

## CHAPTER - 3

### STATUS OF AGRICULTURE IN INDIA

#### 3.1 Introduction

India is the developing country in the world. It accounts only 2.4 percent geographical area of world and 4 percent water resources, but has to support to about 17 percent world's human population and 15 percent of the live stock.<sup>1</sup> Yet, more than 50 percent population is dependent on agriculture sector as a source of livelihood. Therefore, an economist says that, "agriculture is the backbone of Indian economy." It has played significant role in economic development of nation during planning period. It contributed 12 percent in GDP of India during 2011-12 at 2004-05 prices.<sup>2</sup> Agriculture and allied products accounted 9.08 percent share in total export of India during 2011-12. India has 10<sup>th</sup> rank in export of agriculture and food products in the world.<sup>3</sup>

India had an acute food shortage at the initial stage of independence because of low productivity and production in agriculture sector. But the situation has totally changed after introduction of green revolution. The goal of introducing green revolution was increase production of food grains through increasing per hectare yield of food grain crops by adaptation of new technology. This adaptation has brought fruitful results in agriculture sector. It is called Green Revolution in India.<sup>4</sup> The introduction of HYVP, IAAP and IADP during sixties leads to improvement in per hectare yield of wheat, rice. Later, India has achieved considerable growth in per hectare yield of cotton, oilseeds, fruits and milk. Hence, production of foodgrain has been increased from 55 million tonnes in 1949-50<sup>5</sup> to highest level of 259.32 million tonnes in 2011-12<sup>6</sup>.

---

<sup>1</sup> Government of India (2013) "*State of Indian Agriculture 2012-13*" Ministry of Agriculture, New Delhi, PP. 01

<sup>2</sup> Government of India (2014) "*Economic Survey of India 2013*", Ministry of Finance, New Delhi, PP. 174

<sup>3</sup> Government of India (2014), "*Economic Survey of India 2013*", Ministry of Finance, New Delhi, PP. 189

<sup>4</sup> Joshi Mahesh (1999), "*Green Revolution and its Impacts*", A.P.H. Publishing Corporation, New Delhi, PP. 10

<sup>5</sup> Ruddar Dutt & Sundram K (2003), "*Indian Economy*", ( Forty Eight Edition), S. Chand & Company Ltd, New Delhi, PP.485

Similarly, cropping pattern has significantly changed since green revolution. More than 83 percent land was under foodgrain crops and about 17 percent under non-food crops at beginning of 20<sup>th</sup> century in India.<sup>7</sup> The area under foodgrain crops in 1950-51 had 74 percent and in 2007 almost 64 percent of total cultivated area.<sup>8</sup> The shifting of cropping pattern from food grains crops to non-food grains crops was mainly due to the higher prices of non-food grains.

However, agriculture sector is facing serious problems since independence in India. Rural unemployment, uneven rainfall and fluctuations in agricultural production, droughts, lack of irrigation, increasing number and relative share of uneconomic operational holdings, exploitation of farmers by intermediaries and fluctuations in prices of agriculture produce are some of the major issues facing by farm sector in India. Hence, per capita income of rural people is lower and large numbers of rural people are surviving as poor's. The growth rate of agriculture sector is continuously lower than industrial and service sector in India. It is observed that the average growth rate of agriculture sector is less than 4 percent during last 65 years of planning in India.

Therefore, it is essential to formulate and implement effective policies and strategy for the sustainable and inclusive development of agriculture sector in India. Agriculture development is not only important for capacity to provide food, raw material but also due to its high potential to raise the income, employment level and ever expanding market for industrial goods for speedy development of overall economy. The importance of farm business in planning represented by former Prime Minister Pt. Jawaharlal Nehru in these words, "everything else can wait but not agriculture."<sup>9</sup>

Indeed, India has made significant advances towards achieving the goal of rapid agriculture growth, improving food security and reducing rural poverty during planning period. Despite of high population growth, impressive success has

---

<sup>6</sup>Government of India (2014), "*Economic Survey of India 2013*" Directorate of Economics & Statistics, New Delhi, PP. 175

