

YEAR	SUBJECT TITLE	SEM	SUBJECT CODE
2018-2019 ONWARDS	ECONOMICS OF AGRICULTURE ELECTIVE III	IV	18MEC44E

## UNIT I

### Meaning of Agricultural Economics:

Agricultural Economics, as its title implies is that branch of economics which deals with all aspects of problems related to agriculture. According to Snodgrass and Wallace, "Agricultural economics is an applied phase of the social science of economics in which attention is given to all aspects of problems related to agriculture."

Prof. Gray treats agricultural economics as a branch of general subject of economics. It is only one of the many branches of applied economics. Such as Industrial Economics, Labour Economics, Monetary Economics, Transport Economics, Public Economics, International Economics, Household Economics, etc.

Thus according to Prof. Gray, agricultural economics only a phase of an immense field called economics in which primary attention is paid to the analysis of the economic problems associated with agriculture, Prof. Gray defines agricultural economics, "as the science in which the principles and methods of economics are applied to the special conditions of agricultural industry." No doubt both these definitions are wider in scope, but these are not explanatory and are characterised by vagueness unsettled.

Prof. Hubbard has defined agricultural economics as, "the study of relationship arising from the wealth-getting and wealth-using activity of man in agriculture." This definition is based on Prof. Ely's definition of economics and is mere akin to Marshall's conception of economic activities and therefore it is also limited in scope.

According to Lionel Robbins, economics deals with the problems of allocative efficiency i.e. choice between various alternative uses—particularly when resources are scarce—to maximize some given ends. Thus it provides analytical techniques for evaluating different allocations of resources among alternative uses. Prof. Taylor defines agricultural economics in Robbinsian tone.

To use his words, “Agricultural economics 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.”

Frankly speaking Taylor’s definition appears to be a pretty careful definition of farming from the point of view of farm management and therefore is narrow and limited in scope. A similar definition has been furnished by Prof. Jouzier as, “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 former whether it be the relation to each other or to human beings in order to secure the greatest degree of prosperity”.

According to Prof. Edgar Thomas, “Agricultural economics is concerned with farming as a business and with agriculture as an industries. In the more restricted sphere of farm management the student of agricultural economics is concerned with the business problems of the firm of the producing unit of the industries. In the wider sphere of social economics he is concerned with the general economic pattern of the agricultural industry as a whole and with the forces responsible for the moulding of that pattern; he is also concerned with the relation of the agricultural industry to other industries within the national economy as well as with its place in world economy.”

According to Prof. Heady, “Agricultural economics is an applied field of science wherein the principles of choice are applied to the use of capital, labour, land and management resources in the farming industries. As a study of resource efficiency, it is concerned with defining the condition under which the ends or objectives of farm manager form families and the nation’s consumers can be attained to the greatest degree.”

As we know, economic activities are divided into production, exchange, distribution and consumption, agricultural economics cover all of them-what to produce, how to produce, how much to produce, what to sell, where to sell and at what price to sell; what to distribute, among whom to distribute and on what basis to distribute; and what to consume and how much to consume.

Specifically, we can say agricultural economics includes the choice of farming as an occupation, the choice between cultivator and animal husbandry of machinery and labour; combination of various factors of production, intensity of cultivation irrigation, manuring, marketing, soil conservation, land revenues system, costs, prices, wages, profits, finance, credit, employment, etc. In all these cases the fundamental problem before the agricultural economist is to recommend the combination of factors of production in ideal proportion under given conditions in the economic interests of the agricultural community.

According to prof. Holerow, "Agricultural economics is concerned with the allocation of resources in the agricultural industry, with the alternatives in production, marketing or public policy." Agricultural economists are concerned with the study of efficiency in farm production, with the returns that will result from employing various quantities and combinations of inputs in farming, and with determining the best farm production alternatives under given physical and economic conditions.

They are concerned with the economics of agricultural markets, with the costs of marketing various farm products, and with the alternative steps or changes that may be made in the marketing structure to serve the objectives of society more efficiently.

They are interested in analysis of the alternatives in public policy and the economic effects of carrying out a particular programme, such as price support law or a soil conservation programme. Agricultural economists make use of the tools of economic analysis in studying.

### **Features of Indian Agriculture:**

(i) Source of livelihood:

Agriculture is the main occupation. It provides employment to nearly 61% persons of total population.

It contributes 25% to national income.

