Chapter-II

AGRICULTURE IN INDIA AND ANDHRA PRADESH

India is a country that leaves one spellbound with its alluring contrasts and striking features in all that it beholds! Agriculture is not only the dominant occupation of people in India, but it is also one of the most important economic sectors of the country. The Agricultural wealth of a country is the barometer to gauge the extent of economic development of a country. Developed countries of yester years and developing countries of the present era have been primarily agricultural because the national income and the per capita income of a country directly depend upon the agricultural wealth of a country. In Asian countries where more than half of the global population reside, innovative methods of agricultural production resulting in substantial agricultural produce and making food available to its population indicates its economic development.

In a country like the present Russia, formerly part of the U.S.S.R, the Siberian desert was transferred into agricultural farms by adopting modern techniques in the field of agriculture.

Countries like the United States of America, Canada, Brazil in the western hemisphere having vast and fertile land have become the world leaders in agricultural production particularly wheat, soya bean etc., and the agricultural wealth of those countries formed the back bone of the spontaneous industrial growth leading to their prosperity. Japan with a cluster of Islands, small in extent and area showed remarkable progress in the fields of agriculture, Sericulture and pisciculture.
Developing countries like India, Pakistan, Srilanka and some other Asian Countries are backward, to some extent, over populated and traditional in out-look and are exposed to the vagaries of market settlements resulting in low per capita income. Because of the over population there is considerable stress and demand on the government for providing the minimum basic requirements of food and clothing. Inadequacy of food supplies result in political unrest adversely effecting the overall development of the state.¹

Agriculture in India is a saga of success. Punjab Singh (2002)² remarks, Indian Agriculture is known for its multi-functionalities of providing employment, livelihood, food, nutrition and ecological securities’. ‘Realising an agricultural dream’, from a nation dependent on food imports to feed its population, India today is not only self-sufficient in grain production but also a substantial reserve. India has benefitted a lot from agricultural activities. India is largest producer of cashew nuts, coconuts, tea, ginger, milk, turmeric etc. The progress made by Agriculture in last four decades has been one of the biggest success stories of free India.

Agriculture is the largest economic activity in India. It provides not only food and raw materials but also employment for a large section of the people. Being the dominant sector the quantum of growth in the national output depend on the output in

agriculture. For the same reason, it has to provide the capital required for its own development and make available the surplus for national economic development.\footnote{Mellon Jon W. “The Economics of Agricultural Development”. Vora & W Publishers Private Limited, Bombay.}

The government plays a very important role in initiating and sustaining agricultural development putting maximum effort. India is richly endowed with nature for Agricultural Production. It has the largest acreage of irrigated land in the world. Nearly 75\% of Indians depend upon agriculture and allied activities for their livelihood. Agriculture contributes around 26\% of GDP of the nation. In terms of production, it is next to China and almost on par with the food production of U.S.A. It is true that there are rapid strides in the Industrial and Service sectors dominating agricultural sector, yet agri-sector plays a prominent role in the Indian Economy, because it is a well settled proposition to say that agricultural advancement of a country usually precedes its Industrial growth. It is rightly said agricultural activity in India is not viewed as a commercial activity without expecting much profit but as a way of life, livelihood and main occupation of rural folk. Some people say Agri-sector in India is not an area of priority but the fact is it is providing livelihood and employment opportunities almost for entire rural India. There are 6 lakhs villages in India in 619 districts almost all villages directly or indirectly depends on the agri-sector. Thus there are 20 crore households in rural India directly depending upon agricultural incomes. Thus it’s true what Mahatma Gandhi said, “Indian Economy Lives in Villages”, but the key to success of Indian economy lies in tapping and utilising the vast potential for wealth generation in the area of agriculture and its allied activities like horticulture, floriculture, apiculture, sericulture etc. Total Population of India as well as total population of the world has rapidly
increasing. The rate of food grain growth is substantially lower than the average population growth rate. World-wide about two billion people are lacking food security and 825 million people are chronically malnourished, according to a recent estimate by U.N. Food and Agriculture Organisation. Food Security is defined as the ‘physical, economic, social and ecological access to balanced diets (and safe drinking water) so as to enable every individual to lead a productive and healthy life in perpetuity’.\(^4\) Hence, the very urgent need is the policy makers and government should take responsible steps to improve the agriculture sector and eradicate poverty and food starvation in the world.

“If we seed the Agriculture, it will feed the Nation.” It is not an exaggeration that in the early Post-Independence era agri-sector earned valuable foreign exchange.

**INDIAN AGRICULTURE**

Agriculture is the noblest of all alchemy; for it turns earth and even manure into gold conferring upon its cultivator the additional reward of health. Agriculture in India has long history dating back to ten thousand years. India is bestowed upon with diversity of soil and growing conditions and untapped production potential in addition to the vast human resources which made India basically an agrarian society where sole dependence has been on agriculture since times immemorial. Agriculture which had the responsibility to feed 350 million in 1947 has now over 120 billion people to feed, which is a huge responsibility. India has achieved this feat by multipronged strategies and technologies such as green revolution, blue revolution, white revolution and of course the latest yellow revolution and is now poised with the rainbow revolution. The Green

Revolution in Wheat and Rice, White revolution in milk, yellow revolution in oilseed and the blue revolution in fisheries have augmented the food basket of the country. But many technological challenges remain.\(^5\) In terms of area, India ranks seventh in the world and in terms of population, it ranks second. With a total geographical area of 328.7 million hectares and reporting area at 306.03 million hectares, in absolute size India is really a big country. The net cropped area which was 41.7 per cent of the reporting area in 1950-50 has increased to 46.1 per cent in 1999-2000 and it is believed that the area under net cropped area has reached a saturation point. Under such a scenario, when the present proportion of area under cultivation in India is higher than in most of the countries in the world it is not advisable to bring more area under plough in India as it may endanger the space for other uses.\(^6\) Besides a considerable decline in rate of growth of area, production, productivity and area under irrigation the steering committee on agriculture plan has observed a significant gap between the performance and potential as revealed by the actual yield and yield with improved practices adopted by the farmers. This gap has to be reduced to increase the agricultural GDP over the years. Agricultural production can come through increase in multiple cropping, area under irrigation and productivity levels as net sown area over the years have become stagnant.\(^7\)

Expansion in the gross cropped area and substitution of low value crops with high value crops bring in changes in cropping pattern. The growth of area under different individual crops it is found that acreage under rice, wheat and sugarcane increased at the

\(^{5}\) Harendar Raj Gautam (2010). The Path of the Indian Agriculture and Way ahead, Kurukshetra, January.
\(^{7}\) Agricultural Prosperity and Budget by Etali Sarmah and Bedanga Bordoloi of National Institute of Agricultural Extension Management (MANAGE), Government of India, Hyderabad.
cost of coarse cereals. In the 1990s the area under oilseeds, cotton and sugarcane indicated increasing trend. Thus deceleration in area under food grain crops and rise in area under non-food grain crops have been witnessed. Of late (during the period between 1994 and 2004) prospective farmers have been showing preference in favour of rich cash crops. These changes in supply situations cause marketing instability/bottlenecks, which upset the farmers’ calculus significantly.

**Irrigation facility**

India shares 16 per cent of the world population and only 4 per cent of the world water resources. Therefore, water resources must be utilised and conserved rationally and efficiently. About 40 per cent of the gross cropped area is also under irrigation. The productivity of one hectare of gross irrigated area is reported to be 2.75 times, the productivity of the un-irrigated area. According to the official estimates the available water resources can provide irrigation to 140 million hectares area. As only 76.4 million hectares of land has got the benefit of irrigation facility, another 63.6 million hectares of land can get irrigation facility. Thus, tremendous scope exists for the exploitation of its irrigation potential. However, it requires sharp increase in public investments.

**Production**

Growth rate results of production indicate that among all the five decades in post-independence India, highest growth rate is realised during the decade of 1990s. This is the result of three factors as under:

- Diversification towards commercial crops
- Highest expansion in gross irrigated area
- Favourable terms of trade.
Future trend

Based on the past and present performance of the agriculture sector, a projection has been made for the likely expansion of area under different crops and their production. Though scope exists for increasing the cropping intensity by increasing the irrigation intensity, in the present analysis, it is assumed that the irrigation intensity would increase taking the past and present trend. The other assumptions for the estimation of the future trend are as under:

- A linear relationship exists between the past, present and future trend in area, irrigation provision and productivity of different crops.
- Net cropped area has reached a saturation point and it cannot be expanded.

