2.1 Introduction

The importance of agriculture in the economic development of a country is undeniable. In the words of Johnston and Mellor, "certain aspects of agriculture's role, appear to have a high degree of generality, because of special features that characterise the agricultural sector during the course of development". But the contribution of agriculture in the economic development varies at different stages in different countries. This was recognised by many economists at various periods of economic thought. For instance, in practice, the over-all rate of growth achievable in third World countries depends primarily on what happens to its agriculture. In the typical African or Asian economy, agriculture produces something like 50 per cent of Gross Domestic product (G.D.P.) while services account for 35 per cent of it and industry for only 15 per cent. Thus, the predominance of agriculture sector rather than manufacture sector becomes main determinant of growth of economy.

An attempt is made in this chapter, not only to examine the importance of agriculture in economic development but also to depict an outline of theoretical models regarding agricultural development vis-a-vis economic development.

2.2 **Nature and Significance of Agriculture:**

Agriculture is the oldest industry in the World and the largest even today. The major part of the population of the World is dependent upon it for a living. And its contribution to economic development of a country is significant. Economic development may be defined as transformation of an economy which is predominantly agricultural and traditional; into one of largely industrial and modern. In the former, agricultural and non-agricultural sectors remain separate presenting economic dualism, while in the latter they get integrated. The role and functions of agricultural development have figured prominently in the theories of development, particularly since the Second World War.

Most of the modern developed economies have achieved development prior to World War I. In the early nineteenth century, economists and policy makers, did not devote much
attention to the question whether agricultural development should precede industrial development or should be followed by it. Only since World War II importance was given to the role of agriculture in the process of economic development. But in the past thirty years there has been a strong bias in favour of rapid industrialization, largely due to a feeling that industrialisation is synonymous with economic development. Yet, again, recently it was found that even if the country is developed industrially, economic progress is not possible without progress in agriculture. To quote Jagdish Bhagwati, "Those who stress the role of industrialization generally under-estimate the importance of agricultural sector in developing economies. But the two need not be in conflict. Agriculture and Industry compete for national resources. But this does not mean that those who emphasis the need for agricultural expansion should necessarily be opposed to industrialisation". The biased strategy of neglected agriculture sector resulted in serious obstacles and several countries failed to enter the smooth path of economic development.

This situation induced economists to rediscover the importance of agriculture in economic development. The role and functions of agriculture came to be studied in depth. As a result, it was realised that industrialisation and agricultural development are not conflicting alternatives, but complementary ones. "Economic growth requires balanced expansion of various sectors of the economy and if the expansion potential in some crucial sectors (like agriculture) is low or non-existent, the expansion potential in other sectors cannot become effective. This is especially true of the critical division between industry and agriculture". 3

Primarily, agriculture has to supply food for an increasing population. Agricultural sector with unlimited supply of man-power, as Arthur Lewis pointed out, has to release surplus labour for industrialisation. It supplies raw material to the non-agricultural sector, as food for processing, and in the form of fibres, leather, timber, charcoal, etc. It supplies capital funds, through taxes and savings, to the non-agricultural sector. It also provides exports (both food and raw materials) directly or through processing in the non-agricultural sector, to the outside World. And finally it acts as a market for non-agricultural

products both for direct consumption and for investment from the non-agricultural sector. Agricultural stagnation is the main constraint on the rate of growth. It keeps down the living standards of the great majority of the people, and restricts their purchasing power, restricts also scope for industrialization.

2.3 Historical Experience:

England and other European countries initiated a spectacular acceleration of their economic growth within the brief span of some 20 to 40 years (which began at various dates during 1780-1850). It may be noted that England reaped the rewards of industrial revolution to a greater extent only after the agricultural development. In fact France, Belgium, Germany and Sweden also restored a firm base of rising agricultural productivity to facilitate industrialisation despite the fact that, unlike England, they had little land consolidation. But Laul Mantonx pointed out that "increasing agricultural productivity does not appear to have been a major source of funds for financing capital formation in England's industrial sector, but it did make possible substantial self-financing of capital

formation in the agricultural sector, which was thereby able to continue its upward progress in productivity and efficiency. Communist China too recognised the importance of achieving agricultural surplus in the process of Economic development. To quote William, H., Nicholls again "Russian economic progress was made possible by an initially substantial food surplus... having neglected agriculture crisis despite its remarkable industrial development."

