10 respectively.
- The notion of a static economic equilibrium assumes that perfect information about prices and quantities are available to all sellers and buyers.
- Adjustments are made instantaneously.
- Of course, this is a simplification of the way the real world works, but is useful to describe the behavior of the market, and its likely responses to changes in policy.
- Note that the equilibrium is a descriptive concept.

- A normative meaning, or value assessment, should not be assigned to it. For ex., a market may be in equilibrium and yet people may be starving. Whether a market in equilibrium is a good or bad thing is a subjective judgment of a political nature.
- Thus, market equilibrium occurs at the price – quantity combination that maximizes the sum of the CS and PS. This sum is called the “quasi- welfare.”
- In practice, consumer and producer surplus are not measured in isolation but rather jointly in a partial equilibrium framework.
- Most policy interventions affect both the supply side and demand side of a market.

- They may also affect input markets, and the markets for closely related commodities. In the case of staple cereals, for example, this means substitutable commodities, such as teff and maize.

[Market equilibrium](#)

	NO CHANGE IN SUPPLY	AN INCREASE IN SUPPLY	A DECREASE IN SUPPLY
NO CHANGE IN DEMAND	P same Q same	P down Q up	P up Q down
AN INCREASE IN DEMAND	P up Q up	P ambiguous Q up	P up Q ambiguous
A DECREASE IN DEMAND	P down Q down	P down Q ambiguous	P ambiguous Q down

- **Short-term price fluctuation**

- The main causes of short-term price changes of fresh products are:
 - ✓ The amount of produce on sale in the market on a particular day and the quantities sold in the previous few days.(quantity available)
 - ✓ Short-term demand changes
 - ✓ The affect on demand of prices of competing prices (competing products)

- **Long-term price changes**
- The main factors which influence long-term market price developments for agricultural products are:
 - ✓ Supply
 - ✓ Demand
 - ✓ Time of the year

3.5 Measuring impact of price changes

– Elasticity and its implication in demand and supply

- Elasticity is a measure of sensitivity or responsiveness of consumers and producers (sellers) to changes in various variables such as price and income.
- the relative change in an economic variable, e.g. demand that occurs in reaction to changes in other variables, e.g. price or advertising input
- The owner of a business may not be able to find the influence of the variables that affect the demand for his product by using only the demand function. In other words, **it is not enough for the business owner to know only the inverse relationship b/n price and quantity demanded but he also should know the effect of changes on price or his income.**

- Elasticity in the case of demand is, therefore, the percentage change in quantity demanded resulting from a unit percentage change in demand factor.
- The common types of elasticities are:-
 - ✓ Price elasticity of demand (E_d)
 - ✓ Price elasticity of supply (E_s)
 - ✓ Income elasticity of demand (E_m)
 - ✓ Cross price elasticity of demand (E_{xy})

❑ Price Elasticity of Demand

- is how the level of demand for its product will change in response to a price change.
- Differences in measurement of units of quantities and prices among the commodities and across economies create difficulties in using slopes for comparisons of responsiveness of quantity demanded to price changes.
- Therefore, the need arises to find a measure of this responsiveness that does not have units.
- Price elasticity of demand (e_d) measures the degree of responsiveness of quantity demanded of a commodity to a change in price of the commodity.
- It is the ratio of the percentage change in quantity demanded to the percentage change in price.

- Empirically it is expressed as:

$$ed = \frac{Q1 - Q2}{P1 - P2} \times \frac{P1 + P2}{Q1 + Q2}$$

- ➡ The sign of the price elasticity of demand is always negative.
- ❖ If the absolute value of the price elasticity of demand is **greater than one**, the commodity is said to have an **elastic demand**. That is, a 1% change in price will cause a more than 1% change in quantity demanded.
- ❖ If it is **less than one**, then the commodity of interest will have an **inelastic demand**. That is, a 1% change in price will cause a less than 1% change in quantity demanded.
- ❖ If it is **one**, the commodity is said to have a **unit elastic demand**. That is, a 1% change in price will cause exactly a 1% change in quantity demanded.

