Institute of Natural and Life Sciences

Production Végétale / Semestre 6 / Section A

Chapter I:

general introduction

methodological principles and concepts used "definition of basic concepts"

Agricultural economics is an applied branch of economics that deals with the use of agricultural resources in producing agricultural goods to achieve the greatest possible satisfaction of the needs of individuals in society.

It can be defined as the science whose topics address the agricultural universe, the agricultural industry. It includes a set of theories, ideas, and opinions that connect facts to each other so that humanity can be guided to control the natural forces related to the exploitation of human and economic resources present in the economic universe.

It is the science that guides agricultural exploitation in a way that ensures the greatest possible yield of plant and animal agricultural goods with the least amount of human effort. It is also the science that examines the economic problems related to human effort in agriculture. Therefore, agricultural economics aims to control natural, economic, and agricultural forces to increase income and maintain and develop net agricultural income, which represents the difference between total agricultural income and total agricultural costs.

Agricultural economics is concerned with applying principles, theories, rules, and economic knowledge in the field of agriculture, to identify the behaviors of variables affecting agricultural economic phenomena and the extent of their consistency or deviation from basic economic principles and theories.

Economics is a social science that deals with how consumers, producers, and societies choose from among alternative uses of scarce resources in the process of producing, exchanging, and consuming goods and services.

1. Definition of Agriculture:

The word agriculture is derived from two words: "Ager," meaning field or soil, and "Culture," meaning care or cultivation. Therefore, agriculture can be defined

as the care and cultivation of the land. Thus, agriculture encompasses all activities undertaken by the farmer, such as tilling and cultivating the land to produce crops, as well as raising animals for milk, wool, meat, and hides, and raising bees, poultry, and other livestock. Agriculture also includes any other work carried out on the farm to prepare crops for the market and deliver them to warehouses or intermediaries.

Agriculture is a science, an art, and a skill for utilizing both land and human resources.

Agriculture is the science or practice of farming, including land reclamation for the cultivation of crops and the raising of animals to provide food, wool, and other products.

Agricultural science is the academic and scientific study of agriculture that includes researching and understanding the principles underlying agricultural practices, developing new techniques and methods to improve agricultural productivity, and addressing challenges such as pests, diseases, and environmental health. Essentially, agricultural science provides the platform for developing theories, tools, and equipment that are adopted and adapted for agricultural production.

2. The Relationship Between Agricultural Economics and General Economics

There is a strong relationship between agricultural economics and general economics, as the goals of agricultural economics are fundamentally the same as those of the field from which it branched. However, agricultural economics is primarily concerned with understanding the activities and well-being of those engaged in agriculture. This cannot be achieved without the growth and development of other economic activities. Furthermore, the field of agricultural economics is no longer limited to the study and management of farm organization, as it once was, but has expanded to include other economic topics. It has become very similar to general economics in its study of domestic markets, foreign trade, economic cycles, money, banking, finance, marketing services, taxes, prices, labor economics, and other related areas.

Therefore, we conclude that there is no great difference between the goals of agricultural economics and general economics, except that agricultural economics surpasses general economics by focusing on technical and applied

agricultural sciences such as field crop science, soil science, animal husbandry, engineering and agricultural mechanization, as it draws from these sciences the effective factors in improving agricultural production in terms of quantity and quality.

3. The Emergence of Agricultural Economics

Agricultural economics is a relatively recent field of study, emerging in response to the growing economic problems in agriculture during the late 19th and early 20th centuries. The field originated in England, with early English researchers and writers laying the foundations for agricultural economics including (R.E. Prothero), (W. Marshal), and (J. Caird), Germany then began teaching agricultural economics in its universities, followed by the United States. The first American universities to offer programs in agricultural economics were the University of Wisconsin, Harvard University, and Cornell University.

These three universities began teaching agricultural economics in 1903. Professor (H.C. Taylor), an agricultural economics professor at the University of Wisconsin, was the first to write a book on the subject in America in 1905, followed by Professor (T.N. Carver) at Harvard University in 1911, who published a book on the principles of rural economics. After that, research and publications gradually emerged until the subject, with its various branches, became widely taught.

4. Types of Agriculture

Agriculture is divided into several types, the most important of which are as follows:

- **Primitive Shifting Agriculture:** Shifting agriculture occurs in tropical regions where farmers clear forests and cultivate the land. When the land's fertility is exhausted, they abandon it and move to new land. That is, they do not try to renew the land's fertility due to their lack of agricultural knowledge, but rather move away from it.
- **Intensive agriculture:** Intensive agriculture arises in places where the population is dense and the value of agricultural land is high, as is the case in the basins of major rivers, where fertilizers are used and the soil-stressing crops are not planted except every year or every two years. Here, the two-year and three-year crop rotation began, and this diversification in

agriculture reduces the stress on the land and allows it to renew its fertility.

- **Extensive Agriculture:** This type of agriculture takes place in areas where agricultural land is available but not fully utilized due to low population density. If machinery, expertise, and ease of transporting crops to consumer markets are available, these vast lands will be cultivated, as machinery compensates for the shortage of labor. However, the productivity per dunam is much lower than in densely populated agricultural areas.
- **Specialized Agriculture:** This type of agriculture focuses on cultivating a specific crop, such as tea, rubber, coffee, cotton, and others. The produce from these farms is primarily for export, with only a small portion consumed domestically. Its main advantages include:

- Facilitating agricultural operations such as plowing, harvesting, irrigation, and pest control.