In India too, during the planning era some of the State Governments accorded a high priority to agriculture. The First Five Year Plan accorded a top priority to agriculture and tried to build up the essential infrastructure of major irrigation projects. In a period of 33 years (1951-52 to 1984-85) the irrigation potential utilisation rose from 22.6 million hectares to 60.4 million hectares. The net area sown increased from 118.75 million hectares to

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7. Ibid., p.40.
141.77 million hectares during 1950-51 to 1982-83. In the same period the area irrigated more than once rose from 1.71 million hectares to 12.06 million hectares. The Economic history of the developed countries reveals that, agricultural development had become almost a precondition for overall economic development. It is rightly observed, "Historical records clearly show that no country has moved from chronic stagnation into the take-off stage of economic development without first achieving a substantial gain in agricultural productivity".

2.4 Role and Functions of Agriculture:

Agricultural progress is a strategic element in the process of economic development of a country. It has already made a significant contribution to the economic prosperity of advanced countries; and its role in the economic advancement of developing countries is of vital importance. To quote S.V.L.N. Row, "the industrial sector is so small in the under-developed economies that even if it expands at an


extraordinary rate, its influence on the growth rate of the economy as a whole is relatively small".  

The reasons for the importance of agricultural development lies in the fact that agriculture has primarily to provide adequate food supplies to the fast growing population. An increase in the net output of agriculture itself represents a rise in country's G.N.P. A rapid growth of agricultural output with fair amount of stability is important, as it enables food supplies to be available at relatively lower prices. In that case the non-agricultural sector, requires less of its income to purchase food, and this helps to increase effective demand for the output of non-agricultural sector. Furthermore, relatively, declining food costs imply higher real incomes, thus reducing the pressure to increase wage earnings. Also, as T.W. Schultz pointed out, "A fall in farm product prices sets the stage, other things remaining equal, for a transfer of resources out of farming". 


All these, in turn, increase the output in the non-agricultural sector and thereby encourage the entrepreneurs to invest in non-agricultural sector. But in the early stages of economic development it is not an easy task to achieve such rate of surplus leading to lower prices of farm product. In the early phase of economic growth the income elasticity of demand of food in under-developed countries is higher than that in high income nations. The income elasticity, estimated at the order of 0.6 or higher in the low income countries is twice or thrice as much as that in Europe, the U.S. and Japan. If domestic production fails to increase adequately, the gap has to be filled in by imports, as India has been doing, involving a heavy drain on foreign exchange resources.

2.5 Interdependence Between Agricultural and Industrial Sectors:

There is a close interdependence between agriculture and industry. The farm sector has to supply the raw material for growing industries. For instance, nearly on third of India's industrial output till recently depended upon the supply of agricultural commodities such as raw cotton, jute.

oil seeds and rice. The manufacturing sector has to supply agricultural inputs and tools such as chemical fertilizers, pumpsets, tractors, harvesting, sowing and threshing machines to farm sector.

Agriculture has to release labour force for industrial development by increasing its efficiency. On account of surplus labour in the agricultural sector in the under-developed countries, man-power for manufacturing sector can be drawn easily from agriculture. "Agriculture sector can even provide much labour at zero opportunity cost because a considerable part of the labour force in agriculture is redundant in the sense that its marginal productivity is zero". If labour shortage exists in agriculture sector, the industries can be supplied labour by way of labour-saving machines in order to boost up the agricultural production. It is in view of this that Higgins pointed out the necessity of industrialisation without it, land consolidation and farm mechanisation could hardly increase the scarcity of labour. So, proper balance between the growth of agriculture and that of other industries is necessary.