Table II.1

TABLE SHOWING THE PROJECTION OF GROWTH OF DIFFERENT ASPECTS OF INDIAN AGRICULTURE

<table>
<thead>
<tr>
<th></th>
<th>2000-01</th>
<th>2010-11</th>
<th>2020-21</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population size Area (Million hectares)</td>
<td>1028.74</td>
<td>1177.87</td>
<td>1338.35</td>
<td>30.10</td>
</tr>
<tr>
<td>All crops</td>
<td>159.20</td>
<td>165.50</td>
<td>168.10</td>
<td>5.59</td>
</tr>
<tr>
<td>Gross Irrigated Area</td>
<td>76.40</td>
<td>89.70</td>
<td>103.33</td>
<td>35.25</td>
</tr>
</tbody>
</table>


With the growth of population, demand for land and food have been increasing. Though agricultural production has increased, the per capita production has come down. It is understood that the scope for increasing agricultural production to match rising
population, with the existing technology, is difficult. Believing that net cropped area at 46% of the reporting area into the net cropped area is almost closed, and therefore, the future increase in food production must come from increase in yield and cropping intensity. Need of the hour is greater investment and accountability on research and extension, expansion and development of rural infrastructure including organised markets, improved farmer education and effective involvement of the corporate sector in knowledge dissemination and investment in agriculture to achieve greater production efficiency.

One of the biggest success stories of Independent India is rapid strides made in field of Agriculture. The importance of Agriculture to India can be summed up with the statement, “If Agriculture survives, India survives.” Analysing the growth of Indian Agriculture over the last five decades, Venkat Reddy\textsuperscript{8} identifies the distinct phases in development of agriculture considering it as base the developments in Agriculture with reference to India from Independence can be narrated as follows:

Since Independence in 1947, the share of agriculture in GDP has declined in comparison to the growth of Industrial and Service sectors.

Indian Agriculture in the pre-independence was subsistence occupation. It was only after advent of planning some farmers started adopting agriculture on commercial basis.

Starting from 1951, the different Five Year Plans laid stress on the development of markets, On-farm and Off-farm storage structures, facilities for standardisation, packaging, transportation etc.

The country faced severe food shortage and crisis in early 1960s which forced the policy makers to realise that continuous reliance on food imports and aid imposes heavy costs in terms of political pressure and economic instability and there was a desperate search for a quick breakthrough in agricultural production. Dependence on Agriculture in early 1960s convinced planners that India’s growing population as well as concerns about national independence, security and political stability required self-sufficient in food production. This perception led to program of agricultural improvements called the Green Revolution. Since 1960’s food production had increased faster than rate of growth. United Nations Food and Agricultural Organisation (UNFAO) observed that in 40 years between 1961 and 2001, India more than doubled its population from 452 million to more than 1 billion. At the same time, it nearly tripled its grain production from 87 million tons to 231 million tonnes. India owes its self-reliance in Agricultural production to Borlauge untiring efforts.

In 1980’s despite three years of meagre rainfall and a drought in middle of the decade India managed to get along with few imports because of growth in food grain production and development of large buffer stock against potential agricultural shortfalls.

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9 The Path of Indian Agriculture and way ahead, Harender Raj Gautam in Kurukshetra, January, 2010.
By early 1990’s India was self sufficient in food grain production. Agricultural production has kept pace with food needs of growing population as a result of increased yield in crops.

Tremendous strides have been made later. All time high record of production of 209 million tonnes of food grains was made in 1999-2000 and 137 million tonnes of fruits and vegetables.\(^{11}\)

Domestic demand for food grains is expected to increase from 207 million tonnes in 2004-2005 to 235.4 million tonnes by end of 2020-2021. Meeting this demand would require 1.86% annual growth in food grains production during 11\(^{th}\) Plan and 2% per annum beyond that.

Indian Agriculture has now reached the stage of development and maturity much before the now advanced countries of the world embarked on the path of progress. Agriculture now is one of the strongholds of Indian economy and accounts for 18.5% of country’s GDP. The average growth rate of agriculture and allied sectors during 2006-2007 and 2007-2008 has been more than 4% as compared to average annual growth of 2.5% during 10\(^{th}\) Five Year Plan.

According to the Rabobank report the agri-biotech sector has been growing at a whopping 30% since 2005 and is likely to sustain.

From a nation dependent on food imports to feed its population India today is not only, self-sufficient in food grain production but also has substantial reserves. Today India ranks second world wide in farm output.

\(^{11}\) Concept paper on reforms in APMC Act.
Economy of India is the 12th largest economy in the world by nominal value and fourth largest by Purchasing Power Parity (PPP). In 1990s following economic reform from socialist inspired economy of post-independent India the country began to experience rapid economic growth as markets opened for international competitors and investors.

According to the Budget 2010-2011 Agriculture seems to be poised for major growth push, thanks to increase of nearly 21.6% in central plan outlay for agriculture and allied sectors. ‘Agriculture sector occupies centre-stage in our resolve to promote inclusive growth, enhance rural incomes and sustain food security’ declared Pranab Mukherjee, Finance Minister in budget speech on February 26, 2010 in Lok Sabha. He proposed further infusion of technology in this sector to augment agricultural production.

The four pronged strategy for boosting farm production includes,

- Increase in agricultural productivity by extending green revolution to eastern region of the country for which sum of 400 crores has been earmarked for this purpose
- Reduction in wastage of farm produce
- Credit support to farmers.
- Thrust to food processing sector.\(^\text{12}\)

India has adopted “Vision 2015” which aims to triple the size of the food sector in 10 years time by increasing the level of processing of perishables from 6 to 20 per cent, value addition from 20 to 35 per cent share in global trade from 1.6 to 3 per cent. This

\(^{12}\) Pushing Agricultural Growth-Surinder Sud, Yojana, March 2010.
would require making processed food affordable domestically and competitive globally. An investment of about 1,10,000 crores is envisaged in the next ten years.

ECONOMISTS PRE-OVERVIEW OF INDIA’S AGRICULTURAL ECONOMY

In the early 1950’s, half of India’s GDP came from the agricultural sector. By 1995, that contribution was halved again to about 25%. As would be expected of virtually all countries in the process of development, India’s agricultural sector’s share has declined consistently over time.

In the last five decades a number of internal and external factors have changed the objectives of the agricultural policy and the instruments used to realise the objectives. Agricultural policies at the sectoral level can be divided into,

(i) Supply side, and
(ii) Demand side policies.

The supply side policies include those relating to land reform and land use, development and diffusion of new technologies, public investment in irrigation and rural infrastructure and agricultural price supports. The demand side policies on the other hand, include state interventions in agricultural markets as well as operation of public distribution systems. These policies have macro effects in terms of their impact on government budgets.

During the pre-green revolution period from independence to 1964-1965, the agricultural sector grew at an annual average of 2.7%. This period saw a major policy thrust toward land reform and the development of irrigation. With the green revolution period from the mid-1960s to 1991, the agricultural sector grew at 3%.
Table II.2

STATEMENT SHOWING THE AVERAGE GDP GROWTH RATES OF AGRICULTURE AND OTHER SECTORS AT 1999-2000 PRICES

(Per Cent)

<table>
<thead>
<tr>
<th>Period</th>
<th>Period</th>
<th>Total Economy</th>
<th>A.G. &amp; Allied</th>
<th>Crops &amp; Livestock</th>
<th>Non A.G.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Green period</td>
<td>1951-52 to 1967-68</td>
<td>3.7</td>
<td>2.5</td>
<td>2.7</td>
<td>4.9</td>
</tr>
<tr>
<td>Green Revolution period</td>
<td>1968-69 to 1980-81</td>
<td>3.5</td>
<td>2.4</td>
<td>2.7</td>
<td>4.4</td>
</tr>
<tr>
<td>Wider Technol. Dissemination. Period</td>
<td>1981-82 to 1990-91</td>
<td>5.4</td>
<td>3.5</td>
<td>3.7</td>
<td>6.4</td>
</tr>
<tr>
<td>Early Reforms period</td>
<td>1991-92 to 1996-97</td>
<td>5.7</td>
<td>3.7</td>
<td>3.7</td>
<td>6.6</td>
</tr>
<tr>
<td>Ninth and Tenth Plan</td>
<td>1997-98 to 2006-07</td>
<td>6.6</td>
<td>2.5</td>
<td>2.5</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Table II.3