<sup>7</sup> Ruddar Dutt & Sundram K (2003), "*Indian Economy*", ( Forty Eight Edition), S. Chand & Company Ltd, New Delhi, PP.488

<sup>8</sup> Ruddar Dutt & Sundram K (2003), "*Indian Economy*", ( sixty Two Revised Edition), S. Chand & Company Ltd, New Delhi, PP.525

<sup>9</sup> Swaminathan M. (2010), "*Agricultural Evolution during the last Sixty years*". Yojana, Vol. 54, January 2010, PP. 12-15.

not been achieved on food shortage but also surplus production of foodgrain having in India.

The objective of this chapter is to analyse evolution, status of agriculture, development of irrigation, policies and change in the methods of cultivation and cropping pattern since Vedic period to 21<sup>st</sup> century in India.

### **3.2 Evolution of agriculture in India**

India has an ancient tradition of farming since beginning of human civilization. It has been referred in Vedic literature and many other ancient scriptures. Therefore, the study consists methods of cultivation, cropping pattern and status of agriculture sector in economy and in human life is essential for strengthen the agriculture sector during recent period.

#### **i. Agriculture during Vedic period in India (3000 BC to 200 AD)**

Vedas, Upanishads and Puranas are the oldest literatures of human civilisation rather than important literatures of Vedic period. The scholar suggests that dates regarding the composition of Vedas right from 10000 BC to 1300 BC.<sup>10</sup> Generally, Vedic period divided into early Vedic period (3000 BC to 1300 BC) and later Vedic period (1200 BC to 26 BC). The former is known as Bronze Age and later is an Iron Age. Vedas, Upanishads, Puranas and books written by Maharishi Jaimini, Rishi Parashara, Maharishi Kashyap, Rishi Varahmihir, Surupala and many others has footprints of farm business.

Rig Vedic economy was sustained by a combination of pastoralism and agriculture.<sup>11</sup> Cow was the centre of the Vedic village economy and in the centre of the Kriśi (agriculture). Rig Veda has a reference of field levelling, seed processing and storage of grains in large jars. Almost 300 varieties of various trees have been listed in Atharvaved. The Vedic society had transformed from semi-nomadic life to settled agriculture in the later Vedic period. It leads to an increase in trade and competition for resources in Indian subcontinent. The base of kriśi had accept and kept trust on rhythm of nature. Agriculture was mostly dependent on rainfall and wood plough was the prime instrument of cultivation during this period. Agriculture was dominant economic activity along the Ganges valley

---

<sup>10</sup> [www.wikipedia.org.in](http://www.wikipedia.org.in).

<sup>11</sup> Basham A.L. (2008), *“The Wonder that was India: A Survey of the history and Culture of the Indian Subcontinent Before the coming of the Muslims”* Scholarly Publishing Office, University of Michigan,

during this period.<sup>12</sup> Paddy, barley and wheat were the main crops during later Vedic period.

The Serial “Mahabharata” represents about major crops of Vedic period. The famous story “Pohe of Sudama” indicates that paddy was the main foodgrain crop and processing on paddy also known to him during Vedic period. Moreover, loni and roti had used as shidori while going on the field for cattle raring indicates barely or jowar was major crops during same period.<sup>13</sup>

Rishi Parashara (400 BC) has written a book “Vrukshaurved.” This book deals with the measurement of rain, its length, rain forecasting and field crops. Moreover, various types of tree plantation, rising of nursery, grafting, transplanting, medicinal use of different plants and its application as pesticides are also described in this book. In the words of Parashara, “farmers yield gold if properly managed farm but lead to poverty if neglected farming.” He has pointed out continuous assessment of cultivation methods and research on farming is required for agriculture development.<sup>14</sup>

The book written by Sage Kashyapa (800 AD) namely “Krishisukti” deals with agriculture planning and characteristics of good farmers. He wrote in his book, kings must build deep reservoir of water and it should be regularly examined by him. Planting of trees is important, because it gives pleasure to birds and fruits, flowers and wood to human. Moreover, farmers should be virtuous, spirituals, free from shadripus and hospitable to guests. Farmers should be careful while utilizing natural resources. Farmers must be free from hypocrisy and jealousy. They must be efficient in calculation and sound in behaviour.<sup>15</sup>