Agricultural efficiency raises rural income levels and creates an effective market for more and new industrial goods as follows. First, increase in agricultural productivity which results in higher per capita farm income allows farmers to buy more agricultural inputs and consumer goods from the industrial sector. The second element in the market contribution occurs as services, such as, processing, packing and distribution are developed to process and transmit the marketable agricultural produce to find consumers. The improved inputs enhance productive efficiency in agriculture and so provide increased amounts of marketable agricultural products. And the farmer's own requirements can be exchanged for goods and services in the industrial sector. This feed-back mechanism is vital to steady and uninterrupted industrial progress. Thus, higher agricultural incomes promote rural savings that could be mobilised for industrial development. "With the rising of agricultural productivity with comparatively smaller out-lays" observes, Johnston and Mellor, "Greater is the scope for agricultural sector to make contribution to the capital requirements for overall economic growth".16

The interdependence between agriculture and industry is becoming stronger as application of science and technology in agriculture induces innovations in respect of industrial products which are used for agricultural production. The entire industrial sector depends heavily on the supply of food from agriculture sector. Since, a sizable part of wages of industrial workers is spent on food items, a sustained supply of food from agricultural sector is a necessary condition for stability in the industrial sector.

2.6 Contributions to Economic Development:

Economically backward countries must often buy capital goods and technical know-how from present advanced countries. If agricultural products are large enough to build exportable surplus, it will earn needed foreign exchange to pay for imports of essential equipment, technical know-how and industrial raw material. "It is hardly a surprise that in the initial stages of growth of many presently developed countries", observes Simon Kuznets, "Agriculture was a major source of exports and that the resulting command over the resources of the more developed countries played a strategic role in facilitating modern economic growth". 17

Also, in the words of S.V.L.N. Row "In view of the urgent need for greater foreign exchange earnings and the lack of alternative opportunities, considerable expansion of agricultural production for export is often a desirable policy even though the World supply - demand situation for the commodity may not be favourable".  

The most difficult problem of under-developed countries which are making strenuous efforts to achieve economic progress, is the large amount of capital required. Since it is possible to increase agricultural productivity with moderate capital out-lays, agriculture can make a net contribution to industrial development in addition to some improvement in the levels of consumption of the farm population. Historical evidence indicates that in underdeveloped countries in which agriculture constitutes the major part of the national economy, sustained economic growth cannot be achieved without a significant net contribution to capital requirements from agriculture.

Agricultural growth largely contributes to capital formation in the under-developed countries. Without adequate capital formation, rapid economic growth cannot be attained. There are three ways in which the farm sector contributes to capital formation. First, increased agricultural productivity benefits the non-agricultural sector through lower food prices, and thereby enlarging its real income. This in turn, will facilitate increased savings and capital accumulation in the urban sector. Second, increased farm output may generate higher levels of farm income, part of which may be saved. These savings may be utilised in financing the growth of the non-agricultural sectors. Thirdly, capital can be derived through a well devised tax system. In China, Russia and Japan, farm tax revenues helped significantly in their economic growth. The system of agricultural taxation may be diverse in form, such as land tax, agricultural income tax, export duty and irrigation tax. When agricultural incomes rise, a larger tax revenue can be secured on a rising income base. However, a policy of ruthless or too high taxation, as that of taxes on agricultural exports in Argentina, would be like "killing the goose that laid the golden eggs, which were expected to pay for the programmes of industrialisation".  

Agriculture in an underdeveloped economy has, therefore, to provide food for an expanding population with rising purchasing power, provide capital including foreign exchange for the economic transformation and provide a direct increase in rural welfare which in turn expand industrial sector by expanding a market for consumer products. Thus, expanding industrial sector is closely associated with increased income in agricultural sector.

Significance of agriculture in the theories of development can be traced to as far back as eighteenth century in the physiocrats age. Physiocrats believed that only agriculture produces an economic surplus of 'net product' over cost of production. For them, non-agricultural sector was 'sterile' in the sense that it did not generate any economic surplus.