STATEMENT SHOWING THE STATE AND REGIONWISE GROWTH RATE OF AGRICULTURAL OUTPUT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Haryana</td>
<td>3.74</td>
<td>5.04</td>
<td>2.30</td>
<td>3.59</td>
</tr>
<tr>
<td>2</td>
<td>H.P.</td>
<td>2.01</td>
<td>2.74</td>
<td>1.01</td>
<td>1.87</td>
</tr>
<tr>
<td>3</td>
<td>J. &amp; K.</td>
<td>4.31</td>
<td>0.17</td>
<td>0.60</td>
<td>2.13</td>
</tr>
<tr>
<td>4</td>
<td>Punjab</td>
<td>5.58</td>
<td>4.22</td>
<td>1.64</td>
<td>3.98</td>
</tr>
<tr>
<td>5</td>
<td>U.P.</td>
<td>2.67</td>
<td>3.06</td>
<td>1.40</td>
<td>2.36</td>
</tr>
<tr>
<td></td>
<td><strong>N-W Region</strong></td>
<td><strong>3.39</strong></td>
<td><strong>3.55</strong></td>
<td><strong>1.58</strong></td>
<td><strong>2.85</strong></td>
</tr>
<tr>
<td>6</td>
<td>Assam</td>
<td>2.38</td>
<td>2.42</td>
<td>0.67</td>
<td>1.84</td>
</tr>
<tr>
<td>7</td>
<td>Bihar</td>
<td>0.27</td>
<td>2.07</td>
<td>0.26</td>
<td>0.70</td>
</tr>
<tr>
<td>8</td>
<td>Orissa</td>
<td>1.91</td>
<td>2.86</td>
<td>-0.67</td>
<td>1.31</td>
</tr>
<tr>
<td>9</td>
<td>West Bengal</td>
<td>1.43</td>
<td>5.98</td>
<td>2.39</td>
<td>2.83</td>
</tr>
<tr>
<td></td>
<td><strong>Eastern Region</strong></td>
<td><strong>1.30</strong></td>
<td><strong>3.61</strong></td>
<td><strong>1.00</strong></td>
<td><strong>1.76</strong></td>
</tr>
<tr>
<td>10</td>
<td>Gujarat</td>
<td>2.52</td>
<td>0.90</td>
<td>5.33</td>
<td>3.01</td>
</tr>
<tr>
<td>11</td>
<td>Madhya Pradesh</td>
<td>1.59</td>
<td>4.52</td>
<td>2.52</td>
<td>2.59</td>
</tr>
<tr>
<td>12</td>
<td>Maharashtra</td>
<td>1.91</td>
<td>1.92</td>
<td>2.13</td>
<td>1.98</td>
</tr>
<tr>
<td>13</td>
<td>Rajasthan</td>
<td>2.59</td>
<td>6.06</td>
<td>3.21</td>
<td>3.62</td>
</tr>
<tr>
<td></td>
<td><strong>Central Region</strong></td>
<td><strong>2.06</strong></td>
<td><strong>3.27</strong></td>
<td><strong>3.15</strong></td>
<td><strong>2.70</strong></td>
</tr>
<tr>
<td>14</td>
<td>Andhra Pradesh</td>
<td>2.41</td>
<td>3.40</td>
<td>1.76</td>
<td>2.44</td>
</tr>
<tr>
<td>15</td>
<td>Karnataka</td>
<td>2.46</td>
<td>3.66</td>
<td>0.97</td>
<td>2.27</td>
</tr>
<tr>
<td>16</td>
<td>Kerala</td>
<td>1.28</td>
<td>1.77</td>
<td>-0.80</td>
<td>0.73</td>
</tr>
<tr>
<td>17</td>
<td>Tamilnadu</td>
<td>0.90</td>
<td>4.06</td>
<td>-1.46</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td><strong>Southern Region</strong></td>
<td><strong>1.82</strong></td>
<td><strong>3.41</strong></td>
<td><strong>0.48</strong></td>
<td><strong>1.78</strong></td>
</tr>
<tr>
<td></td>
<td>All India</td>
<td>2.24</td>
<td>3.37</td>
<td>1.74</td>
<td>2.36</td>
</tr>
<tr>
<td></td>
<td>Co-efficient of variation</td>
<td>54.19</td>
<td>51.07</td>
<td>118.59</td>
<td>43.95</td>
</tr>
</tbody>
</table>

Source: G.S.Bhalla and Gurmail Singh, “Economic Liberalisation and Indian Agriculture: A Statewise Analysis”, Economic and Political weekly, Dec 26, 2009, Table 1, p.35.
ROLE OF AGRICULTURE IN INDIAN ECONOMY

Agriculture being the primary sector contributes to Indian Economy and its development yields benefits in a number of ways.

Our country has demonstrated that food security is the foundation of Economic security and economic security leads to the national security and other forms of social security like health security and education and employment opportunities stated Shri Abdul Kalam, President of India.\(^\text{13}\)

The basic aspects to be covered in order to discuss the role played by Agriculture in Indian Economy are:

**Share of Agriculture in National Income**

At the time of First World War, Agriculture contributed two-thirds of national income. This was on account of practical non-existence of Indian development and Infrastructure. However, after initiation of planning in India share of Agriculture has persistently declined on account of the secondary and tertiary sectors.

The share of Agriculture in national income is often taken as an indicator of Economic development. Normally developing countries are less dependent on Agriculture as compared to the underdeveloped countries. For example, only 2\% of GDP is derived from Agriculture in U.S.A. and U.K. Thus, it seems that as the country progresses the dependence on agriculture declines. However, in the current scenario agriculture contributes to 23\% of the country’s GNP and is the single largest contributor to the GNP of the country.

Provision of food surplus to expanding population

Because of the heavy pressure of population in labour surplus economies like India and its rapid increase, the demand for food increases at a fast rate. Therefore, unless Agriculture is able to continuously increase its marketable surplus of food grains a crisis is likely to emerge. Many developed countries are passing through this phase and in a bid to meet increasing food requirements have been compelled to import large quantities of food grains.

Largest employment providing sector

In 1951, 69.5% of the working population was engaged in agriculture. This percentage fell to 66.9% in 1991. Roughly agriculture is livelihood of almost $\frac{2}{3}$rd of work force in our country. However, with the rapid increase in population the absolute number of people engaged in agriculture has become exceedingly large. Development of other sectors of the economy has not been sufficient to provide employment to the increasing additions to working population who are, therefore forced to fall back upon agriculture even if their marginal productivity on land is zero or nearly so.

Contribution to capital formation

Unless the rate of capital formation includes to a sufficiently high degree, economic development cannot be achieved. Since agriculture happens to be the largest industry in developing countries like India, it can and must play an important role in pushing the rate of capital formation. If it fails to do so the whole process of economic development will suffer a setback. In the words of Subrata Ghatak and Ken Ingersent in
their book, *Agriculture and Economic Development*, ‘generating the surplus from agriculture will ultimately depend on increasing the agricultural productivity considerably’.

**Providing Raw materials to Industries**

Agriculture provides raw materials to various industries of national importance. Sugar, jute, cotton textile, vanaspati industries are examples of some such Industries which depend on agriculture for their development. The entire range of food processing industries similarly depends on agriculture. Therefore, unless Agriculture develops these industries will also remain backward.

**Market for Industrial Products**

Since more than two-thirds of population of developing countries like India live in rural areas, increased rural purchasing power is a valuable stimulus to industrial development but in the words of Ragnas Nurkse, in their book *Pattern of Trade and Development*, there is a lack of real purchasing power in rural fold reflecting the low productivity in agriculture.

Therefore, if steps are taken to expand agricultural output and productivity, the income of the rural sector will increase causing in turn, an increased demand for industrial products and the process of industrial development will also receive a boost up. This became very much exact with reference to India whose spread of Green Revolution increased the income of large farmers, which consequently increased their purchasing power substantially. The corporate sector is very well aware of the rising demand and is reorienting its marketing strategy and production pattern to tap this large market.
Importance in International Trade

The share of agriculture in total exports is 70 to 75%. Such heavy dependence on agricultural commodities for export earnings reflected the underdeveloped nature of the economy.

Usage of considerable part of the country land

About 43% of Indian geographical area is used in cultivation of land and as such, there is every need to increase the produce and the productivity of the country’s land with respect to agriculture.

The above discussion brings out clearly the role and importance of agriculture in Indian Economy.

A growing surplus of agricultural produce is needed in the country to,

i. increase employment opportunities,

ii. increase supplies of food and agricultural raw materials at,

iii. non-inflationary prices,

iv. widen domestic market for Industrial goods through increasing the purchasing power within the rural sector,

v. facilitate intersectoral transfers of capital needed for Industrial developments and increase foreign exchange earnings through agricultural exports, and

vi. develop the rural areas as 67.5% of country population is living in rural areas who are directly or indirectly dependent on agriculture.

From the above, it is very clear that Indian Economy cannot grow without agriculture. What used to be the backbone of Indian Economy now stands as a mere
contributor to it. Holistic and urgent reforms are needed to transform India into a leading agro-economy of the world.\textsuperscript{14}

However as Ramtanu Maitra says, ‘the bottom line of economic policies of present and last elected governments were to generate money. Since Indian Agriculture in the condition cannot generate money, it has been neglected. This is clearly understood from the decreasing investments on agriculture over the passing years.

Figure in \%, *Revised estimates Source: CSO, GOI

Moreover, it is relatively easy to show excellence in a sector as small as IT. Remember, IT employs only 1 million Indians while 10 million Indians join the Agricultural work force annually.