- There are two polar cases of elasticity.
- ✓ When e_d is equal to **zero** it represents a **perfectly inelastic** demand i.e. quantity demanded does not change at all in response to price changes.
- ✓ And in another case when e_d is equal **to infinity** it represents a **perfectly elastic demand**, in that consumers will purchase all they can at a particular price but none of the product at all above the price

- **Factors Affecting Elasticity**

- The price elasticity of demand varies among products and from time to time depending on several factors.
- The main factors affecting the magnitude of price elasticity of demand are:
 - ✓ availability of substitutes,
 - ✓ the number of uses to which a commodity can be used, the proportion of income spent on a particular product,
 - ✓ the length of adjustment period,
 - ✓ the degree of commodity aggregation, and
 - ✓ whether the product is a necessity or a luxury commodity.

❑ Supply Elasticity Concept

- The price elasticity of supply (e_s) measures the responsiveness of quantity supplied to a change in price.
- It is the ratio of the percentage change in quantity supplied to the percentage change in price.
- Empirically it is expressed as:

$$e_s = \frac{Q_1 - Q_2}{P_1 - P_2} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$

- The sign of the price elasticity of supply is always positive.
- ✓ If the value of the price elasticity of supply is greater than one the commodity is said to have an elastic supply. That is, a 1% change in price will cause a more than 1% change in quantity supplied.

- ✓ If it is less than one, then the commodity of interest will have an inelastic supply. That is, a 1% change in price will cause a less than 1% change in quantity supplied.
- ✓ If it is one, the commodity is said to have a unit elastic supply . That is, a 1% change in price will cause exactly a 1% change in quantity supplied.
- ✓ There are two polar cases of elasticity.
 - When e_s is equal to zero it represents a perfectly inelastic supply i.e. quantity supplied does not change at all in response to price changes.
 - And in another case when e_s is equal to infinity it represents a perfectly elastic supply, in that firms will produce and sale all they can at a particular price but none of the product at all below the price.

Determinants of price elasticity of supply:

1. **Length of production period:** in shorter period, price elasticity of supply is inelastic and in longer period, price elasticity of supply is elastic.
2. **Accumulation of stock:** in a place where there are warehouses or storages to accumulate stock, E_s is elastic.
3. **Factor substitution:** if there exists more substitutes of factors of production, then the price elasticity of supply is elastic and if no factor substitutes, it is inelastic.
4. **Number of firms in the market:** if large number of firms exists in the market, then E_s is elastic and vice versa.

CHAPTER-FOUR



Market Structure-Conduct-
Performance Analysis

The Structure –Conduct-Performance paradigm

- ❑ The S-C-P approach was first developed in 1940s and 1950s developed in the United States as a tool of analyses the market organization of the industrial sector, which was later applied to assess the agricultural marketing system.
- ❑ It is the analytical approach used to study how the structure of the market and the behavior of sellers affect the performance of markets.
- ❑ The S-C-P approach analyses the relationship between functionally similar firms and their market behavior as group; and provides a broadly descriptive model of the nature of various sets of market attributes; and the relationship between them and the performance of the market.

- ➡ Its basic tenet/principle is that, “given certain basic conditions”, the **performance of particular industry depends on the conduct** of its sellers and buyers, which in turn is **strongly influenced by the structure of the relevant market.**
- ➡ Industry performance depends critically on firm conduct
- ➡ Conduct depends on market structure
- ➡ **Hence, structure determined conduct and conduct determined performance;**
- ➡ **This implies that structure determined performance**
- ❖ Therefore, Structure-Conduct-Performance (S-C-P) Approach has **three elements:**
 - ✓ market structure,
 - ✓ market conduct,
 - ✓ market performance

4.1. Market structure analysis

- ❑ *It refers to the size and design of the market, characteristics of market which affect the traders' behavior and performance, organizational characteristics which influence nature of competition and pricing, etc.*
- ❑ Feature of environment that influence the behavior and rivalry among the buyers and sellers operating in the market
- ❑ If market is characterized by high barrier to entry it may result in only few traders profitability
- ❑ These few traders may engage in non-competitive behavior such as collusion, exclusionary or predatory price setting behavior.

Components of market Structure:

- ✓ Concentration of market power
- ✓ Degree of product differentiation
- ✓ Condition of entry of firms in the market
- ✓ Flow of market information
- ✓ Degree of integration
- Major structural elements for critical performance analysis are:
concentration, barriers to entry, vertical coordination/integration.