Vedic and ancient Indian civilization was developing along river valleys. This civilisation was well developed irrigation system. It was playing crucial role in production of food grains and cotton. Vedas refers Avata (water wells), Kulya (canal) and Sarsi (dam). It indicates Vedic people were known about the devices of irrigation. Manu mentions the takata or artificial storage of water. Mahabharata

---

<sup>12</sup> [www.wikipedia.org](http://www.wikipedia.org)

<sup>13</sup> Serial of Mahabharata

<sup>14</sup> <http://www.indianscriptures.com>

<sup>15</sup> Nene Y.L. (2012), “*Environment and Spiritualism: Integral Parts of Ancient Indian Literature on Agriculture*”, Asian Agri-History, Vol. 16 (2), Asian Agri-History Foundation, Secunderabad, PP. 123-141

contains indication of irrigation from wells, tanks and canals. Kautilya says, “If privately managed dams are neglected for 5 years, their charge is taken over by the state. If water revisers constructed by public state, revenue is to be remitted for 5 years. If only repairs are carried out by public efforts revenue is to be remitted for 4 years. Magasthenis (400 BC) mentioned that the whole country was under irrigation and very prosperous because of double harvests.”<sup>16</sup>

Surupala a physician (1000 AD), wrote ‘Vrikshayurveda’ (Vriksha means plants and Ayurveda means science of life). He explained importance of trees in human life. In his words, “Planting of five trees is far better than giving birth to 10 sons.”<sup>17</sup>

Moreover, the trade with Asian countries had increased during the later Vedic period and economic prosperity has explained in the concurrent literatures. Therefore, gold, silver, precious metals had come with exchange of the agriculture product and agro processed goods in India.

There are various views regarding the land tenure during Vedic and later Vedic period. Manusmiriti represents, “land is the property of him who cut away the wood or who tilled and cleared it.” Yajnavalkya says that land belongs to the king and the tiller possesses only the utilitarian right of life. Arthashastra mentioned that land may be confiscated from those who do not cultivate it and given to others or it may be cultivated by village labourers and might pay less. In Jaimini’s view, “the king cannot give away the earth because it is not his exclusive property but it is common of all human beings to enjoy the fruits of their own labour in it.” All these views indicate that the state ownership was not totally absent, but limited by or combined with common ownership of the village.<sup>18</sup>

To sum up, farming and animal husbandry had dominant economic activities during the Vedic period. Paddy, barely, sugarcane, sesame, mustard, green gram, black gram were conventional crops and cotton, jute, sandal, camphor saffron, turmeric, fenugreek, cumin, fennel, black pepper, cardamom and clove were high value cash crops during the later Vedic period. The foodgrain

---

<sup>16</sup> Mamoria C.B. (1973), “*Agricultural Problems of India*”, Kital Mahal, Allahabad, PP.164.

<sup>17</sup> Nene Y.L. (2012), “*Environment and Spiritualism: Integral Parts of Ancient Indian Literature on Agriculture*”, Asian Agri-History, Vol. 16 (2), Asian Agri-History Foundation, Secunderabad, PP. 123-141.

<sup>18</sup> Mamoria C.B. (1973), “*Agricultural Problems of India*”, Kital Mahal, Allahabad, PP.411.

production was sufficient rather than surplus during this period. Finally, cow rearing was dominant than any other business, because cow dung had been used as fertilisers and medicine during Vedic period.

**ii. Agriculture during medieval period in India (200 AD to 1757 AD):**

This period can be divided into two parts i.e. early medieval and later medieval. The early medieval period is identified as prosperity of Indian economy. However, a regular war happened between the various kingdoms which created many problems before farmers and traders.<sup>19</sup> Systematic ploughing, manuring, weeding, irrigation and crop protection were practiced for sustained agriculture and water storage systems were designed properly in this period. It has positive impact on the agriculture diversification towards commercialisation and processing of agriculture produces. Wheat, jowar, barely, pulses (urid, arhar, gram) were the major crops. As well as, spices particularly black pepper, tobacco, cotton, jute, sugarcane and turmeric were the exportable cash crops produced during the medieval period in India. These products mostly used for export to Arabian countries to exchange with precious metals and horses.

