



Introduction

It is only recently that agricultural economics has come to be studied as a separate branch of economics and agronomy. Although books on agriculture had been written in the past and many important problems of agricultural economics given considerable thought and solved through organised efforts, not much of literature exists on agricultural economics as a separate discipline. Agricultural economics as a separate discipline started only in the beginning of 20th century when interest in economic issues related to agriculture erupted in several educational centres. It was only after the depression of 1890's which seriously affected agriculture, that organised farm groups stirred considerable interest in farm management problems. This new field of agricultural interest was later designated as agricultural economics.

It is easy to understand that the whole of economics in the past must have been written, taught and explained through illustrations drawn from agriculture either directly or indirectly. Not before the industrial revolution could one imagine of understanding economics without reference to agriculture. The emergence of industrial revolution did not mar the interest and development of agriculture rather stimulated its growth and facilitated understanding of its importance. This stimulation and understanding slowly and gradually resulted

in the evolution of agricultural economics were given by agronomists. However, the importance of this discipline has grown to much that we have now separate agricultural universities and agricultural economics as an inseparable part of the academic programmes.

The courses on agricultural economics are given in other academic institutions also and as different levels of learning with of course, not much emphasis on theory. Applied aspects in relation to local conditions are given weightage in teaching programmes in these institutions.

Concept of Agricultural Economics

The words agricultural economics are made up of two words, *viz.*, agriculture and economics. Before we define agricultural economics as a whole, it would be appropriate to define agriculture and economics separately.

The word agriculture, since long, has been associated with the industry of basic food production, known as farming. Agriculture and farming were synonymous till farming was not commercialised and was done more or less on a subsistence basis. But after the commercialisation of the agricultural sector, production of food and fibre (farming) has become only one part of scientific agriculture.

Modern agriculture has much wider scope today and it includes the farm supply industries as well as the product-processing industries and distribution industries, too. Industries closely related to farming are known as agriculturally related industries or agribusinesses. The scope of modern agriculture has been depicted in the following Fig.

Agriculture thus, may be defined as the production, processing, marketing and distribution of crops and livestock. These four activities were previously all farm-centred. However, with improvement in technology, transport and communication developments and specialisation of labour, some of these activities have moved away from farm into

certain strategic control points. Modern agriculture also includes the farm supporting industries as well as product processing and distribution industries.

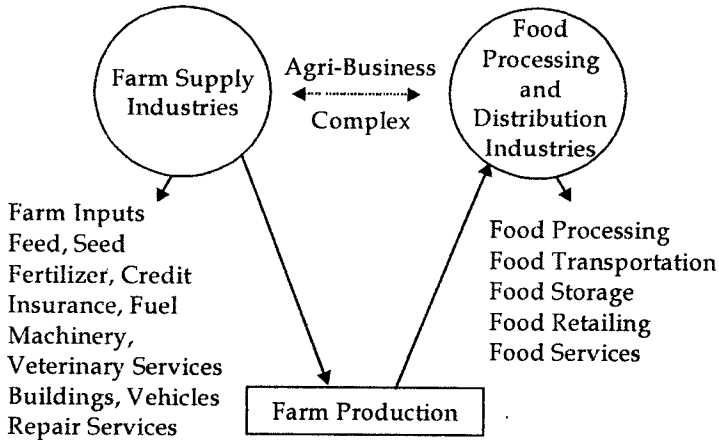


Fig: Scope of Modern Agriculture.

Economics, on the other hand, is the science of analysing the use of limited resources to achieve desired ends. It is a social science which studies how man satisfies wants through the allocation of scarce resources.

The English word "economics" is derived from the Greek word "Oekonomous" which means "housekeeping" and one of the tasks of the housewife is of making most effective use of the resources that are available to her, Prof. Lionel Robbins has defined economics as "the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses". As such it involves.

1. Deciding between alternative ways of using limited resources;
2. Satisfying human needs and wants for which there are varying degrees of preferences; and
3. Taking into account human behaviour and decision-making on the best way to use available resources.

Fig. illustrates the general subject-matter underlying the study of economics:

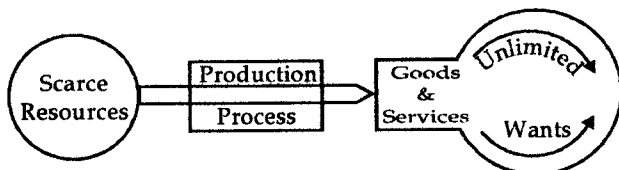


Fig: Scarce Resources Attempt to Satisfy Unlimited Wanted via Production.