(ii) Dependence on monsoon:

Agriculture in India mainly depends on monsoon. If monsoon is good, the production will be more and if monsoon is less than average then the crops fail. Sometimes floods play havoc with our crops. As irrigation facilities are quite inadequate, the agriculture depends on monsoon.

(iii) Labour intensive cultivation:

Due to increase in population the pressure on land holding increased. Land holdings get fragmented and subdivided and become uneconomical. Machinery and equipment can not be used on such farms.

(iv) Under employment:

Due to inadequate irrigation facilities and uncertain rainfall, the production of agriculture is less, farmers find work a few months in the year. Their capacity of work cannot be properly utilised. In agriculture there is under employment as well as disguised unemployment.

(v) Small size of holdings:

Due to large scale sub-division and fragmentation of holdings, land holding size is quite small. Average size of land holding was 2.3 hectares in India while in Australia it was 1993 hectares and in USA it was 158 hectares.

(vi) Traditional methods of production:

In India methods of production of agriculture along with equipment are traditional. It is due to poverty and illiteracy of people. Traditional technology is the main cause of low production.

(vii) Low Agricultural production:

Agricultural production is low in India. India produces 27 Qtls. wheat per hectare. France produces 71.2 Qtls per hectare and Britain 80 Qtls per hectare.

Average annual productivity of an agricultural labourer is 162 dollars in India, 973 dollars in Norway and 2408 dollars in USA.

(viii) Dominance of food crops:

75% of the cultivated area is under food crops like Wheat, Rice and Bajra, while 25% of cultivated area is under commercial crops. This pattern is cause of backward agriculture.

### **Scope of Agricultural Economics:**

The foregoing definitions indicate the scope of agricultural economics. A common theme of scarcity of resources and choice of uses runs almost through all of these definitions. That way, agricultural economics is not different from the general economics.

All the tools of analysis used in general economics are employed in agricultural economics as well. We have the same branches of agricultural economics i.e. economics of production, consumption, distribution, marketing, financing and planning and policy making as in case of general economics. A study at the micro and macro level for the agricultural sector is also generally made. Static and dynamic analyses are also relevant for the agricultural sector of the economy.

To be more specific, these definitions point out that agricultural economics examines how a farmer chooses various enterprises e.g., production of crops or rising of cattle and how he chooses various activities in the same enterprise. E.g., which crop to grow and which crop to drop; how the costs are to be minimized; what combination of inputs for an activity are to be selected; but amount of each crop is to be produced but type of commercial relation the farmer have to have with people from whom they purchase their input or to whom they sell their product.

Agricultural economics does not study only the behavior of a farmer at the farm level. That is, in a way, the micro analysis. Agricultural problems have a macro aspect as well. Instability of agriculture and agricultural unemployment are the problems which have to be dealt with, mainly at the macro level.

And then, there are the general problems of agricultural growth and the problems like those concerning tenurial systems and tenurial arrangements,

research and extension services which are again predominantly macro in character. Such problems their origin, their impact and their solutions are all the subject matter of agricultural economics.

Again, 'agricultural economics' as at present does not confine itself to the principles concerning 'economising of resource in agriculture' only whether at the micro or macro level or from the 'static' a 'dynamic' point of view.

The scope of agricultural economics is larger than 'mere economizing of resources'. Agriculture is, as we know an important sector, of the overall economy. The mutual dependence of the various sectors of the economy on each other is well established. Growth of one sector is necessary for the growth of the other sector.

As such, in agricultural economics, we also study how development of agriculture helps the development of the other sectors of the economy; how can labour and capital flow into the non-agricultural sectors; how agricultural development initiates and sustains the development of other sectors of the economy.

What this implies is that agricultural economics not only develops concerning the use of scarce resources in agriculture proper but also examines the principles (a) regarding the out flow of scarce resources to other sectors of the economy and (b) about the flow of these resources from other sectors into the agricultural sector itself.

### **Nature of Agricultural Economics:**

Agricultural economics makes use of the principles of general economics. The first point to be noted with regard to the nature of agricultural economics is that, in general, it borrows most of its principle from its parent body of knowledge i.e., the general economics.

Even the main branches of agricultural economics are similar to those of general economics. But than a question arises. If the principles of general economics are not different from the principal of agricultural economics, why is there a need for separate study of agricultural economics?

The answer lies in the fact that agricultural economics does not merely imply a direct application of principles of economics to the field of agriculture. The

principles of economics are too general in nature and the general theory of economics has been considered as an abstraction from reality.