\textsuperscript{14} Article of Shishir Srivastava in Merinews, Sunday, March 09, 2009.
Trade increases the wealth and glory of a country but its real strength and stamina are to be looked for among the cultivators of the land.

The above discussion brings out clearly the role and importance of agriculture in Indian economy. Development of Agriculture is a virtual precondition of sectoral diversification and hence the development of itself. A growing surplus of agricultural produce is needed in the country to

i. increase the supplies of food and agricultural raw materials at non-inflationary prices,

ii. widen the domestic market for industrial goods through increased purchasing power within the rural sector,

iii. increase foreign exchange earnings through agricultural exports, and

iv. Facilitate inter-sectoral transfers of capital needed for industrial development.15

Given its importance in national economy the government attaches high priority in raising agricultural production with a view to promote faster economic growth.

The Government felt that it was time to brainstorm and come out with new ideas of value added services which will give the existing agricultural engine a new dimension.

The productivity of crops in India is low compared to China and very low compared to developing countries. There are large disparities among Indian States and territories in agricultural performance only some of which can be attributed to differences in climate or initial endowments of infrastructure such as irrigation. Realising the importance of agricultural production for economic development the Central Government

15 Subrata Ghatak and Ken Ingersent, *op. cit.*, p.60.
has played an active role in all aspects of agricultural development. Planning is centralised, and plan priorities, policies and resource allocations are decided at the central level. Food and Price Policy are also decided by the Central Government. Thus though Agriculture is constitutionally the responsibility of the states rather than Central Government the latter plays a key role in formulating policies and providing financial resources for Agriculture. Government of India and State Governments brought many reforms through very good proposals, but had set backs at implementation stage leading to many problems rather than expected outputs.\footnote{Problems and Prospects of Agriculture in India by B. Hemalatha, Y.V.R. Reddy and M.S. Prasad from Central Research Institute for Dryland Agriculture (ICAR), Saidabad, Hyderabad, Kurukshetra, May 2008, p.13.}

The Library of Congress country studies and CIA World Fact Book describes that the topography, soils, rainfall and availability of water for irrigation have been major determinants of the crop and livestock patterns characteristic of three major geographical regions of India - The Himalayas, the Indo-Gangetic plain and the Peninsula and their ecological sub-regions. Government policies as regards irrigation, introduction of new crops, research and education and incentives have made some impact on changing the traditional crop patterns. The monsoons, however, play a critical role in determining whether harvest will be bountiful, average or poor in any given year. That is the reason one of the objectives of government policy was to find methods of reducing dependence on monsoons.

**TRADING OF AGRICULTURAL PRODUCE**

In the olden days, the agricultural produce was fundamentally barter by nature where farmers exchange goods for goods and also against services.
Gradually, the scenario changed with changing times and agricultural produce began being sold with the element of commercial value. Trading of agricultural produce began for exchange of money.

For a long period of time, Indian Agriculture was mostly in the nature of subsistence farming. The farmer sold only a small part of his produce to pay off rents, debts and meet his other requirements.

Such sale was done immediately after harvesting of crops since there were no storing facilities. A considerable part of the total produce was sold by the farmers to the village traders and money lenders often at prices considerably lower than the market prices.

The farmers who took their produce to the mandies (whole sale markets) also faced a number of problems as they were confronted with powerful and organised traders. In mandies trading was carried out by the arhatiyas with the help of brokers who were the agents of arhatiyas. In fact, there were a long chain of middlemen in trading like village traders, kutcha arhatiyas, pucca arhatiyas, brokers, wholesalers, retailers, money lenders etc. As a result, the share of farmers in the price of agricultural produce was reduced substantially. A study of D.S. Sidhu revealed that farmers obtained only 45% of the price and the rest been shared by the middlemen and other costs.

Arhatiyas and brokers taking advantage of the ignorance and illiteracy of the farmers used unfair means to cheat them. The farmers were required to pay ‘arhat’ to the arhatiyas, ‘tulaii’ for weighing the produce, ‘palledari’ to unload the bullock carts and for doing other miscellaneous types of allied works, ‘garda’ for impurities in the produce,
and a number of undefined and unspecified charges. These charges often varied from person to person. Another malpractice in the mandies related to the use of wrong weights and measures.

In addition to the above, defects there were a number of other problems as well. For instance, there was absence of proper warehousing facilities in the villages. As a consequence, the farmer was compelled to store his products in pits, mud-vessels, kutcha storehouses etc. These unscientific methods of storing led to considerable wastage. Some parts of the produce get rotten and unfit for human consumption while some part was eaten away by pests and rodents. At times as much as one third of farmers produce was lost in this way. There was no provision for grading of agricultural produce. The practice only prevalent was the one known as ‘dara’ sales wherein heaps of all qualities of produce were sold in one common lot. Thus there was no incentive for use of better seeds and produce better varieties.

Transportation facilities were also highly inadequate and only a small number of villages were joined by railways and ‘pucca’ roads to the mandies. Most of the roads were ‘katcha’ roads and as such the produce was carried on slow moving transport vehicles like bullock-carts. Obviously such means of transport could not be used to carry produce to far-flung places and the farmer had to dump his produce in nearby market. Even if the price obtaining in this market is considerably low most of the farmers had virtually no contact with the mandies and in the absence of marketing information system they had no knowledge regarding the prices ruling in different mandies. Therefore they had no option but to accept whatever price is been offered to them. Since the ordinary Indian farmer was poor and suffered with lack of staying power he tried to sell off the
produce immediately after the harvesting of crops though prices at that time are generally low.

Thus in India, there are so many defects in agricultural produce trading like existence of large number of middlemen, multiplicity of weights and measures, inadequate storage facility, lack of transport facility, absence of grading and standardisation, lack of market news and information and lack of adequate financial facility.

Amidst the scenario, gradually came the word marketing of agricultural produce replacing traditional selling. The marketing as a term is broader than traditional trading and agricultural marketing as a concept is still evolving in the Indian Agrarian Society.

**INDIAN FIVE YEAR PLANS AND THEIR CONTRIBUTION TOWARDS DEVELOPMENT OF AGRI-SECTOR**

When India gained Independence, its economy was grovelling in dust. The British has left the Indian Economy crippled. As Wordsmith said, ‘**Bliss was it in that dawn, to be alive**’. But economists, who are the followers of the ‘dismal science’, cannot afford to be romantic. Its time, we took stock of our experiences to find out where we have gone right, where we have gone wrong and what we should do in the years to come. After getting Independence to this country most of the political parties promised that due attention will be given to the Agricultural development thereby to provide food security to a large population of people. The early 1950s saw the dawn of Indian planning intended to realise the aspirations of newly developed nation. Though the roots of thought on Indian planning go back to the pre-Independence period, it was P.C.
Mahalanobis who provided a definitive framework for it. If he provided a framework, it was Pandit Jawaharlal Nehru who breathed life, vitality and credibility into it. Those were the days of great enthusiasm. Those were the days of great hope. There were miles to go and promises to keep, but the limbs were not tired. Fathers of development formulated Five Year Plans to develop the Indian Economy. The Five Year Plan in India is framed, executed and monitored by the Planning Commission of India. The planners of Independent India in a phased manner thought of developing agri-sector in this country and top priority was given in the Five Year Plans in Independent India.

The planning process itself was initiated in April 1951 when the First Five Year Plan was launched. Since then Ten Five Year Plans have been completed. Currently, India is in the Eleventh Five Year Plan. “Government investment in Agriculture has fallen from 14.9% in the first five year plan to 5.2% in the current plan. Whatever substantial is allotted for the farmers becomes the morsel of our corrupt politicians.”

The journey of five year’s plan in India with respect to Agriculture can be summarised as follows:

1st Five Year Plan (1951-1956):

The first five year plan was presented by Jawaharlal Nehru in 1951. The First Five Year Plan was initiated at the end of turmoil of partition of the country. Indian Agriculture was backward and qualitatively traditional in nature on the eve of the First Five Year Plan. Thus, it gave importance to the agriculture, irrigation and power projects to decrease countries self-reliance on food grain imports, to resolve food crisis. Nearly

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17 Indian Planning-Objectives, Strategy and Instrumentality in a paper presented at Conference on Planning
45% of resources were designated for Agriculture. The focus was to maximise output from agriculture which would then provide impetus for industrial growth.

Though the First Plan was formulated hurriedly, it succeeded in fulfilling the targets. Agriculture production increased dramatically. Thus performance of the First Plan on this front was satisfactory. Production of food grains rose from 54 million tons in 1950-1951 to 64.8 million tons in 1955-1956 against target of 61.6 million tons.\textsuperscript{18} The plan addressed mainly the agrarian sector. The agricultural sector was hit hardest by the partition of India and needed urgent attention.