The gap between what people wish to have and what they actually can afford to have is of central concern in economics. In the absence of such a gap between expectations and achievements, the subject of economics may not have been studied at all. But in real life situations, the gap does exist and it has been the main preoccupation of economists to evolve ways and means of reducing this gap.

Nature of Agricultural Economics

After having discussed the definitions of agriculture and economics separately, we are now in a position to define agricultural economics.

In a very simple language, agricultural economics may be defined as an applied phase of economics in which attention is given to all aspects of problems related to agriculture. It helps the farmer in deciding about what kind of food should he produce, which crop should he raise to maximise his profits and at what level should he price his products. As such, it is a social science concerned with the allocation of scarce resources among the uses associated with producing, processing and consuming the farm products. According to Prof. Gray, "agriculture economics may be defined as the science in which the principles and methods of economics are applied to the special conditions of agricultural industry."

According to A.W. Ashby, "agricultural economics is an applied science, that is, it is a methodical pursuit of knowledge of economic process and organisation in agriculture and of

their results, for the purpose of stabilising, adopting or modifying, and if and when necessary, of changing their results."

Hibbard defines agricultural economics as "a study of relationships arising from the wealth getting and wealth using activity of man in agriculture." However, agricultural economics should include within its purview not only subjects directly connected with the exploitation of land but also those which indirectly influence the economic activity on the farm and the well-being of the farm population.

To Jouzier, "agricultural economics is that branch of agricultural science which treats of the manner of regulating the relations of the different elements comprising the resources of the farmer, whether it be the relations to each other or to human beings, in order to secure the greatest degree of prosperity to the enterprise."

In short, we may define agricultural economics as an applied science which is mainly concerned with economic problems that are associated with farmers' effort to make a living. Their problems as we know are numerous and varied in character but can be grouped under three main heads: (i) Production; (ii) Marketing; and (iii) Financing. Thus, agricultural economics is concerned with the evolving of appropriate principles that govern the amount of land, labour and capital, which a farmer should use to farm most efficiently. Agricultural economics is equally concerned with the forces that affect the prices of the things he buys, sells or in other words, the relation between agriculture and the rest of the economy.

As an applied science, an important role of agricultural economists is to formulate the methods, techniques and procedures by which the problems of agriculture may be tackled. This perhaps is the most difficult function which the agricultural economist is called upon to perform. Hence we may conclude by saying that "agricultural economics is an applied science and as such is concerned with the identification, description and classification of the economic problems of agriculture, to the end that these problems may be solved."

The problem of allocation of scarce means to diverse uses is perhaps more crucial in the field of agriculture than in the economy as a whole for the simple reason that land — the basis of all agricultural pursuits — is highly limited in supply. The theoretical frame of agricultural economics has, therefore, to be more rigorous and thoughtful so as to provide a plausible kit of methods and procedures by which this most precious and limited resource is allocated among different productive activities to the maximum satisfaction of the society. Agricultural economics is, therefore, both theoretical and applied in its character. The theory of agricultural economics deals with the development of principles of resource economics and as an applied science, it deals with the application of these principles in diverse productive activities related to agriculture.

Scope of Agricultural Economics

There are a number of forces active in agriculture. Some of these forces are physical and are taken care of by physicians, chemists, geologists and soil scientists and so on. Some others are biological forces which are studied by plant and animal physiologists, pathologists, geneticists, entomologists, bacteriologists, etc. Agriculture is also faced with economic and sociological forces, which are characterised by relationships arising amongst men on account of agriculture being followed as a vocation and a way of life. It is with these relationships that agricultural economists deal. These relationships comprise of:

1. Relationship of contact (supplementary, complementary or competitive) between the different branches of the enterprise such as the simultaneous raising of cereals and animals on the same farm;
2. Relationship of activity between the different means employed in the process of production, as in the simultaneous employment of machinery and human labour;
3. Relations of value between the means employed in production and the product itself; and

4. Commercial relations with the people to whom farmers sell their products or from whom they buy their requirements.

“The domain of agricultural economics then covers the examination of each element of agricultural production whether in connection with any one of the above-named relationships in particular or with several of them together, for the purpose of obtaining the greatest net profit.”

It is clear from the above statement of Jouzier that he looks upon agricultural economics as (i) the science which deals with the principles underlying the coordination of all the factors involved in farming (land, labour, equipment and the various lines of production) in such a manner as will enable the farmer to secure the maximum net profits; and (ii) the art of applying these principles on a given farm.

We can thus describe the scope of agricultural economics in the words of Taylor who says, “agricultural economics deals with the principles which underline the farmers’ problem of what to produce and how to produce it, what to sell and how to sell it in order to secure the largest net profit for himself consistent with the best interest of society as a whole. More specifically, it treats of the selection of land, labour and equipment for a farm, the choice of crops to be grown, the selection of livestock, enterprises to be carried on, and the whole question of the proportions in which all these agencies should be combined. These questions are treated primarily from the point of view of costs and prices.”