Zamindari was developed as a state right into kings superior ownership of the entire domain, but the concurrent hereditary, permanent and long established right of the khu-kasht raiyats was recognised during Muslim rule. Land revenue was collected not only officials of state but by local chiefs or lieges with whom settlements were made by the central state authorities. The Subedars, Nawabs, and Princes were made settlements with the lower lieges. The process of land revenue was initiated under Sher Shah and perfected under Emperor Akbar.<sup>20</sup> Almost 1/3 of the 10 years average produce was fixed as the state revenue payable in cash in Akbar's regime.

Great attention had been given towards irrigation development during the Pre-Mughal and Mughal period. A dam built on river Kaveri is considered one of the oldest water reservoir structures of the world. The western Jamuna Canal (Firoze Shah Tuglak) had built for brought water to Delhi during 14<sup>th</sup> century in north India. The Bari Boab canal was executed by Ali Mardan Khan during the 17<sup>th</sup> century. The Eastern Jamuna Canel was built by the Mohamed Shah during

---

<sup>19</sup> [www.wikipedia.org](http://www.wikipedia.org)

<sup>20</sup> Mamoria C.B. (1973), "*Agricultural Problems of India*", Kital Mahal, Allahabad, PP.412.

the 18<sup>th</sup> century.<sup>21</sup> It means large efforts had made for irrigation development during medieval age in Indian subcontinent.

The essence is that agriculture sector had also dominant place and trade with the entire Asia and Europe bring economy in the phase of economic prosperity during the early medieval period in India. But, regular wars happened between the states and losses made by the militants in north and central region had adversely affected agriculture sector during later medieval period in India.

### **iii. Agriculture during colonial British period (1757 to 1947):**

The footprints of agriculture of British period have been seen in the literature written by Indian freedom fighters, socialists, tourists and reports of British government. The Indian market is extended throughout entire world. Invention of new sea route and industrial revolution had a positive and negative impact on Indian economy. The British East India Company had played a role of traders between the periods of 1600 AD to 1757 AD in India. But, company entered as a ruler from 1757 in Bengal state and till 1818 brought entire India under the rule of company.

The company had interested in commerce and collection of ransom from various Kings during the 1757 to 1857 period. It has an apathy and drift about the development of India. However, British Parliament has taken rights of ruling after 1857 independence war in India.<sup>22</sup> The series of famine occurred during last quarter of 19<sup>th</sup> century raised the need of looking towards illness of agriculture in India. An establishment of famine commission (1880, 1898 and 1902) and irrigation commission (1903) had impact of intense discontent of Indians. These commissions had made constructive suggestions for improvement of agriculture in India.<sup>23</sup> Therefore, some positive social and economic changes had happened during the British rule in India.

The British rulers have made structural changes in land tenure system. The entire characteristics of land system had transformed by them through the

---

<sup>21</sup> Mamoria C.B. (1973), "*Agricultural Problems of India*", Kital Mahal, Allahabad, PP.165

<sup>22</sup> Ruddar Dutt & Sundram K (2003), "*Indian Economy*", S. Chand & Company Ltd, New Delhi, PP.16

<sup>23</sup> Desai T. B. (1968), "*Economic History of India under British*", Vora & Company Publishers Pvt. Ltd; Mumbai PP. 23-37

introduction of British concept in India. The place of traditional share of government in farm produce has taken by the fixed revenue payment in cash. This system had not reference of good or bad harvest. The assessment of system and collection of revenue was individual basis or landlords appointed by the state in India, although it had varied according to circumstances of states and administrative convenience.