❑ Concentration

- The degree of concentration of sellers and buyers refers to the **number and size distribution of these firms** in relation to the size of the market.
- ❖ **Concentration ratio:** shows the **proportion of the industry's output accounted for by r large firms**. The most studies in industrial organizations used the first four largest firms ($r = 4$) and only few studies used the first eight largest firms ($r = 8$)
- ❖ **Herfindall- Hirschman Index:** **is the sum of squares of the market shares of each of the firms in the industry**. It is preferred measure of concentration, however, its data requirement demand firm level data for all individual firms in the industry.
- It is also noted that **squaring gives more weight to larger firms**.

- ❖ **Gini-coefficient:** it measures the size of firms ranked from the largest as a percentage of the number of firms in the market, plotted against the cumulative output of these firms.
- GC is usually defined mathematically based on the Lorenz curve, which plots the proportion of the total share of the traders (y- axis) that is cumulatively shared by the bottom X% of the traders.

❑ **Barriers to entry:**

- Barriers of entry or freedom to entry into and exit from the market, refers to the conditions for entry of new firms into the market.
- Difficulties or the ease with which an individual can join and leave business is important to a competitive market structure.

- ❖ This may refer to the process of setting a license or professional qualifications or skills or to the need of having a minimum amount of capital or other resources in order to operate successfully.
- ❖ Lack of available capital could effectively restrict entry of new firms if large initial outlay is required.
- ✓ *Economies of scale*
- ✓ *Product differentiation (brand loyalty)*
- ✓ *Capital requirement..for competition*
- ✓ *Switching costs*
- ✓ *Access to channel of distribution....needs price discounts, promotion*
- ✓ *Government policy...licensing...limits to access to raw materials, pollution standards, product testing regulation, etc*

- ☞ Consider one agricultural commodity in your area and assess the barriers of entry in the marketing of this product.

☐ **Vertical coordination/integration**

- How are members of the industry **linked to other levels of the market chain?**
- If farmers sell their products **in terminal, spot or auction markets, they obtain better prices.**
- Farmers deliver commodities to spot markets but fail to sell when there are few buyers
- ☞ Consider one agricultural commodity in your area and analyze the structure of the market using these indicators.

4.2. Market conduct analysis

- Refers to the **patterns of behavior of firms**, especially in relation to **pricing** and their practices in **adapting and adjusting to the market** in which they function.
- The behavior, that firms pursue in adopting or adjusting to the market in which they sell or buy.
- The major aspects include ***pricing and selling policies and tactics, over and tactic inter-firm co-operation, or rivalry, and research and development activities.***
- ❖ Specifically, market conduct includes:
 - ✓ *Market sharing and price setting strategies/policies*
 - ✓ *Policies aimed at coercing rivals, collusive behavior, mergers;*
 - ✓ *Policies towards setting the quality of products.*

- The specific structure features of atomistic numbers, homogenous product, and free entry and exit require a form of conduct such that each firm must operate as if in isolation.
- *The market behavior of firms will determine **whether or not they compete and whether they are acting innovating to improve market efficiency.***
- Informal association between even a small numbers of firms (collusion) can cause price, output, production, selling cost, product design, and so forth.

❑ Pricing strategies

- Who sets price? How are prices determined?

✂ **Price discrimination:** where firms are selling the same

product at **different prices** for different customers

✂ **Price fixing:** where market structure does **not allow sellers to sell products at prices below listed prices.**

✂ **Predatory pricing:** allow products to be sold at **prices below production costs.**

- The main purpose of these strategies is to acquire market share, thus monopolistic profits.

☐ **Mergers**

- ✓ **Horizontal mergers:** when firms in the **same industry** combine
- ✓ **Vertical mergers:** combine at **different stage of production** process
- ✓ **Conglomerate mergers:** combine **unrelated firms**

❑ Collusive behavior

- Situation where **firms jointly set prices and outputs** as well as **sharing the market** amongst them
- **Working together /cooperate to raise prices and restrict output**
- ❖ Analyze the market conduct of one of agricultural commodity in your locality using the above indicators.

4.3. Market performance analysis

- The recognition and awareness about the positive impact of agricultural markets on the economic development evokes the necessity for analytical tools that performance and efficiency of the agricultural marketing system.
- Thus to study the performance of the entire marketing system, we need to develop some indicators of performance.
- *Marketing performance is defined as how well the food marketing system performs what society and market participants expect of it.*
- **Evaluating the marketing performance raises the questions like:**
 - ✓ what do we expect of the food marketing system?
 - ✓ Is it competitive?

