CHAPTER : XI

AGRICULTURE, INDUSTRY AND SERVICES

Economic progress is generally gauged either from the level of per capita income or by the percentage of contribution of the different sectors to the national income. An economy is broadly divided into three major sectors: Primary (or agriculture) Sector, Secondary (or industrial) Sector, and the Tertiary (or services) Sector.

In general, the underdeveloped countries have low level of per capita incomes. Further, the share of secondary and tertiary sectors in developed countries is greater than the share of the agricultural sector. On the other hand, there is a predominance of agricultural sector in most under-developed countries. There is a positive association between per capita income and the share of the tertiary sector in the developed countries.

In the developed countries the share of the primary sector in labour force is low and that of secondary and tertiary sectors is high whereas the opposite is true for the less developed countries. As Colin Clark
stated, "A wide, simple and far-reaching generalization in this field is to the effect that, as time goes on and communities become more economically advanced, the numbers engaged in agriculture tend to decline relative to the numbers in manufacture, which, in their turn decline, relative to the number employed in services."

With the pace of economic development, agricultural labour as percentage of the total labour force in the economy undergoes a sectoral shift from primary to secondary sectors. However, the service sector does not change so drastically as does the agricultural and manufacturing sectors. This "stage" thesis of development in which production has been separated into primary, secondary and tertiary activity, has been extensively discussed and criticized by P.T.Bauer and B.S.Yamey. While some other critics do not take issue with the shift from agriculture to manufacture but do question the shift into tertiary activity. Arguing that difficulties arising

out of imperfect specialization in under-developed economies and from statistical incomparability with shifts between paid and unpaid activity they see no logical reason why tertiary employment necessarily increased. They insist that employment statistics for agriculture and manufacture hide many tertiary activities that become recorded as tertiary performance only as specialization increases.

There is a negative correlation between the rise in national income and the percentage share of agriculture. As an economy progresses and there is a rise in the per capita income, it has been observed that the share of the agricultural sector in the national income declines. The percentage contribution of national income of tertiary sector also changes when economic growth takes place.

Productivity per worker in the agricultural and manufacturing sectors exhibit larger disparities in under-developed countries. This is due to disparities in the income levels of the industrial and agricultural sectors in under-developed countries. The under-developed countries have agricultural population
which have lower per capita income. Added to this is the unfortunate fact that the distribution of national income is uneven in favour of the non-agricultural sector, leaving the agricultural sector incomes still lower. For instance, in India nearly 66% -70% of the working force is dependent upon agricultural sector but the contribution of the agricultural sector to the national income is approximately 40% of the national income. On the other hand, contribution of the non-agricultural sector is more than half while the working force employed is only one-third. Prima facie, it is clear that the per capita income is not representative of the income levels of the agricultural sector. Doubtlessly, the under-developed countries are lagging in product per worker in agriculture as they are even in product per worker in the non-agricultural sector compared to developed to developed countries.

An inter-sectoral comparison of product per worker reveals that the manufacturing sector lingers behind the services sector. The difference between services and manufacturing sector in product per worker is far-reaching in the case of under-developed countries and gets narrowed as the income rises. The service sector is a
broad category including such sub-sectors as, transport, commerce and other services. So the services sector in its entirety may not give us an idea about the relative role and the position of the other sectors in the growth process. Nonetheless, it is apparent that the underdeveloped countries have sectors where the productivity disparities are of larger magnitude as compared to developed countries.

The role of industries and agriculture is largely complementary. The physiocratic outlook that only the agricultural sectors is capable of producing surplus and the other activities do not produce surplus but only transform value created in agriculture is no more relevant. In sharp contrast, modern economists concerned with economic growth have regarded transformation of an agricultural economy into a mature industrial economy as crucial for economic development.

Agriculture plays many roles in the processes of economic growth and development. These can be summarized under four headings: (1) providing more food and raw materials, (2) serving as a market for the products of the industrial sector, (3) supply savings to other
sectors of the economy, and (4) providing productive employment. Poor agricultural performance hinders the growth of the rest of the economy and limits the resources available to promote development. In most developing countries, the agricultural sector not only produces food for domestic consumption but also supplies a major share of the foreign exchange earnings from commodity exports. The more agricultural products a country can export, then more foreign exchange it has available for those items needed for the industrialization process.