The Classical Economists, who followed physiocrats carried out the same tone regarding the importance of agriculture in economic development in their theories of development. For instance, Adam Smith in his work "The wealth of Nations" specifically refers to the agricultural sector. Even David Ricardo clearly recognised the importance of agriculture in the economic development in his two sector model.
Again, in 1954, W.A. Lewis revived the old theoretical interest in the role of agriculture in economic development and concluded that the agricultural sector produces income surplus which could be diverted to capital formation in the industrial sector and industrial sector should also be induced to set up agricultural input factories. Thus, one should be complementary to another in the overall economic development of a country.

Ragnar Nurkse, also made a significant contribution for understanding the problems of economic development of over-populated, under-developed countries, from Southern-Eastern Europe to South-Eastern Asia. He observed that, chronic and large-scale disguised unemployment in agriculture is common in these countries and there is a tremendous waste of labour. The disguised unemployed labour force can be transferred for the accumulation of capital. The capital projects that can be constructed with disguised unemployed labour force include irrigation, drainage, road, house and etc. The disguised unemployed labour force may be made to work on capital projects while they continue to be dependent for their subsistence on the productive peasants remaining

on the farms. Such labour force working on capital projects can also be fed, as by Nurkse, through the means of voluntary savings, taxation of conspicuous consumption and capital from abroad. Thus, the rural surplus labour can be mobilised for capital building, which in turn can help the development of agriculture too.

So far, we have provided a bare outline of the theory of agricultural development. However, all the economists concur with the point that "the diversity of agricultural conditions and of the general economic situation in different developing countries and within different forming regions of an individual country - makes it quite impossible to formulate universally valid policies or prescriptions for promoting agricultural development". But, yet it may be taken as the general consensus that, "an agrarian revolution, proceeding and running parallel with industrial revolution, is a sound strategy that could take a country along the golden bath of economic development".


2.7 Importance of Agriculture in Indian Economy:

It is obvious, that the agricultural sector has to play an important role in the Indian Economy where its contribution to national income, foreign exchange and employment is undoubtedly impressive. Official estimates of national income and its components are available on a regular basis, only since 1948-49. It is estimated by individual scholars like Dadabhai Naoroji, Curzon, Vakil, Muranjan and administrators at different points of time that the contribution of agriculture to national income since the later part of the nineteenth century till about World War I had remained around 66 per cent (or two-thirds).\textsuperscript{23} V.K.R.V. Rao estimated that the proportion of agriculture to the total output was 57 per cent during the period 1925-29 and 53 per cent for 1931-32.\textsuperscript{24} It is observed that the share of agriculture in national income has been decreasing steadily. For instance, the share of agriculture in national output was 59 per cent in 1950-51, 54 per cent in 1960-61, 48 per cent in 1970-71, 40 per cent in 1980-81 and 35 per cent

\begin{enumerate}
\item \textsuperscript{23} India, Government of National Commission on Agriculture, Vol.II, New Delhi, Ministry of Agriculture and Irrigation, 1976, p.2.
\item \textsuperscript{24} Mukharjee, P.K., "Agricultural Output and National Income in India", in Studies in Agricultural Economics, Bhattacharjee, J.P., (editor), Tenth International Conference of Agricultural Economics, Bombay, Indian Society of Agricultural Economics, 1958, pp.4&5.
\end{enumerate}
in 1985-86 (quick estimates). But it is not clear as to how much of the decline is due to the differences in methodology adopted for computation.

Agriculture is the main source of livelihood for the majority of the population in India. According to decennial census reports, the percentage distribution of workers engaged in agriculture to total workers was 72 per cent in 1951. In 1961 this percentage was 69.5, in 1971 it was 69.7 per cent and in 1981 this percentage was 60.5 (excluding Assam). These figures reveal that the dependence of the workers on agriculture has not significantly changed over the last three decades.