- ✓ Are price fairly determined?
- ✓ How does it serve Farmers and consumers?
- ✓ Could its performance be improved? etc.
- Refers to **the efficiency of market structure**; some of criteria for measuring market performance:
 - ✓ **Efficiency in use of resources**, including real cost of performing various functions
 - ✓ Relationship of **margins with average cost** of performing various functions
 - ✓ **Dynamic progressiveness of the system** in adjusting the size of and number of firms in relation to the volume of business, in adopting technological innovations

- Problems of inequalities in inter- personal, regional or inter-group incomes
- It refers to *the extent market result in outcomes deemed good or preferred by society*:
- ✓ *Regular and predictable availability of basic commodities at affordable prices*
- ✓ Traders do not obtain excessive profits and commodities meets certain sanitary standards
- ✓ Consumer prices should not exceed above cost of marketing, processing and transaction cost
- ✓ Prices received by producer should cover their cost of production

➤ *Price levels and stability (long run, short run and through space), profits, margins and costs, volumes, product quality and variety and distributions within the market are some indicators of market performance.*

○ Consider one agricultural commodity in your area and analyze the performance of the market?

□ The principal effects aspects of the market performance are:

1. *The relative technical efficiency of production* so far this is influenced by the scale or size of plants and firms (relative to the most efficient), and by the extent, if any, of excess capacity;

2. The selling price relative to the long-term MC of production and to the long-run AC of production (usually about the same as long run MC), and resultant profit margin;
3. The size of industry output relative to the largest attainable, consistent with the equality of price and the long-run MC;
4. The size of sales promotion costs relative to the costs of production;
5. The character of product, or products including design, level of quality, and variety; and
6. The rate of progressiveness of the industry, both products and technologies of production relative to the rate which is attainable and also economic in view of the costs of progress.

- The above dimensions of marketing performance such as technological progressiveness, efficiency of resource use and product improvement and maximum market services at the least possible cost must fit with goals of the agricultural marketing system in developing countries.
- Due attention should be given to their interrelatedness between the categories of structure, conduct, and performance in studying agricultural marketing efficiency.

Application of Market Classification:

- ❑ Theory of structure-conduct-performance of market forms or structures have provided knowledge of firm behavior as shown in Table below.

A. Pure Competition: In the structure of pure competition, **firms are numerous** with **small size** such that **no one firm can influence market outcome**. Products are **homogeneous** or standardized and **entry is easy**.

- ✓ As a consequence, each firm is driven to **minimize costs**. Earnings are held at competitive levels and operations are at output levels where **average costs are minimum**.
- ✓ **Technology advance** comes from outside the structure – e.g. in agric it's from **public sector research**. The pure competition also requires **perfect knowledge** on current and future market conditions.

B. Monopolistic Competition: It combines element of monopoly and pure competition and has performance results form each structure –found more in retail structures.

- ✓ Firms are **numerous**; **entry easy** and products are **differentiated** as a result the demand curve for the firm's products slopes downwards.
- ✓ Competition drives demand down where unit costs are barely covered, so no excess profits prevail.
- ✓ That point occurs at output levels higher than the lowest point on average cost curve. Thus there tend to be excess resources tied up in this structure.

❑ Table: Structure-Conduct-Performance Associated with Market Forms

	Market forms			
Behavior/ Attributes	Pure competition	Monopolistic competition	oligopoly	Monopoly
<u>Market structure</u>				
No. of firms	Numerous	Numerous	few	One
Entry condition	Easy	Easy	Moderate	Blocked
Product differentiation	Undifferentiated	Some differentiation	Variable	Unique product

	Market forms			
Behavior/ Attributes	Pure competition	Monopolistic competition	oligopoly	Monopoly
<u>Market conduct</u>				
Recognition of interdependence	Unrecognized	Unrecognized	Recognized	None
Optional strategies	No	No	Yes	Yes
<u>Market performance</u>				
Technical efficiency	High	Moderate	Variable	Variable
Progressiveness	Low	Low	Variable	Variable
Earnings	Normal	Normal	Above normal	Above normal

Chapter - Five

Price Integration Application of Market Classification

5.1. Temporal Price Variation

- Due to the **seasonality of production**, prices are normally expected to **be low during the harvest season** and to **rise afterwards up to the next harvest** as a function of costs of storage.
- Under competitive situations, the **seasonal price differences should be equal to the storage costs** incurred between the time of harvest and the subsequent points in the year.
- Thus, it is assumed that grain is allocated throughout the year by the relationship of **current and expected prices to storage costs** including direct costs of warehouse rent, labor, interest on capital invested in inventories, risk, and normal profit.
- If **seasonal price differences are below storage costs and normal profit**, this may indicate the existence of some degree of **inefficiency in storage**.
- In the absence of actual costs of storage, seasonal price differences could be compared with the **opportunity cost of capital invested** in inventories to serve as a rough indicator of storage efficiency.