Another important aspect of food production is its contribution to the formation of human capital. Until quite recently, economists regarded food strictly as a consumption good. We now recognize that part of food utilization really should be considered an investment which improves the quality of the labour force. Malnutrition causes both mental and physical retardation, and poor diets also affect general health. As a result, worker absenteeism is higher and productivity lower than would be the case with a well nourished labour force.

The second major role of the agricultural sector in the process of development is to provide a market for the products of the industrial sector. The speed of the industrialization process itself will depend on how rapidly agricultural incomes are rising. In the early periods of economic growth, rising income in the agricultural sector can expand the market not only for consumer goods but also for agricultural implements and machinery.

There are three major stages in the evolution of agricultural production. The first and most primitive is the pure, low-productivity subsistence farming. The second stage might be called 'diversified' or 'mixed' agriculture, where part of the produce is grown for self-consumption and part for sale in market. Finally, the third stage represents the 'modern' farm which is exclusively engaged in high-productivity specialized production.

agriculture catering entirely for the commercial market.

The transformation of the predominantly agrarian structure is a necessary condition for modern economic growth. The modernization of agriculture necessarily involves a transition from a traditional semi-subsistence rural economy to a commercially oriented one which is heavily dependent upon the non-farm economy for inputs and markets.

Agriculture is the largest sector of the Indian economy. Apart from meeting the entire needs of food and fodder in the economy agriculture sector provides employment and work to an overwhelming majority of Indian masses. In addition to employment, agriculture contributes a sizable part of exports and foreign exchange earnings. The importance of agriculture sector is gauged by the fact that it has been the source of supply of raw materials to the industrial sector. However, this important sector of Indian economy is very weak and suffers from several shortcomings.

Indian agriculture has its own peculiarities. Indian agriculture is overdependent on uncertain monsoon. There are large variations in climatic conditions which makes it possible for the country to have multiplicity of crops. Agricultural conditions and practices differ from state to state in the Indian Union. Soil conditions, climatic factors and systems of cropping produce difference in agricultural productivity. Indian agriculture has continuously experienced difficulties arising out of difference in agricultural conditions and practices. Comparing Indian agriculture with that in other countries we find that productivity per acre is distinctly low in India. Indian agriculture is influenced by size of holdings, property rights, inheritance, and patterns of land tenure. Small farmers predominate the agricultural scene. This is largely due to the backward nature of agriculture and rapidly rising population which is leading to subdivision and fragmentation of holdings. The pattern of land ownership is characterized by large inequalities. A dominant feature of Indian agriculture is mass unemployment, underemployment and disguised unemployment.
We have already stressed the complementary roles of agriculture and industry. Industrialisation has a major role to play in the economic development of the under-developed countries. The gap in per capita incomes between the developed and under-developed countries is largely reflected in the disparity in the structure of their economies; the former are largely industrial economies, while in the latter production is confined predominantly to agriculture. And since agriculture is susceptible to quick diminishing returns it is instrumental in generating poverty trap. Thus, industrialisation is the only effective solution to overcome the twin problems of over-population and low per capita income. The essential pre-condition for development is an all-round shift from low-productivity occupations to high-productivity occupations. Obviously, the net value of output per man is higher in industry than in agriculture. In addition, the industrial sector possesses a relatively high marginal propensity to save i.e. creation of surplus. The industrial sector contributes significantly to the eventual achievement of a self-sustaining economy with continued high levels of investment and rapid rate of increase in incomes and industrial employment. Besides,
the process of industrialisation is associated with the development of knowledge, attitudes and skills of industrial work, with experience of industrial management and with other attributes of a modern society which in turn are beneficial to the growth of productivity in agriculture, trade, distribution and other related sectors of the economy. As a consequence, any successful transfer of labour from agriculture to industry would contribute to economic development. Industrialization is thus a precondition for sustained economic development because it is both a consequence of higher income and a means of higher productivity. With the rise in income levels people tend to spend more on manufactured goods than on food. This differentiation in income elasticity of demand confers an advantage on the manufacturing commodities in the form of providing expanding market, while the differential in productivity makes it an attractive occupation to effect population transfer so as to arrest the tendency of diminishing returns in agriculture.