The pressure of population on agricultural sector continues to persist in India. This results in wide-spread under-employment and unemployment in rural sector.

Rajkrishna estimated that for 1971 unemployed and under-employed are 26.2 million persons who are available for work, whereas at the beginning of the seventh plan i.e.,

in 1985 the estimate of usual status unemployment 32nd round survey estimated 22.36 million, rural persons are unemployed in the country. Efforts should be made to create gainful employment to the under-employed or unemployed labour in the agriculture and allied sectors.

The contribution of agricultural sector to foreign exchange resources is very significant in India. Agriculture sector contributed nearly 42 per cent in 1965-66, 31 per cent in 1970-71, 36 per cent in 1980-81 and about 30 per cent in 1983-84. It is observed that the share of agricultural sector in the total exports of the country is slightly decreasing but it is greater than the share of agricultural imports (i.e., 18 per cent agricultural imports to total imports during 1983-84).

The interdependence between agriculture and industrial sector is quiet clear in India. For instance, in 1964-65 "out of total agricultural production, about 12.5 per cent went from agriculture to agriculture while nearly 23 per cent was utilised by the industries, the rest

went directly to final consumption. The value of agricultural inputs (Rs.2,085 crores) formed about 20.6 per cent of the total value of industrial output (Rs.10,106 crores) in that year. Similarly, the industrial sector delivered goods worth of Rs.228 crores to agriculture which is about 11 per cent of the amount sold by agriculture to industry and accounted for 2.53 per cent of the total output of the agricultural sector. 29

After the introduction of the new farm technology, the dependence of agriculture on industry is gradually increasing for certain inputs like fertilizers, pesticides, pumpsets, tractors, power tillers etc. For instance, between 1971-72 and 1984-85 the consumption of fertilizers has gone from about 2.7 million tonnes to 8.2 million tonnes. 30

The interdependence between agriculture and industry clearly shows that both sectors have a vital place in the Indian economy and they are indispensible for sustained and rapid economic development. In emphasizing the role of

agriculture in the development of Indian Economy, it is observed that "if one sector limits the growth of the other, it is more likely to be a case of agricultural growth limiting non-agricultural sector than vice-versa".  

2.8 Conclusion:

Agriculture, as we have seen is the oldest, largest and the most important sector in the process of economic development. In most of the developing countries, agriculture is the only major existing industry. Hence, most of these countries have to depend much upon the development of agricultural sector for their economic development in order to meet the demand for food, to earn foreign exchange for over-head investment and expansion of secondary industries to meet the growing demand for employment and to raise money incomes of rural people. Historical experiences of most of the developed countries like England, U.S.A., U.S.S.R., Canada, Japan etc., reveal the importance of agriculture in the process of the countries economic development at the outset of industrial revolution. For over-all growth of an economy, proper balance between agriculture and industry is essential as these two industries are inter-dependent. Except for countries which have rich mineral

resources, no under-developed country can grow rapidly by neglecting agriculture. Further, agriculture has to depend upon industry for machinery, agricultural implements and industry has to depend upon agriculture for food and raw material like cotton, jute, oil seeds etc. Hence, for a healthy and steady economic development of any nation, a proper balance between agriculture and other sectors must be maintained.

Therefore, to achieve progressively higher rates of agricultural growth, proper measures should be taken to step-up agricultural productivity. In India, even though the farm productivity levels have been increased during the planning era, there are marked inter-state, inter-regional and intra-regional variations in the agricultural productivity. The well-endowed states or regions or districts are prone to achieve higher levels of farm productivity and others are found to be lagging behind. The variations in agricultural growth lead to inter-regional and intra-regional inequalities in income levels within the country. Therefore, to sustain higher agricultural growth, the productivity variations should be minimised and prepare all the states, regions and districts, as equal partners in the overall growth of a country. Before we make a study of inter-district variations in agricultural productivity in Rayalaseema region, it is but fitting to the present a profile of the agricultural economy of Rayalaseema region.