Before this theory is applied to agriculture which includes, besides crop production, forestry and animal husbandry for the purpose of economic analysis, its principles have to be modified so that their postulates totally tally with the main features of the situation of obtaining in the agricultural sector.

A few examples will make it clear. We study in economic theory, price formation under various market structures e.g., monopoly, perfect competition and oligopoly. So far as agriculture is concerned, it is presumed that as the number of farms is very large and at the same time, their size is relatively small and the crops produced are undifferentiated (homogeneous), perfect competition is likely to prevail in the agricultural produce market.

In other words, we shall almost be completely ignoring the study of price formation of agricultural produce under condition of oligopoly or monopolistic competition or monopoly. Then, there is the system of tenancy or crop sharing in agriculture – a problem particular to agriculture only. Study of this problem will necessitate modification of the principle of resource allocation as propounded in general economics.

The modification of the economic principles, required to be made before being applied to agriculture are so large and varied that there is a complete justification for studying agricultural economics as a separate body of knowledge. **Meaning of Agricultural Economics:**

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## **Importance of Agriculture**

During Independence there was extremely low productivity per hectare and per worker. However, the previous trend of stagnant agriculture was completely changed due to the introduction of economic planning since 1950-51, and with special emphasis on agricultural development, particularly after 1962.

(i) A steady increase in the area under cultivation is noticed.

(ii) A substantial growth in the food crops is marked.

(iii) During the plan period there had been a constant increase in the yield per hectare.

Though industry has been playing an important role in Indian economy, still the contribution of agriculture in the development of Indian economy cannot be denied.

This can be measured and gauged by the following facts and figures:

1. Agricultural influence on national income:

The contribution of agriculture during the first two decades towards the gross domestic product ranged between 48 and 60%. In the year 2001-2002, this contribution declined to only about 26%.

2. Agriculture plays vital role in generating employment:

In India at least two-thirds of the working population earn their living through agricultural works. In India other sectors have failed to generate much of employment opportunity for the growing working populations.

3. Agriculture makes provision for food for the ever increasing population:

Due to the excessive pressure of population labour surplus economies like India and rapid increase in the demand for food, food production increases at a fast rate. The existing levels of food consumption in these countries are very low and with a little increase in the capita income, the demand for food rise steeply (in other words it can be stated that the income elasticity of demand for food is very high in developing countries).

Therefore, unless agriculture is able to continuously increase its marketed surplus of food grains, a crisis is like to emerge. Many developing countries are passing through this phase and in a bid to meet the increasing food requirements agriculture has been developed.

#### 4. Contribution to capital formation:

There is general agreement on the necessity of capital formation. Since agriculture happens to be the largest industry in developing country like India, it can and must play an important role in pushing up the rate of capital formation. If it fails to do so, the whole process of economic development will suffer a setback.

To extract surplus from agriculture the following policies are taken:

(i) Transfer of labour and capital from farm to non-farm activities.

(ii) Taxation of agriculture should be in such a way that the burden on agriculture is greater than the government services provided to agriculture. Therefore, generation of surplus from agriculture will ultimately depend on increasing the agricultural productivity considerably.

#### 5. Supply of raw material to agro-based industries:

Agriculture supplies raw materials to various agro-based industries like sugar, jute, cotton textile and vanaspati industries. Food processing industries are similarly dependent on agriculture. Therefore the development of these industries entirely is dependent on agriculture.

#### 6. Market for industrial products:

Increase in rural purchasing power is very necessary for industrial development as two-thirds of Indian population live in villages. After green

revolution the purchasing power of the large farmers increased due to their enhanced income and negligible tax burden.

#### 7. Influence on internal and external trade and commerce:

Indian agriculture plays a vital role in internal and external trade of the country. Internal trade in food-grains and other agricultural products helps in the expansion of service sector.

#### 8. Contribution in government budget:

Right from the First Five Year Plan agriculture is considered as the prime revenue collecting sector for the both central and state budgets. However, the governments earn huge revenue from agriculture and its allied activities like cattle rearing, animal husbandry, poultry farming, fishing etc. Indian railway along with the state transport system also earn a handsome revenue as freight charges for agricultural products, both-semi finished and finished ones.

#### 9. Need of labour force:

A large number of skilled and unskilled labourers are required for the construction works and in other fields. This labour is supplied by Indian agriculture.

#### 10. Greater competitive advantages:

Indian agriculture has a cost advantage in several agricultural commodities in the export sector because of low labour costs and self- sufficiency in input supply.