Sources and measures of price variation

- Incompletely informed consumers who have to gather information before they buy a product.
- no homogeneity in production costs
- monopoly price prevails if there are search costs.
- price dispersion arises through cost differentials in the presence of search costs
- firms have heterogeneous cost structures and charge high loading fees both of which contribute to price differences
- the presence of heterogeneous consumers who vary in their abilities to identify the best policies in terms of price and other firm characteristics, such as financial strength

- Unable to find information
- difficult to understand how to make efficient use of the information once found
- **Seasonality of production** was found to be an important source of weaker market integration.
- The price farmers receive is rarely fixed and is **difficult to predict**.
- Positive Demand Shock: unexpected, **temporary increase in demand**
- Negative Demand Shock: unexpected, **temporary decrease in demand**
- Positive Supply Shock: unexpected, **temporary increase in supply**
- Negative Supply Shock: unexpected, **temporary decrease in supply**

5.2. Spatial Price Variation

- *Spatial price transmission or market integration (MI) measures the degree to which markets at **geographically separated locations** share common long-run price or trade information on a homogenous commodity.*
- Spatial price relationships generally refer to **the factors that cause prices in one area to change in relation to those in another.**
- These variables may be **shifts in demand or supply** or changes in the pattern of trade or **transfer costs.**
- It is, however, postulated that under **competitive market structure, spatial price relationships are largely determined by transfer costs** consisting of transportation, handling, fixed costs, and unmeasured transaction costs (e.g., the costs of time spent in identifying and negotiating transactions, risks associated with opportunistic behavior of trading partners, contract monitoring, enforcement, etc).

- The principle is that under competitive market conditions and in the absence of any trade barrier, the price differential that could prevail between trading areas is equal to transfer costs.
- The basis for this assumption is that, if regional price differences substantially exceed transfer costs, buyers would be motivated to buy and transport grain from low price areas to those with high price and this will eventually cause price in the supplying areas to increase and those in the importing areas to decrease to a level at which price differences no more exceed transfer costs.
- However, the comparison of costs and actual margins is difficult because of the unmeasured and perhaps immeasurable “transaction cost” portion of marketing costs, that is., the transaction and risk costs mentioned above.

- Nevertheless, some insights are possible simply by comparing observed price spreads with the measurable component of spatial transfer costs.
- **Spatial market integration**, which means interrelationship of price movements among spatially separated markets is one of the most important criteria of market performance.
- Common temporal forces like general inflation and common seasonality would affect prices in various regional markets in the same way.
- Perishable nature of agricultural products and lack of requisite infrastructure to reduce wastage during transportation might be the underlying reasons for such poorer market integration for agricultural products.
- Seasonality in these products were found to be one of the major source of lack market integration.
- Regional oversupply gives traders an incentive to move supplies to deficit markets and ensures an integrated system.

Market Integration

- ✧ Market liberalization in LDCs has renewed an interest in the working of agricultural markets as a source of income, employment and food security.
- ✧ The success of the reform in promoting and equity and efficiency is constrained by numerous structural deficiencies in local markets.
- ✧ One of the main consequences of these structural deficiencies **is poor market integration**, the difficulty with which information and trade flows among spatially separated markets.
- ✧ *Early studies define integrated markets as locations that have high price correlations (Harriss).*
- ✧ More recently, market integration has been interpreted as spatial locations connected by trade (Ravallion) or locations that have one-for-one price changes (Good-emwin and Schroeder).

- ✓ addressed the question of *how quickly prices adjust between pairs of locations*
- ✓ Higher degrees of market integration can have **important implications for economic development**.
- ✓ The process of **increasing the degree of integration of isolated markets**, or of locations that are only weakly integrated into a national market, can bring **significant benefits for local residents**.
- ✓ It can **raise the incomes of producers by permitting increased specialization and trade**, and it can **improve the welfare of risk averse consumers by reducing the variability of prices** for goods that were previously non-tradable.

✧ Knowledge about the extent of market integration is important for a number of reasons:

- By identifying groups of closely integrated markets and by knowing the extent of price transmission across different locations within a country, a **government may improve the design of its market liberalization policies**.