Can we include in the scope of agricultural economics the distribution and processing of farm products after they leave the farm and the consumption of food and clothing by the urban population? The answer naturally would be “No”; otherwise, steel manufacturing and automobile industries would be treated as part of mining. But this does not mean that agricultural economics has nothing to do with the problems of distribution and consumption of farm products. Indeed, it

is as important for farm people to understand the economics of distribution and of consumption of farm products as it is for them to understand the economics of their farm production. They are, therefore, part of the economics of agriculture."

The scope of agricultural economics is, thus, extended to the distribution and consumption problems of farm products as well; what to distribute, among whom to distribute and on what basis to distribute; what to consume and how much to consume are, therefore, some of the important questions dealt in agricultural economics. A study of agricultural economics also includes the functioning of government in agriculture. "To neglect the public management, public aid, and public regulation as arts of the agricultural economics would be almost like leaving mechanics out of a course of physics."

To be specific, the scope of agricultural economics can be stated to include the choice of farming as an occupation, the choice of farm and livestock, of machinery and labour, of crops and cropping system, the size of the unit of production, the grouping of the factors of production, intensity of cultivation, manuring, irrigation, soil conservation, selling of agricultural products, land system and rent, agricultural finance and rate of interest, wages and employment, prices, costs and profits, standard of living, national dividend, etc."

The main problem in all the cases mentioned above is of choosing the most profitable enterprise and operating it. The task of agricultural economist is to point out what is best to do in the economic interest of the agricultural community under the given conditions.

From the above, we may conclude that the scope of agricultural economics is very vast. "Within its scope must be included every phase of a nation's activities that in any way affect the farmer in his efforts to make a living. At the farm level, agricultural economics is concerned with developing ways and means by which each productive unit may be so organised and operated, its products so disposed of and the

resources so allocated to various uses that the farm may yield maximum net returns. At the sector level, it deals with those problems that emerge when farmers attempt to effect changes in farming that cannot be accomplished by individual action. Among such problems are the conservation of land, the cooperative purchase of goods and services and the marketing of farm products.

Finally, agricultural economics must be concerned with solutions of those problems that require the active participation of the Government, *i.e.*, problems connected with price control, supply of credit, international trade, etc."

Types of Agricultural Economics

Agricultural economics is both a social science as also a natural science. As a social science, it does not differ significantly in its scope from general economics. A farmer's activities, decisions and functioning are greatly affected by society, which in turn, is equally affected by the farmer's decisions. To the extent farmer's decisions are affected by his own psychology, social institutions and religious and other taboos, his activities cannot be measured in as precise a manner as would be possible in a laboratory experiment. In this respect, agricultural economics is subject to all such influences as exist within the domain of social sciences. Economic calculations would, therefore, follow the same standards of accuracy or inaccuracy as in general economics.

On the other hand, agricultural economics as a natural science deals with a thorough examination and evaluation of scientific innovations suggested by soil scientists. In fact, agricultural economics owes its origin in the present form to agronomy itself.

Agricultural economics is essentially considered to be an applied science for the sole reason that it is the practical wisdom of an agricultural economist rather than the volume of his theoretical knowledge without practical orientation that makes the difference in agricultural pursuits. Knowledge is not to be

acquired for the sake of knowledge alone but the theoretical and practical aspects have to be studied in relation to each other. By nature, the learning process in agriculture has to be such as would offer itself convincingly for use for the directive purpose of economic pursuits.

The nature of agricultural economics is unique because of the important role that nature plays in its working. In no other economic phenomenon as in agriculture is the nature so directly and strongly involved. The problem of maximisation of returns is, therefore, more complex and solution to the problem more uncertain. Varying agroclimatic conditions, economic systems, soil fertility and soil capacities lead to inter-regional and intra-regional heterogeneity in the agricultural production conditions.

This creates the problem of differential achievements under different geoeconomic conditions. The problems of agricultural production are, therefore, multidimensional and the subject of agricultural economics has to develop in the light of these problems that it seeks to investigate and work with.

Seasonality is yet another factor that distinguishes agricultural production enterprise from other non-agricultural activities. Naturally, therefore, market fluctuations are more sharp and frequent in agriculture. Since the very nature of agricultural enterprise is such that it involves the whole family in its pursuit for livelihood. It differs uniquely in its organisation and institutional setup from non-agricultural pursuits.