### **Inter Dependence of Agriculture and Industry**

The interdependence of agriculture and industry helps the development of both the sectors.

The most important aspect of this inter dependence is that the products of one serve as important inputs for the other. Growth of one sector, thus means ample supply of inputs for the other. The situation is such that a greater flow of products from one sector to other simultaneously ensures a greater return flow of inputs itself, though with some time lag. Help others to help you in brief, sums up, development.

### **Limits of Interdependence:**

The account of the contribution of each sector to the other should not lead one to conclude that this interdependence is competing. This is not the case. Each sector uses some inputs which are not supplied by the other sector. For instance industrial sector does not depend upon the agricultural sector for supply of minerals and salts as raw materials. Much of its capital is now supplied from its own sources.

It itself supplies machinery to it. Similarly agricultural sector will continue to depend upon nature for certain inputs like water supply even after industrial sector has provided it with canals and modern irrigation facilities. As use of machinery is limited in agriculture, human and animal power will continue to be important inputs for the sector. For these inputs, the agricultural sector will again depend upon itself.

Further, there are some problems which are specific to a particular sector and the development of the other sector will leave these problems untouched. What all this implies for the policy-makers is that development of one sector say, the industrial sector, will surely remove some hindrances in the way of further development of the agricultural sector.

But at the same time, it should not be overlooked that there are other hindrances too which emanate from within the agricultural sector itself. These too have to be attended to. Same is the case with the industrial sector. Development of agricultural sector will not remove all the hindrances inhibiting the development of the industrial sector.

### **Contributions of Agriculture to Industries:**

(i) Supply of raw materials to industries: Many industries look to the agricultural sector for supply of raw material.

(ii) Supply of wage goods: The market arrivals of food grains can be taken to represent what agriculture can spare for the non-agricultural sector as wage goods provided the market arrivals do not contain any distress sale on the part of the agriculturists. With this provision in view, we give below the market arrivals in the state of Punjab for the last 30 years or so.

Punjab agriculture has developed at a much rapid pace as compared with that in the other states of the country and its rate of growth of population is one of

the lowest in the country. So, there is a reason to believe that whatever is sold in the market is a genuine surplus spared by the agricultural sector.

(iii) Agriculture and foreign trade: Though India has been importing food grains for quite sometimes after independence, it has also been exporting the products of Argo-based industries, thereby, helping the country, not only to pay for the food imports but also for other imports which includes capital goods also. It is important to note here that the major traditional exports of India are the cotton textiles, Jute textiles and tea.

(iv) Provision of market for the industrial sector: The increasing income of the farm sector leads to an expanded demand for the consumer's goods produced in the industrial sector. Though no enquiry directly pertaining to this issue has been conducted in India, the data collected by the National Sample Survey organization does indicate that the goods produced in the industrial sector are finding their way into the consumption schedule of the rural people.

(v) Provision of capital and labour to the non-agricultural sector: No data are available about the supply of these to inputs by the agricultural sector to the industrial sector. Since it is the agriculture which is the custodian of capital and labour in the initial stages of economic development, it can be positively asserted that, these factors have moved to the industrial sector, mainly from the agricultural sector, in initial stages of economic development in most of the countries.

The contribution of the agriculturists in setting up of various industries in England, of textile industry in India and of some important industries in Japan is quite known. The statement about Indian labour that it was migratory in character and that this was because of its nexus with agriculture shows that it was agricultural sector which provided labour to the industrial sector in the initial stages of the development of the latter.

### **Contributions of the Industrial Sector to the Agricultural Sector:**

(i) Provision of modern inputs to the agricultural sector:

One of the major contributions of the industrial sector is to provide modern input to agriculture. The inputs are in the form of fertilizers, pesticides, machinery etc.

(ii) Reduction of population pressure on land:

Data regarding transfer of population from agricultural to non agricultural sector in India does not yield an encouraging picture. Dependence of population on agriculture during the last 50 years or so has not declined to any significant extent.

Growing population and a slow progress of the industrial sector are responsible for this static situation. However, the population data concerning some developed countries of Europe & that of the U.S.A., are quite illuminating in this regard.

(iii) Provision of infrastructure:

No doubt, many of the items included infrastructure serve the agricultural sector as well as the industrial sector but these are provided mainly by the industrial sector. Transport, electricity, financial institutions, health services, educational and research institutions, all owe their existence mainly to the facilities provided by the industrial sector.

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