\textbf{2\textsuperscript{nd} Five Year Plan (1956-1961):}

Harrod Domar model formed the basis of planning strategy in the second plan which was presented by P.C. Mahalanobis. It was the strategy of industrialisation, as the Second Five Year plan was initiated in a climate of economic prosperity, industry gained its prominence.

Agricultural programmes were formulated to meet the raw material needs of Industry besides covering the food needs of increased population.

In comparison to First Five Year Plan, the Second Five Year Plan was a moderate success. Unfavourable monsoon in 1957-58 and 1959-60 impacted agricultural production and also the Swiss crisis blocked international trading increasing commodity prices. Target for food grain production was kept at 75 million tons in second plan which achievement was 76 million tons.

\textsuperscript{18} Politics in India since Independence, Chapter-3, Politics of Planned Development.
3rd Five Year Plan (1961-1966)

While formulating the third plan, it was realised that agricultural production was destabilising factor in economic growth. During the 1960s, a majority of Indians were compelled to depend on ‘ship to mouth’ existence. Hence, Agriculture was given due importance. Emphasis was on becoming self reliant in agriculture and Industry. The objective of Import substitution was seen as a sacrosanct.

The plan aimed to increase agricultural production by 30%. But the performance of third plan on the agricultural front can be considered unsatisfactory. Keeping in view the fact that the achievements were below targets for most of the crops, target was kept at 100 million tons but actual production was merely 72 million tons.

The wars with China in 1962 and Pakistan in 1965 and bad monsoon in almost all the years, meant the actual performance was way of the target.

THE PERIOD 1966-1969 WERE CONSIDERED AS PLAN HOLIDAYS

4th Five Year Plan (1969-1974):

At the time of initiating the fourth plan it was realised that GDP growth and rapid growth of capital accumulation along would not help improve standard of living or to become economically self reliant. Importance was given to providing benefits to the marginalised section of the society through employment and education. Disbursement of agricultural section was increased to 23.3%.

Fourth Plan kept the target of 129 million tons while actual production was merely 104.66 million tons. The rate of growth was only 2.8% per annum in the fourth
plan against the target of 5% per annum. Green Revolution in India advanced agriculture but Green Revolution did not perform as expected.

5th Five Year Plan (1974-1979):

By 1970, a distinct change in the thinking of planners was clearly discernible. As a result of pioneering the study of V.M. Dandekar and N. Rath, Poverty in India in 1971 and follow up discussion in which a number of economists participated, the conviction grew strong that poverty and misery were widespread in India, and there was urgent need to take account of this problem in plan exercises. Accordingly, for the first time in Indian planning history, the approach paper of Fifth Five Year Plan talked of a redistributive scheme.

As a result of inflationary pressure faced during the Fourth Plan, the Fifth Plan focused on checking inflation.

The Fourth Plan kept the target draft Fifth Five Year Plan kept target of 140 million tonnes but the actual production was 131.9 million tonnes.

The Fifth Plan was discontinued by the new Janata Government in fourth plan itself.

6th Five Year Plan (1980-1985)

The Janata Government moved away from GNP to development concentrating on providing employment opportunities to marginalised section of the society. But the plan lacked the political will.

Congress Government on taking office in 1980 formulated a new plan with a strategy to lay equal focus on infrastructure and agriculture.
Sixth Five-Year Plan was formulated against the background of perspective covering a period of fifteen years.

During Sixth Plan Period actual production rose to 152.4 million tonnes due to exceptionally good crops in 1983-1984 against the plan target of 153.6 million tonnes. As an outcome of 6th Five Year Plan there has been steady growth in Agriculture, however production declined during terminal year of Sixth Plan.

7th Five Year Plan (1985-1989)

The Seventh Plan aimed at non-inflationary growth in employment. In order to realise this objective, agricultural production, particularly food production had to be augmented significantly. In recent years, agriculture has done well, but the wide gap between potential and actual achievement persists. The planners had pinned their hopes under the seventh plan on the prospects of agricultural growth for employment generation both in countryside and in urban areas.

The fact however is that growth and employment potential of industrial sector largely depends on rate of agricultural growth. The Seventh Plan thus aimed at lessening agricultural constraints to Indian development.

The first three years of Seventh Plan saw severe drought conditions, despite which food grain production rose by 3.2%. However, the performance of Agriculture during the Seventh Plan period was not once again very satisfactory. Against food grain production target of 178 million tonnes the actual production was only 171 million tonnes in the terminal Year of the Plan.

Table II.4
TABLE SHOWING THE PUBLIC SECTOR OUTLAY FOR AGRICULTURE SECTOR - ALL INDIA

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</thead>
<tbody>
<tr>
<td>Agriculture including cooperation</td>
<td>238</td>
<td>275</td>
<td>591</td>
<td>2059</td>
<td>3356</td>
<td>6440</td>
<td>1524</td>
<td>3803</td>
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<tr>
<td>All sectors</td>
<td>2377</td>
<td>4800</td>
<td>8099</td>
<td>15902</td>
<td>39322</td>
<td>97500</td>
<td>18000</td>
<td>64717</td>
</tr>
</tbody>
</table>


1989-1991 was a period of economic instability in India and hence no Five Year Plan was implemented. Between 1990 and 1992 there were only Annual plans.

8th Five Year Plan (1992-1997)

On April 1, 1992 when the Eighth Plan commenced, 41 years of economic planning of largely agrarian economy had been transformed into one based on a developed and diversified infrastructure with considerable potential for industrialisation. India had a resilient agricultural economy with almost self-sufficiency of food production.

The Eighth plan was initiated just after a severe balance of payments crisis which was intensified by Gulf War in 1990.

In 1990-1991, production of food grains reached the level of 176.4 million tons. 1991-1992 was a bad year from the point of view of agriculture as in this year production of food grains registered a steep fall of 4.2%. In the next three years production increased steadily and in 1994-1995 reached the level of 191.5 million tonnes. In the
terminal year of Eighth Plan the output was 199 million tonnes against a target of 210 million tonnes.

Figure II.1

FIGURE DEPICTING THE SHARE OF AGRICULTURE HAS BEEN ON A DECLINE

9th Five Year Plan (1997-2002):

It was observed in the Eighth plan that, even though the economy performed well, the gains did not percolate weaker sections of the society. The Ninth Plan, therefore, laid greater impetus on increasing agricultural and rural incomes and alleviates the conditions of the marginal farmers and landless labourers.

Food grains output rose to 212 million tons in the last year of the Ninth Plan.

10th Five Year Plan (2002-2007):
The aim of the tenth plan was to make Indian economy the fastest growing economy in the world. The agricultural sector was allocated 18.7% of the total outlay in the tenth Five Year Plan. In line, with the new agricultural policy 2000, this envisaged the growth rate exceeding 4% per annum growth.

As far as strategy for agricultural growth is concerned, the tenth plan endorsed regionally differentiated strategy for increasing the pace of growth in every region of the country.

Economic Survey, 2007-2008 notes a disturbing fact and this pertains to food availability. Between 1950-51 and 2006-07, production of food grains increased at an average annual rate of 2.5 per cent compared to the growth of population, which averaged 2.1 per cent during this period. As a result, India almost became self-sufficient in food grains. However, the rate of growth of food grains production decelerated to 1.2 per cent during 1990-2007, lower than the annual rate of growth of population, averaging 1.9 per cent. The per capita availability of cereals and pulses therefore witnessed a decline during this period.\(^\text{19}\)

The rate of growth of this sector was mere 2.5% per annum. This indicates a situation of almost stagnation in agriculture of the economy. As a result the condition of the rural poor deteriorated.

Modernisation of agriculture was required both in terms of technological and institutional changes as there is tremendous scope for increasing yield levels with technological breakthroughs. The Mid-term appraisal of the Tenth Five Year Plan (2002-2007) drew attention to the loss of dynamism in agriculture and allied sectors after the

\(^{19}\) Issues in Indian Agricultural policy and rural development by Misra and Puri in their 26th revised edition of Indian Economy, p.255.
mid-1990s. Hence various policy initiatives have been taken in recent years to promote the agricultural sector. These include the following:

a) National Agricultural Policy, 2000,
b) Vishesh Krishi Upaj Yojana, 2004,
c) National Horticulture Mission, 2005,
d) National Policy for farmers, 2007,
e) Comprehensive District Agricultural Plan, 2007,
f) Rashtriya Krishi Vikas Yojana, 2007, and

**11th Five Year Plan (2007-2012):**

The Eleventh Five Year Plan notes that although GDP from Agriculture has more than quadrupled, from Rs.1,08,372 crore in 1950-1951 to 4,81,547 crore in 2006-2007 with an allocation of Rs.25,000. The RKVY aims at achieving 4% annual growth in the agricultural sector during eleventh Five Year Plan period by ensuring a holistic development of agriculture and allied sectors. The RKVY will be a State Plan scheme and the eligibility for assistance under scheme would depend upon the amount provided in state budgets for agriculture and allied sectors.