– Allows monitoring of price movements.

- The knowledge of speed of adjustment to shocks arising in different areas of the country is paramount to more effectively managing a price stabilization policy.

– Integration models can be used to forecast prices all over the country.

➤ By identifying the structural factors responsible for market integration, investment policy in the marketing infrastructure can be improved, because this allows policy makers to understand which kind of marketing infrastructure is more relevant to the development of agricultural markets in a country

➤ Performance and integration of markets are the results of the actions of traders and of the operating environment determined by the infrastructure available for trading and policies affecting the price transmission from one market to another.

- The conceptual framework addresses the following issues:
 - Concept and measurement of market integration: **what does it mean that markets are integrated? How is market integration measured? Etc.**
 - Relationship between *market integration* and *structural factors*.
- Three-stage approach is suggested
 - A study of the **marketing network**
 - Consideration of the **measures of integration**, and
 - Analysis of the **determinants of market integration**.

Necessary conditions to increase the degree of integration

- ❑ public investments in physical and human capital, such as roads or schools
- ✓ Physical determinants of market integration (distance, infrastructure, and production)
- ✓ human capital (higher levels of human capital should increase the productivity of activities related to the marketing of goods, and should facilitate the speed and accuracy of information flows within the market.)
- The two reduce transactions costs (the smaller the transactions costs that separate locations, the higher the degree of integration)

Measures of spatial market integration

❑ Price correlations:

- Measure **the co-movements of prices** that underlie the intuitive idea of market integration.
- *However, these co-movements sometimes can not be separated from long run time trends and seasonality effects.*
- More sophisticated methods aim at discovering if there is **a stable long-run linear relationship among prices in different localities**. If such relation is found, then these price series are said to be **cointegrated**.
- The presence of cointegration between two price series is indicative of interdependence between them.
- Assuming that the markets under consideration are integrated, policy makers are interested in knowing the **extent of this integration**.

- The **degree of integration** is then related to the process of **price transmission over time**.
- Within this dynamic adjustment process, it is possible to distinguish a short-run and a long-run transmission. This process leads to the **computation of magnitude and speed** (time lapsed in price transmission) of the adjustment.
- *Data on prices, transaction costs, and trade flows across spatially separated markets are needed to measure the degree of integration between these markets.*
- However, since price data are usually the most readily available and most reliable information on LDCs marketing systems, market integration is **often studied using only price data**.
- **This allows measuring the extent, not the causes of integration.**

Factors of spatial market integration

- ❖ In order to understand why (or why not) markets are integrated, we need to consider the factors that affect market integration.
- ❖ The most important factors include marketing infrastructure, government policy, dissimilarities in production, and supply shocks.
- ❖ **Market infrastructure:**
 - Includes transportation, communication, credit, and storage facilities that allow a smooth and reliable functioning of the markets.
- ❖ **Government policy**
 - There are numerous public interventions that affect the marketing system in addition to the price stabilization policy, such as trade restrictions, credit regulations, and transportation regulations.
 - On one hand, smoothing seasonal fluctuations enhances the co-movement of prices across markets; on the other, this very stabilizing process may hinder the transmission of price signals.

❖ Dissimilarities in production

- Affect market integration by dividing markets into those that generally have a **surplus in the commodity** under consideration, those that have a **deficit**, and those that are **marginally self-sufficient**.
- If a market i is a **surplus market** and market j is a **deficit market**, then the likelihood that **markets i and j are linked by trade** in the examined commodity is higher than if **both markets were surplus or deficit**.

• Supply shocks

- **Floods, droughts, diseases, and pest attacks** affect production directly by creating **localized scarcities**, whereas other shocks, such as **strikes**, **affect the transportation of goods**, making it very difficult for them to reach their final destination.

- Three stage approach

1. Market network description – the objective is to collect data on

- Number and type of participants in each regional market, as well as the volume of their transactions
 - Trade flows among different markets
 - Access to marketing infrastructure such as trucks, railways, river transportation, and telephones
 - Degree of access to price information by market participants
 - Degree of information concerning export promotion programs and structure of marketing costs.
- Results in a descriptive analysis of the market network and an intuitive notion of the main structural factors affecting market integration.

2. Time series analysis

- There are **various measures of integration** which are **derived from price time-series**.
- **Correlation and co-integration coefficients** explicitly capture the price co-movement aspect of market integration.
- **Long-term multipliers and composite indices** capture the dynamic aspect of price integration.