- Simplifying crop classification.

- Facilitating scientific research and technical studies.

- It facilitates the marketing process, as marketing one crop is easier than marketing several.

- It enhances the farmer's skills.

- **Mixed farms:** These farms produce both plant crops and animal products. Income is generated from the sale of both crops and animal products. This type is similar to diversified farms, but it is distinguished by having a coordinated farm plan.
- **Diversified farming:** These farms produce more than one type of crop, and their benefits include:

- Maintaining soil fertility through crop rotation.

- Distributing labor across the seasons and across different crops to utilize workers and machinery throughout the year.

- The ability to produce most of the crops needed by the farmer and their family.

- Avoiding inevitable losses. Combining several projects on the farm increases the likelihood of success for some projects, thus offsetting potential losses in others.

- Distributing the farmer's income throughout the year instead of a single payment. This reduces overspending, avoids resorting to loan sharks, and prevents selling at low prices.

5. Agricultural Systems

Several agricultural systems have emerged at different times and in different countries, achieving varying degrees of success. These systems can be divided into:

- **Small farms:** This type resembles small private enterprises, where the farmer is the owner and, with the help of family members, cultivates the land as he wishes. He determines the type of crop, plants it, and keeps it or sells part of it in the market without anyone's intervention. The use of machinery is limited due to the small size of the farm. The owner may lease the land to a farmer who cultivates and benefits from it according to the agreement stipulated in the contract between the lessor and the owner, or the owner may partner with the farmer in utilizing the land according to an agreement between them.
- **Feudal (capitalist) farms:** In this type of agriculture, individuals own vast areas of land which they manage in the manner of modern enterprises (companies). Individuals provide the capital used, and the farm is managed as a company. The organizational unit is characterized by its large size, and the produce is intended for sale in the markets. Exploitation and monopoly are clearly evident in this type of agriculture.
- **Cooperative farms:** Cooperative farms have taken many forms, including agricultural cooperatives for the collective use of basic services without consolidating landholdings and unifying their management. Another form is the organization agreed upon by farmers or approved by the state, under which individual landholdings are consolidated, or ownership rights are distributed among farmers, compelling them to join cooperative societies to cultivate and manage their allocated land as a single unit under the supervision of a cooperative supervisor and an elected collective management. This organization preserves individual land ownership, and

each individual's share of the produce is determined based on their landholding and labor.

Therefore, cooperative farms are a system based on individual land ownership and joint management, and its main objective is to combine the incentives of private ownership with the benefits of large-scale production.

- **Government farms:** This type of farm is similar to other government institutions in terms of its organization and management, as the government owns the land, cultivates it, manages it, makes appropriate decisions, and bears risks. The land is cultivated under the supervision of managers or employees appointed by the government according to the policy it sets, and the farmers are considered wage laborers.
- **Collective farms:** This system emerged in recent years and was adopted by several countries, including the Soviet Union. Collective farm systems generally require that ownership of the land, capital, and produce is collective. The harvest is distributed among members according to their effort, i.e., per day worked. Otherwise, the farm is considered a single unit in management and production. Naturally, the scale of agricultural operations is large, mechanization is extensive, and the members themselves undertake the work according to the kolkhoz system: a form of collective farm in the Soviet Union, existing alongside state farms (sovkhoz). These two components formed the social farming sector that began to appear in Soviet agriculture after the October Revolution of 1917.

6. Key Aspects of Agricultural Economics

- **Production and Farm Management:** Focuses on increasing crop yields, enhancing productivity, and managing risks in agricultural operations.
- **Market Analysis and Supply Chains:** Examines commodity markets, pricing, food trade, and the logistics of transporting products from farms to consumers.
- **Resource Management and Sustainability:** Explores the optimal use of land, water, and other resources, including the impact of environmental factors and agricultural technology.

7. Principles of agricultural economics

- **Scarcity and Choice:** Resources (land, labor, capital) are limited, necessitating choices about what, how, and for whom to produce.

- **Opportunity Cost:** The cost of using resources for one agricultural purpose is the value of the next best alternative foregone.

- **Supply and Demand:** Agricultural markets are driven by price mechanisms. Supply tends to be inelastic in the short term, while demand for food is generally stable.

- **Marginal Analysis:** Decisions are made by comparing marginal costs to marginal returns to maximize profits.

- **Comparative Advantage:** Regions or countries produce goods at a lower opportunity cost, fostering trade.

- **Efficiency:** Utilizing technology and inputs to maximize output while minimizing waste.

8. Key Areas of Focus

- **Production Economics:** Focuses on input productivity, factor-product relationships (e.g., fertilizer to yield), and returns to scale.
- **Agribusiness Management:** Addresses the economic aspects of food processing, marketing, and distribution.
- **Risk and Uncertainty:** Analyzes managing unpredictable factors like weather, pests, and price volatility.
- **Agricultural Policy:** Evaluates government interventions like subsidies, price controls, and trade agreements (WTO).
- **Environmental Economics:** Examines sustainability, climate change impact, and natural resource.

❖ **Foundational Concepts**

- **Factors of Production:** Land, Labor, Capital, and Management.
- **Elasticity of Demand:** Measures how sensitive consumers are to changes in food prices.
- **Market Structure:** Ranging from competitive farming markets to oligopolistic agribusiness firms.