Government Investment in Agriculture has fallen from 14.9% in the first five year plan to 5.2% in the current Plan. Whatever substantial is allotted for the farmers becomes the morsel of our corrupt politicians.

India is believed to be ‘on fire’ as its growth rate is close to China’s and in near future it is likely to hit, somewhat symbolic yet significant, double digit figure. With double digit growth rate if attained and maintained, India can be a developed nation by
2020. With the same trend it can also be counted among three economic powers by 2040. But for all this, the requisite rate of growth in agriculture is 4% and not 2% per annum, at which agriculture is stagnating at present.\(^{20}\)

However, planners must take into consideration the ground realities existing in the economic environment while designing programmes for economic development. The decline in the importance and contribution of agriculture to national income and employment has often been seen as a ‘prime indicator’ of the stages of economic development. However, after 50 years of planned intervention in economic growth we still find agriculture to be continued as the core sector of the economy.

**CHALLENGES BEFORE INDIAN AGRICULTURE**

The most important challenge facing mankind is to ensure that all people have access to enough food for a healthy and productive life. It is a disgrace that more than 800 million people do not have access to enough food in a world with abundant food supplies, and that as many as two billion people suffer from Iron and Vitamin deficiencies and that about one third of all pre-school children in developing countries are mal-nourished says Pristrup Anderson, Director General, International food Policy Institute, Washington D.C.

The World Development Report, 2008 published by the World Bank has highlighted the issue of agriculture for development. It says that GDP growth originating

\(^{20}\) Development through improving Economics of Agriculture by Dhruva Kumar Singh, Deputy Controller of Accounts in the Ministry of Rural Development and The Ministry of Panchayati Raj & Ekta Choudary, Freelance writer in *Kurukshetra*, December 2007, p.28.
from within agriculture is four times more effective in raising income of the poorest of the poor than GDP growth rate originating from without this sector. Secondly, in transforming countries like India, China etc agriculture contributes hardly 7% of GDP growth. As a result, there is growing gap not only between rich and poor but also between urban and rural poor.

On the eve of 20th century, Indian Agriculture is faced with a number of challenges. ‘The most important challenge facing mankind is to ensure that all people have access to enough food for a healthy and productive life says Pristrup-Anderson, Director General, International Food Policy Institute, Washington D.C. The success with which we succeed in meeting the challenges will decide our ability to provide an ‘assured standard of living’ to every Indian. Some of the important challenges identified by Nair are:

1. Scarcity of food and malnutrition continues to be a problem at the individual house-hold level.

2. Land reforms have been a failure at the implementation stage itself.

3. The demographic pressure on agricultural land has been excessively high and there is a high degree of prevalence of disguised unemployment in the farm sector which has the effect of reducing the productivity of human capital and sometimes acts as a deterrent to the introduction of farm implements and mechanisation.

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4. Fragmentation and division of holdings continues to be a major problem of Indian Agriculture. The small levels of land holdings hamper the possibility of the farmer reaping the benefits of large scale farm operations.

5. Loss in fertility of soil due to inappropriate use of fertilisers and farm practices motivated by the availability of existing subsidies during the 1980’s and 1990’s,

6. Extensive damage to the ecological environment due to the reckless exploitation of land-resources in the pursuit of ‘heavy returns’ from farming operations.

7. Failure to utilise the breakthroughs achieved in the ‘laboratory front’ at the farm level due to lack of knowledge on the part of the farmers, and

8. The inevitable and irreversible phenomenon of declining per capita availability of land and water.

There is a need for reducing the pressure on ‘traditional agriculture’.