For a predominantly agricultural country like India with a vast manpower, large and varied resources, continental dimensions, industrial development is a necessary condition for economic development. First and foremost, industrial development alone can provide a continuing and secure basis for rapid growth of incomes. The empirical evidence suggest a close correspondence between the high level of income and industrial development. Secondly, beyond certain limits, the demands of the people are usually for industrial product alone. The income-elasticity of demand for the manufactured goods is high as compared to that for agricultural products. Thirdly, the income-elasticity of import goods is high. The disparities in elasticities point to the difficulty of earning adequate foreign exchange. The situation can be solved by industrialisation. Such industries may be established which are in the nature of import substitutes so that the gap between the elasticities of imports and exports can be bridged. Fourthly, establishment of industries alone can generate employment opportunities at an accelerated rate. Industrial development must be in accordance with the vast and varied resources that the country possesses and the diversity of demand patterns.
According to Isher J. Ahluwalia: The Indian Industry is characterized by high-cost low-quality, as it has evolved behind protective walls reinforced over a number of decades. Even with a significant degree of liberalisation and rationalisation of the industrial cum trade policy framework, it is going to take time before Indian industry can penetrate export markets. While efforts will need to be continued to improve competitiveness of Indian industry and promote export, the role of agriculture in the demand factor becomes that much more important. Efforts will have to be made to ensure that the growth of agricultural income goes hand in hand with the growth of industry. 7

Economists have been trying to gain a better understanding of the economy's growth performance. Most of them opine that an understanding of inter-sectoral relations and inter-sectoral asymmetries may well provide the key to enhance economic development.

There has been extensive literature, exploring the inter-relationship between agriculture and industry. It arises because agriculture still plays a dominant role in the Indian economy. The linkages between agriculture and industry can be classified into four categories, i.e. (i) supply of foodgrains from agriculture to industry to facilities absorption of labour in the industrial sector (ii) interdependence of agriculture and industry for productive inputs, i.e. supply of agricultural materials such as cotton, jute, sugarcane, etc., to agro-based industries and supply of fertilizer, electricity and agricultural machinery by industry to agriculture (iii) generation of demand for industrial consumer goods, e.g. sugar, textiles, edible oils, etc., as agricultural incomes increase, and (iv) possible generation of surpluses of savings in agriculture which can be mobilised for investment in industry and other sectors of the economy.

Apart from the fundamental dependence of industry on agriculture for the supply of foodgrains, there is a part of the industrial sector which relies for its materials supply on agriculture. This sector consisting of agro-based industries constitutes about one-third of the
value added in industrial sector. Its share has declined from 44 per cent of 1960-61 to its present one-third reflecting the increased importance of the non-traditional and heavy industries in our industrial structure. There has also been a shift from agricultural materials to synthetic materials in the case of some agro-based industries such as cotton textiles. In the recent years there has been a spurt in the establishment and growth of agro-processing industries. It would therefore be reasonable to expect a reduced dependence of industry on agriculture. The dependence of agriculture on industry for current inputs is already on the rise with Indian agriculture undergoing a process of modernisation. The increased use of fertilizers, electricity, diesel, etc., in the operation of tubewells are the principal examples of inputs from industry to agriculture.

Agriculture has its share of over 40 percent in the total value added in the economy is an important source of demand for industrial products. As agricultural incomes increase, this brings about an increase in the demand for industrial consumer goods and
some producer goods e.g. pumps, tractors, etc. In particular, consumer goods account for over a third of the value added in industry. In the case of certain consumer goods, like clothing, footwear, sugar and edible oils, total magnitude of rural consumption is over three times the urban consumption.

In the long run the reciprocal interactions between agriculture and industry, involving increase in the productivity and output of each, permit rapid growth in national income and in opportunities for productive employment. A rapid expansion of employment and of per capita income in the non-farm sectors implies a larger commercial demand for agricultural products which in turn permits more rapid growth of farms incomes.

8. Isher J. Ahluwalia- op.cit.