Correlation coefficients

- **Correlation of price series** at different markets is related to the idea that **integrated markets exhibit prices that move together**.
- Due to its simplicity, **correlation analysis remains the most common approach to measuring market integration**.

- *Parallel movements in prices can occur for several reasons other than the integration of markets.*
 - For instance, they can occur because of the common influence of **inflation** on both the examined price series, or because the same seasonal influences are present in both markets.
 - This is especially true for agricultural commodities where peak and deficit seasons often take place at the same time.
- In order to eliminate some of these **spurious correlations**, price differences instead of price levels are sometimes considered in computing correlation coefficients.
- In addition to the problem of **spurious correlation**, there are other serious problems related to the often **non-stationary** nature of the price series involved.

- **Cointegration Coefficients**
- Is an econometric technique that allows the **identification of both degree of integration and its direction** between two markets.
- Regional prices move over time because of various shocks. If in the long run they exhibit **a linear constant relation, then we say that they are cointegrated.**
- To use the **cointegration procedure**, some steps need to be carried out on the price series under examination:
 - First the **Augmented Dickey Fuller test**
 - Second the **Engle Granger Two-Step Procedure**.
 - Both procedures are easily accessed from **standard statistical packages.**

- If the ADF tests prove that the two price series are integrated and co-integrated, then price changes in one market are useful to predict price changes in the other market.
- The existence of co-integration therefore implies that there is some market integration and it helps to explain its direction.
- In order to study the interdependence of prices between any pair of markets i and j , examination has been suggested if there is any relationship among the price series in the two markets, such as the one expressed by a linear relation:

$$P_{it} = \alpha + \beta P_{jt} + u_{jt}$$

Price rigidities

- Underlying the intuition of a well-integrated marketing system is the capacity to transmit price changes across different localities.
- One important characteristic of this capacity is its flexibility.
- **Flexibility** of the price transmission mechanism can be specifically interpreted in terms of **the symmetry of price adjustment**.
 - It is sometimes claimed that **only price increases are transmitted to consumers**, whereas **traders are the main beneficiaries of price decreases**.
 - *If the market system were well integrated, then price increases should be transmitted to the same extent as price decreases.*
- This is an issue related to the **rigidity of price adjustment** in the marketing chain.
- In order to explore this issue, the framework of market integration can be extended by incorporating asymmetric price responses.
- Evidence has been presented that **price responses are asymmetric**, with the common claim that **retail prices reflect cost increases more rapidly than cost decreases**.

Factors of integration

- **Market integration**, however measured, is the result of **the action of traders**, as well as the **operating environment** determined by the **infrastructure available for trading and policies affecting the price transmission**.
- All the measures of integration considered so far have in common the feature of being computed using only price information available in a specified period of time.
 - Each market link is summarized by just one number.
- However, markets are complex institutions and their **performance as well as their integration is the result of numerous factors**

Factors of integration

- Among these factors, **marketing infrastructure, price stabilization policies, the degree of dissimilarity in production in different areas, as well as supply shocks,** are important explanatory factors of market integration.
- To test hypotheses concerning the **effect of structural factors** on market integration one needs to **specify the explanatory variables** mentioned above
 - **Marketing infrastructure** includes transportation, communication, and credit. These variables are expected to influence market integration positively.
 - **Price stabilization policy**
 - In order to **test these hypotheses**, it is necessary to get an **index of the degree of price stabilization policy undertaken by a government** in various affected areas.
 - One simple way to do this is to **consider the correlation between prices and end-of-period public stocks.**
 - This correlation is expected to be negative and its absolute value is taken to be indicative of the degree of price stabilization policy.

- **Production** affects market integration through the degree of dissimilarity in self-sufficiency of various markets.
 - If market i is a surplus market and market j is a deficit market in the commodity under consideration, then the likelihood that i and j are linked by trade is higher than if both markets were surplus or deficit areas.
 - The degree of dissimilarity is usually measured by the absolute value of the percentage difference in production per capita.
 - Another variable related to production is the number of production shocks affecting various districts.
- The effect of these shocks on market integration is not clear a priori.
- When the production shocks are of a tremendous magnitude, one would expect market integration to be disrupted. In the case of normal production shocks, they may even positively affect market integration, in so far as they add incentives to trade between affected areas and other areas.

Thank You!!!