At present, Indian agriculture, in general, is trapped in low productivity cycle which can be broken only by higher agriculture productivity as shown in the following diagram:

```
Low Agricultural investigation
  ↓
Low Productivity       Low margin
  ↓
  Weak Market Orientation
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Cycle of higher productivity

High Agricultural Investment

\[\text{\uparrow}\]

Higher Margin

\[\text{\uparrow}\]

Higher productivity

\[\text{\uparrow}\]

Higher Market Orientation


EFFECT OF GLOBALISATION ON AGRICULTURE

India which is one of the largest agricultural based economies, remain closed until the early 1990s. It is a maxim universally agreed upon in agriculture that nothing must be done too late, and again, that everything must be done at its proper season; while there is a third precept which reminds us that opportunities lost can never be regained. The Indian Agricultural sector has been undergoing economic reforms since the early 1990s there was growing awareness that the inward looking import substitution and overvalued exchange rate policy coupled with various domestic policies pursued during the past four decades, limited entrepreneurial decision making in many areas and resulted in a high cost domestic industrial structure that was out of line with world prices. Hence, the new economic policy of 1991 stressed both external sector reforms in areas such as industrial policy, price and distribution controls and fiscal restructuring in the financial and public sectors. In addition, India’s membership and commitment to World Trade Organisation (WTO) in 1995 was a clear sign of India’s intention to take advantage of globalisation and face the challenge of accelerating its economic growth.
The Globalisation has brought drastic changes in India across all sectors and it is more in agriculture, farmers and made a deep impact on agricultural marketing. It is basically because majority of Indians are farmers. It has brought several challenges and threats like uncertainty, turbulence, and competitiveness apart from compelling them to adapt to changed technologies. If it is the dark cloud there is silver lining like having excellent export opportunities for our agricultural products to the outside world.

Why Globalise?

Globalisation in the context of agriculture can be best discussed in the context of three components,

(i) improvement of productive efficiency by ensuring the convergence of potential and realised output,

(ii) increase in agricultural exports and value added activities using agricultural produce, and

(iii) finally, improved access to domestic and international markets that are either tightly regulated or are overly protected.

These components are linked in various ways. For example, productive efficiency would enhance value added activities in agriculture through agro-processing and exports of agricultural and agro-based. These activities in turn would increase income and employment in the industrial processing sector. Thus globalising agriculture has the potential to transform subsistence agriculture to commercialised agriculture and to improve the living conditions of the rural community.

However, the economic reforms within India are necessary to pave the path to successful globalisation. The stated objective of the economic policy in about 1995 is to
raise the economy’s growth rate from 5.5 per cent which took over 15 years for achievement to about 7 or 8 per cent per year. Ahluwalia explains that this indirectly requires an improvement in agricultural growth from between 2 and 3 per cent in the past to about 4 per cent per year. Although initially, with respect to agriculture, there was no major policy reform package in the 1990s, it has however anticipated that the opening up of the agricultural sector to foreign trade. The move to a market determined exchange rate and reduction of protection for industry worldwide, overtime, benefit the agricultural sector.

Manmohan Singh (1995), the then Finance Minister, in his inaugural address at the 54th Annual conference of the Indian Society of Agricultural Economics, brought to notice that a policy of heavy protection of the industrial sector operated to the disadvantage of the agricultural sector when industrial prices were raised relative to world prices and thus the profitability of investing in industry was raised relative to agriculture. This would lead to a shift of resources from agriculture to Industry. A policy of heavy industrial protection also led to an appreciation of the exchange rate. Ahluwalia (1996) noted that over-valuation of the exchange rate (before the Indian rupee was devalued by 18% in two phases starting in July 1991) discouraged agricultural exports more than industrial exports because Indian Industrial policy had sought to offset the constraints faced by Industries via a system of export incentives for market support. Agricultural exports on the other hand were denied any such incentives as they did not use the imported inputs.

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Ahluwalia argued that in the past the agricultural sector was negatively protected because of the above two reasons and the fact that farmers were denied access to the world markets due to trade barriers.

Interestingly Kruger\textsuperscript{23} and others showed that while many developed countries continue to protect agriculture, developing countries do not do so. The implementation of economic reform in the Indian Agricultural sector has been a gradual process. These include an 87\% cut in tariff on agricultural products, sustenance of high yield crop varieties, removal of minimum export price on selected agricultural products, a lift on quantity restrictions on the export of some crops and various land reforms related to tenancy rights and land ceilings.

**AGRICULTURAL GROWTH AND PERFORMANCE: AN ECONOMY WIDE ANALYSIS**

Although India’s economic reforms were initiated in June 1991, the process of liberalisation was implemented gradually and thus it is difficult to assess the full impact of liberalisation measures. One observation is that the expected increase in exports due to liberalisation simply did not occur. India’s share in world exports was 0.6\% in 1997; India has to aim for at least 4\% by 2005 in order to meet the growing import demands for capital goods, raw materials and crude oil as well as to meet her external financial commitments (Kalirajan and others). For the last decade or so, India’s share in world exports of agriculture has been between 2\% and 3\% which makes it clear that India is not so competitive as the other countries.\textsuperscript{24}


In addition the agricultural sector’s output growth decreased to 2.9% during 1992-1993 to 1998-1999. Kaliranjan and others\(^{25}\) explain two important reasons for the slowdown are that there was no major breakthrough in developing new high-yielding varieties during the 1990s and there was a decline in the environmental quality of land which reduced the marginal productivity of the modern inputs. What could this mean in terms of the effectiveness of the policies of reduced protection to industry, a market determined exchange rate and the opening of the agricultural sector to foreign trade?

First, although the reduction to protection of industry is substantial there is reason to believe that the reduction was not necessarily sufficient to benefit the agricultural sector whose tariffs were also drastically reduced. Hence, the expected shift in resources to agriculture did not occur. Second, is the apparent ineffectiveness of the market determined exchange rate in boosting exports. This is however not surprising as the exchange rate may not be a key factor determining agricultural export demand for India. In general, unlike manufacturing industries, agriculture did not benefit much from these two policies because the share of imported inputs in the value of agricultural production is small. It is likely that a change in the mindset and attitude of farmers has yet to take place and there are delays or hesitation in embracing India’s openness.

Third, in opening up the agricultural sector to foreign trade, India has taken major steps towards trade liberalisation since 1991, partly on its own initiative and partly from its commitments to WTO. The benefits from trade liberalisation have been slow to come because of a variety of reasons such as,

(i) The prospects of growth in agricultural exports depend partly on domestic policies and partly on the removal of protectionist policies pursued by developed countries such as Japan and the members of the European Union (EU). Schumacher\(^{26}\) reports that the EU provides product-specific trade distorting domestic support to at least 50 different agricultural products. The implication of these reports is that food exports from India may not show a large increase given the international environment and the still existing restrictions on exports in the major importing markets based on the self-sufficiency argument and food security. Other macroeconomic factors such as the recession in developed countries as well as the South East Asian financial crisis have clouded the possibilities of increasing Indian exports.

Table II.5

Table showing the Percentage Change in Main Agricultural Export & Import Trade Indices

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<tbody>
<tr>
<td></td>
<td>Agricultural production</td>
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<tr>
<td>Export value</td>
<td>0.25</td>
<td>8.71</td>
<td>5.52</td>
<td>-3.76</td>
<td>12.89</td>
<td>10.37</td>
<td></td>
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<tr>
<td>Export Quality</td>
<td>0.89</td>
<td>8.71</td>
<td>5.52</td>
<td>-3.76</td>
<td>12.89</td>
<td>10.37</td>
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<tr>
<td>Export unit value</td>
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<td>2.71</td>
<td>0.44</td>
<td>0.71</td>
<td>-6.69</td>
<td>5.15</td>
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<tr>
<td>Import value</td>
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<td>-5.37</td>
<td>-3.54</td>
<td>4.53</td>
<td>-13.91</td>
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<td>Import quantity</td>
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<td>-15.86</td>
<td>-27.9</td>
<td>10.8</td>
<td>-19.77</td>
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<tr>
<td>Import unit value</td>
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<td>Food excluding fish</td>
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<td>Export value</td>
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<tr>
<td>Export Quality</td>
<td>-1.01</td>
<td>9.08</td>
<td>7.19</td>
<td>-4.02</td>
<td>7.93</td>
<td>24.58</td>
<td></td>
</tr>
<tr>
<td>Export unit value</td>
<td>1.82</td>
<td>4.84</td>
<td>-6.23</td>
<td>0.63</td>
<td>-4.87</td>
<td>-3.10</td>
<td></td>
</tr>
<tr>
<td>Import value</td>
<td>17.07</td>
<td>-7.82</td>
<td>-4.8</td>
<td>4.61</td>
<td>-17.28</td>
<td>31.75</td>
<td></td>
</tr>
<tr>
<td>Import quantity</td>
<td>18.95</td>
<td>-17.05</td>
<td>-28.77</td>
<td>11.65</td>
<td>-20.31</td>
<td>21.61</td>
<td></td>
</tr>
<tr>
<td>Import unit value</td>
<td>-1.58</td>
<td>11.13</td>
<td>33.65</td>
<td>-6.3</td>
<td>3.79</td>
<td>8.36</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Datta & Chakrabarti (2001)

(ii) The protectionist measures in the form of non-trade barriers that developed countries use to restrict market access is another problem. This is by tightening requirements of quality, testing and labelling and antidumping and countervailing measures. The extra costs of meeting the standards required in export markets as well as costs associated with the changes in the production mix and transactions associated with exports may well be discouraging Indian exporters.

(iii) One existing problem in India’s agricultural protection is the use of input subsidies. The general argument favouring this has been that it is necessary to encourage the use of particular inputs for production of
various benefits. But the benefits of these subsidies have accrued to only certain classes of farmers in some regions cultivating irrigated crops. Furthermore highly subsidised prices of inputs such as irrigation, water and electricity for pump sets have encouraged cultivation of water-intensive crops, over-use of water, ground water depletion/salinity and water logging in many areas. Subsidy for nitrogen fertiliser on the other hand has resulted in nitrogen phosphorous, potassium imbalance and acted as a disincentive for use of the environmentally friendly organic manure. As a result the linkage between food crops and non-food crops which include fodder has been reduced. These adverse consequences are a drain on the fiscal burden of central and state governments. Thus if not properly monitored, input subsidies can be counter productive and in this context, protection to lower costs of production should be done selectively in the course of liberalisation.

It is quite apparent that at this relatively early stage, there is little observable evidence of gains to India’s agricultural performance after opening up. However, there could easily be benefits that have not yet surfaced, or are yet to be identified and perhaps too difficult or intangible to measure. Whatever the case, it is highly likely that it is too soon to assess the full impact of globalisation and economic reforms. Furthermore, the process of liberalisation has been gradual and remains incomplete. For example, the complete removal of quantitative restrictions after March 2001 will have provided an opportunity for Indian farmers to tap world markets and if they are successful, results should start to become evident soon. Export promotion via the development of export and trading houses as well as effective liberalising export promotion zone schemes for agriculture are fairly recent measures and only time will tell as to how effective these
measures are. Other possibilities such as agro-industry parks for promoting exports are also in the pipeline.

In conclusion, India has successfully set sail on the waters of globalisation and economic reforms and even in the wake of economic and political instability, she has to carefully steer her course in order to reap the benefits of increased productivity growth in the agricultural sector.27