Relationship with other Disciplines

It would be a grave error to infer that economics is the only science upon which the agricultural economist depends. The applied or technical agricultural sciences such as agronomy, animal husbandry and agricultural engineering contribute data showing the effect of various types of practices and equipment on output. Such information is helpful or rather indispensable to the agricultural economist in dealing with problems of production efficiency.

Again, the determination of the effect of any technical practice requires that records and complete farm accounts be maintained. For assistance in this sphere, the agricultural economist depends upon the science of bookkeeping and accounting which has developed rules and procedures by which accurate data on any phase of the farm business can be obtained.

Statistics is another science that has been used effectively by the agricultural economists. This science is helpful in supplying methods by which data regarding specific farm problems can be collected, analysed and evaluated.

Agricultural economists must also draw upon the subject method of other social sciences. The process of decision-making under uncertainties involves psychology as such as it involves economics. Sociology is necessarily involved in production and resource-use. Interfarm problems in production are partly those of community organisation and the acceptance of production policies or new techniques of production involve sociological as well as economic considerations. Political science, if it is considered from the stand point of choice and decision, likewise becomes a field of science which must be integrated with the principles of production and consumption.

Physical resources and physical sciences specify what can be produced; economics specifies how resources should be used in production while sociology, psychology, ethics and political. Science specify the limitations which are placed on choice through laws, customs and other expression of individual and group values.

Industrial Development and Agriculture

If we study the economic history of most of the advanced countries, we find that it was revolution in the agricultural sector that gave rise to revolution in their industrial sector. Industry for its development needs capital for investment, labour for running the factories, raw materials as their inputs

and demand for their products. A developed agriculture as we have seen above can contribute all these ingredients for the rapid development of the industrial sector of an economy. The developed industrial sector itself becomes an engine for rapid growth of agricultural sector.

Hence with the passage of time, agricultural sector begins to depend upon the industrial sector for its own development. In the later stages both sectors become interdependent. Today, it is futile to discuss the issue of industrial development versus agricultural development but the current thinking may be devoted to consider how best agriculture and industry contribute to each other.

Mostly there are two channels through which the sectors are linked to each other, *viz.*, through production and demand. Firstly, each requires inputs from the other sector. Agriculture requires industrial inputs such as fertilizer and pesticides. The agro-based industries require agricultural raw material as their inputs. Secondly, the incomes arising out of agricultural sector create demand for goods of industrial sector and the incomes of the industrial sector generate demand for agricultural commodities.

To quantify these linkages, the transactions that take place between the producing sectors are needed. The input-output tables precisely provide such a framework.

Significance of Agricultural Economics

Agricultural economics is not basically a different kind of economics — a separate set of economic principles and methodology which has relevance only to agriculture. The general framework of economic theory is applicable to the business of agriculture just as much as to that of industry. The analysis of equilibrium of demand and supply, of value and price, etc., is as valid in agriculture as in industry. Then if general economic principles are applicable to the agricultural sector the question arises: why should we study agricultural economics separately?

True, goals of production and the need for management decisions concerning the allocation of inputs are strikingly similar between agricultural and industrial production. However, there are substantial differences in the natural conditions under which production must be carried on and in the sociological background in the agricultural sector which demands a separate study of agricultural economics.

Firstly, agriculture is a unique industry in which the mode of life and business enterprise are combined together. This combination no longer exists in present-day industry. It is on this score that it is more influenced by sociological, political and sentimental considerations.

Secondly, another characteristic of agricultural production which distinguishes it from industrial production is that the farmer produces chiefly for his own needs. No denying the fact that in modern farming, the element of self-sufficiency has been reduced in importance but by no means has it been removed. In most underdeveloped countries, even today, farming is done on the basis of self-sufficiency.

Thirdly, many agricultural commodities are joint products like wheat and affals or mutton and wool because they are both part of the same plant or the same animal. The costs attributable to the various products cannot be separated as they often can be in industry even when several products are produced in the same plant. Thus, in agriculture, it is rarely justifiable to consider the supply of any product in isolation.

Fourthly, agriculture requires a far larger proportion of land in relation to its employment of other factors than does industry. This is responsible for an early tendency of law of diminishing returns wide scatter of production and the great importance of system of land tenure.

Fifthly, farming mostly is undertaken in small-sized units and thereby gives little scope for division of labour. Thus, large-scale organisation and its benefits, typical of industry, is less applicable to agriculture.

Sixthly, unlike in the manufacturing industry, combinations are not possible in farming due to the existence of a large number of small farm holdings. This results in acute competition among farmers.

Finally, in agriculture, farmers' control over production is very limited. When production is either not controlled or not controllable, serious maladjustments are likely to occur because at times more products will be produced than are required and could be sold profitably and at other times, not enough products are available when prices are high.