Indian Agriculture was always depended on monsoon and whenever there are fluctuations in monsoon, the productivity also got disturbed. That is why most of the time, famine hunted the Indian farmers. Indian Economy got flourished before the period of imperialism with relatively rich small scale and cottage industries. The exploitation of East India Company particularly the natural resources destructed those flourished the small and cottage industries. In addition to this, the failure of Joint family system, growth of population on a given piece of land led to decline economic opportunities of rural folk thereby degrading the flourishing Indian Village systems.

Thus, the village handicrafts, entry of foreign goods in Indian Territory, the export of rich minerals to Britain, the unfair use of Indian trade surplus to finance British wars are some of the causes which weakened the Indian Economy.

**Role of Andhra Pradesh in Agrarian Sector**

The state of Andhra Pradesh was formed on 1st November 1956 by an integration of Hyderabad state formerly under the princely rule with the Andhra region formed in the year 1953, through bifurcation of Madras State. Hence, the origin and development of

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Agriculture Department in Andhra Pradesh relates to the origin and development of the Agriculture Department in Madras and Hyderabad states.

In the composite Madras state, a separate Agriculture Department was created in the year 1906 with a Director of Agriculture and necessary subordinate staff. Since then, there had been gradual expansion of the departmental activities like agricultural education, research and extension. In the war years i.e., 1939-1944, the need for increasing agricultural production was keenly felt and countrywide Grow More Food Campaign was launched with the specific object of increasing production during the post-war reconstruction. The Agriculture Department was strengthened at all levels to cope up with the enlarged activities and for the successful implementation of various grow more food schemes in the state. The Department of Agriculture established the College of Agriculture at Bapatla during 1945.

Hyderabad state

The Agriculture Department in Hyderabad state was established in the year 1911. Since then, the department maintained steady progress and expansion. Between 1911 and 1952 a number of research stations were established for tackling different agronomic problems. At the same time, an engineering branch was also established and strengthened gradually for the improvement of agricultural implements, to assist the public in installing pump-sets, drilling deep bores, training oil engine drivers, etc. With the commencement of Grow More Food Campaign all over the country during the war years, a number of new developmental schemes were implemented and as a result, the department had got expanded to a considerable extent by providing staff for research and
extension. Osmania University had established first Agriculture College, in Hyderabad state in its campus during 1946.

Organisational Changes:

(i) After the formation of Andhra Pradesh in 1956, the department was made responsible for research, education, extension, agricultural engineering, marketing and publicity.

(ii) During February 1962, the marketing wing of the Department of Agriculture was separated and a separate department of marketing was created.

(iii) Consequent on the formation of Andhra Pradesh Agricultural University during 1965-1966 the research and education wing i.e., Agricultural Research Stations and Agricultural Colleges of Department were transferred to the University.

(iv) In the same year 1966, publicity wing of the Department was also separated and merged with the information and Public Relations Department.

(v) Consequent on the establishment of the Andhra Pradesh Agro-Industries Corporation Limited, the departmental rigs and rock blasting units were transferred to the corporation with effect from 2nd January 1969. The drilling staffs were also deputed to the corporation. Subsequently the agricultural engineering machinery viz., bull-dozers, tractors, etc., were transferred to the corporation with effect from 1st June 1969. The staffs working in the above wings were given option to continue in the department or to get transferred to the newly created agencies.

(vi) Even after the transfer of the Agricultural colleges-Bapatla and Rajendranagar to the Andhra Pradesh Agricultural University, Training schools were retained with the Agricultural Department. The Department arranges training in specialised items like soil conservation, plant protection, water-use management, implementation of schemes and
enforcement of various acts etc., for the different cadres of technical staff. For this purpose, there are two soil conservation training centres one at Hyderabad and the other at Ananthapur and one plant protection training centre now redesignated as state level training Institute by name Agricultural Staff Training Institute at Hyderabad. Besides there are two vocational Agricultural schools at Suryapet (Nalgonda District) and Yemmiganur (Kurnool District) in the state. These schools train the sons of farmers in different aspects of improved agricultural practices. There are three inservice training centres at Samalkot, Nandyal and Malthumeda to train inservice Agricultural Extension Officers. There are seven farmers Training centres at Rajendranagar, Gopannapalem, Kalahasthi, Nandyal, Suryapet, Bapatla and Karimnagar for imparting training to farm men and women on package of practices and on all farm operations including livestock, diary, poultry, fisheries etc., subsequently the farmers training centres have been established in all the twenty two districts.

(vii) The Agricultural extension work in the Department of Agriculture has been getting reorganised time and again based on the requirements at a point of time. In 1960s, it was broadly based on crop development schemes designed by the Government of India. At that time based on these schemes, territorial jurisdiction was fixed for various categories of staff i.e., Field Assistants/Sub-Assistants, Agricultural Officers of the cadre of Assistant Director of Agriculture was upgraded to that of the Deputy Director of Agriculture and he was made to act as P.A to Collector (Agriculture).

(viii) Subsequently as per M.T. Raju Committee report, the district post of District Agricultural Officer of the cadre of Assistant Director of Agriculture was upgraded to that of the Deputy Director of Agriculture and he was made to act as P.A to Collector (Agriculture).

(ix) The A.P.S.S.D.C. Ltd., was established in the year, 1976. The functions of high quality seed production and supply was transferred to A.P.S.S.D.C. since then.
(x) To ensure supply of high quality seeds with prescribed genetic purity, close inspections are required and statutory certification is essential, for this purpose A.P State Seed Certification Agency was registered under the provisions of Public societies (Telangana Area) Registration Act 1350 Fasli during Phase I of National Seed Project and the commenced its operations from 1-6-1977. Accordingly the functions of Seed certification were transferred to Seed Certification Agency from 1-6-1977.

(xi) With the creation of Directorate of Sugars in the year 1976, Sugarcane wing has got separated from the Department of Agriculture.

(xii) Separate Horticulture Department was created, by bifurcating schemes meant for development of Horticulture crops from the Department of Agriculture in the year 1982.

(xiii) During 1976, the extension wing has again reorganised into two wings i.e., Extension and Inputs. The Extension wing used to look after the preparation of plans right from farm level, village level to the district level. The Input wing used to assess the input requirements and handle departmental go-downs etc. During this period, certain states had implemented T&V (Training and Visit) system with the assistance of the World Bank in the command areas. In Andhra Pradesh the following command areas were covered under T & V system.

1. N.S.P. Right Canal Area
2. N.S.P. Left Canal Area
3. Sri Ram Sagar Project
4. T.G.P.H.L.C.

Based on the experience gained and the success of the T & V Extension system (Benor system) in the command areas in various states and also in Andhra Pradesh it was decided to extend the same in all the districts of the state. Consequently T & V programme came into being and was implemented with World Bank Assistance from 1982-1989. Subsequently the staff under this T & V Scheme was converted to non-plan and it is still being followed with certain modifications. The system emphasises
Professional approach and finalisation of technical messages to the farmers based on the consensus arrived at after deliberations among Scientists, extension staff and farmers. It also believes in passing of the messages through well structured system. The state trading schemes involving procurement and sale of inputs like seeds, fertilisers and pesticides were detached from the department since 1982. Subsequently during 1993 for better span of control and Enforcement of quality control orders, the key supervisory cadre (i.e., ADA) were reorganised by creating geographical agricultural subdivisions comprising 2-8 mandals and by redeployment of subject matter specialists as Assistant Directors of Agriculture in the newly created offices to operate independently in the limited jurisdiction. Earlier to this reorganisation the territorial jurisdiction of A.D.A was synonymous with the revenue division. Now 254 A.D.A ® offices are functioning in the state.

State of Andhra Pradesh is an agriculturally developed state because development of agriculture in Andhra Pradesh is given the highest priority in successive Five Year Plans as it contributes directly to the growth of income of rural people and provides them with greater employment opportunities and has made rapid strides in the area of agricultural development. It has often been called “Annapoorna” which signifies “Agricultural Bounty”. Andhra Pradesh occupies Fifth place in the country. Agriculture in the state gets benefit from both south-west and north-east monsoons. Within the three geographical regions namely coastal Andhra, Rayalaseema and Telangana, it has the natural resources and climatic conditions suitable for large variety of agricultural products.

Andhra Pradesh is rich in the water resources and is popularly known as ‘The River State’. The Godavari and the Krishna, two of the biggest inter-state rivers, flow
through the heart of the state along their tributaries. The net-irrigated area (3.44 million hectares) in Andhra Pradesh is next only to U.P and the soil is fairly fertile (Government of Andhra Pradesh Bureau of Economics & Statistics, Statistical Abstract)

The recommendation of Ford Foundation for a concerted and co-ordinated approach to agricultural development in selected areas under the names of Intensive Agricultural Area Programme (IAAP) and Intensive Agricultural District (IADP) has been introduced. The programmes of high varieties and multiple cropping have been implemented in all districts of the state.

Vision-2020 with reference to Agricultural sector states: “Agriculture is lifeline of Andhra Pradesh economy. The sector contributes over a third of states GDP and provides livelihood for 70% of its population. Above all the state has massive strengths in agriculture, including a varied climate, water resources and soil that make it possible to grow a variety of crops here and a large coastline that facilitate exports. The state will build on these strengths to develop a strong and vibrant agricultural sector.”

Ever since it gained the status of separate state in 1950s successive governments have reorganised the need to treat the agricultural sector as a priority area and government intervention and investments for vitalising this crucial sector have been substantial and have led to substantial gains in agricultural sector.

Andhra Pradesh Agriculture being the backbone and livelihood of regional population is all set to receive a new deal from the Indian Government which has committed to formulate a comprehensive package for reforms and policy changes vital

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for increasing farm income and productivity, thereby making the sector nationally and
globally competitive.

In the backdrop of the new internal and external challenges faced by the farming
sector and the alarming deceleration in the rate of growth of agriculture during the past
decade, the government is pro-actively looking for solutions to the problems plaguing the
sector and has expressed it’s intent on charting out a well-defined road map for putting
agriculture at the top of the state agenda. To rejuvenate the Andhra Pradesh Agriculture
sector, the government has already initiated the mammoth task of pushing through
irrigation projects in the state.

Presently Andhra Pradesh Agriculture sector is characterised by lack of reliable
and timely information. There is also a dearth of analysis on various vital aspects of
business such as latest prices and trends of major national and international markets,
demand and supply pattern, scientific forecasting, crop and weather information, and its
impact on agriculture and allied sectors.

The Government has identified the need to establish a WTO cell at the
Commissionerate of Agriculture under Governance Reform Program supported by centre
for Good Governance. The Primary objective of the cell is to create awareness and build
capacities among farmers and entrepreneurs related to the implications of the new global
trade regime for the Andhra Pradesh Agriculture sector in particular, and the country in
general.

The cell would gather latest information Agreement on Agriculture of GATT and
agro-based environment and dissemination of information to farmers and other related
organisations. The cell would evaluate impact of different agreements and legislations relating to the WTO on provincial agriculture sector and devise measures to make the state government compatible with the requirements.

In Andhra Pradesh, there are 292 Agricultural Market Committees functioning, out of which 122 belongs to Telangana, 106 to Andhra and 64 Agricultural Market Committees to Rayalaseema.

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