Zamindari, Ryotwari and Mahalwari land tenure systems were existed in India. It was based on relationship between land holder and government. The nature of tenure in each case determines land revenue, gradation of interest, right of land, their recognition and interrelation and nature of assessment. An area under Ryotwari was 38 percent, 24 percent belongs to permanent zamindari settlement and 38 percent to temporary settlement at the time of independence in India.<sup>24</sup> Major part of agriculture production was gone in the hands of zamindars and government in this land tenure system. It leads to tenants in vicious circle of poverty during British period.

Initially, the western Yamuna and Eastern Yamuna canals were renovated and remodelled and reconstructed Kaveri Delta system. Similarly, Masonry weir across the Coleroon (1836), Upper Ganga canal (1842), Agra and Betwa Canals in Utter Pradesh, Sirhind Canal in Punjab, Mutha Canal in Bombay, Periyer canal in south India were the notable works consists to irrigation extension during British period.<sup>25</sup>

As well as, reforms made in banking was helpful for extension of banking sector during British period in India. The Co-operative Act (1904 and 1912), establishment of RBI (1935) and continuous assessment of banking sector had a positive impact on increasing quantity and quality of banks in India. Therefore, the average number of cooperative societies had increased up to 159180 and 107.32 lakh members during 1945-46 to 1949-50 in India.<sup>26</sup>

The British government had established research institutes and Agriculture Colleges for imparting agriculture education and research in India. Indian Council of Agricultural Research (1929), Indian Agricultural Research Institute, Delhi

---

<sup>24</sup> Mamoria C.B. (1973), "*Agricultural Problems of India*", Kital Mahal, Allahabad, PP.417

<sup>25</sup> Mamoria C.B. (1973), "*Agricultural Problems of India*", Kital Mahal, Allahabad, PP.165

<sup>26</sup> Nanavati M. & Anjaria J. (1960), "*The Indian Rural Problem*", Indian Society of Agricultural Economics, Bombay, PP. 364

(1936), Indian Institute of Veterinary Research, Izatnagar, National Dairy Research Institute, Karnat and many other research institutes were established for promoting research on various crops, fruits and animals during the British period. Almost, 95 agriculture colleges were established for providing theoretical and practical education of agriculture in India, which was connected with the Pusa Research Institute.<sup>27</sup> It means the base of agriculture research and education had formulated by British in India.

In short, the extension of irrigation, banking sector and agricultural research was the major positive works to develop agriculture sector. However, British had played role of administrator and collection of revenue than welfare of India. Hence, there was no motivation to increase crop yield. Consequently, agriculture sector ruined through exploitation and insecure land ownership in India.

#### **iv. Agriculture during planning period (1951-2011):**

The economic situation at the time of independence was quite unfavourable because of partition of India and Second World War. India was left with 82 percent population of undivided India, 69 percent of land under rice, 65 percent under wheat, 75 percent under cereals and 70 percent area under irrigation.<sup>28</sup> Cultivators were under heavy debt and holdings were quite uneconomic. Farmers were largely facing issue of exploitation. Therefore, government had a need of structural changes in agriculture sector. These changes has made through the economic planning and various judicious reforms during planning period. India has implemented 12 five year plans during last sixty five years and achieved great development in agriculture sector.

The prime objectives of development plans have been improve standard of living and promote for social welfare, although priority has given to different issues to achieve goal of rapid economic growth and social justice during planning period in India. Therefore, period of economic planning can be divided into four phases. The first phase of development covers the period of independence influenced both by the indigenous thinking of agricultural development and western thinking of industrial development and over during mid-sixties. The

---

<sup>27</sup> Mamoria C.B. (1973), "*Agricultural Problems of India*", Kital Mahal, Allahabad, PP.801

<sup>28</sup> Mamoria C.B. (1973), "*Agricultural Problems of India*", Kital Mahal, Allahabad, PP.806

second phase consists of Green Revolution after the mid-sixties and it continued till the announcement of new economic policy. During the period of green revolution agriculture sector not only met the domestic demand of food but also surplus food production had seen in India. Moreover, rapid diversification of cropping pattern, accepting new technologies and commercialisation had seen during the period of green revolution. Third phase has started with announcement of new economic policy rather than since 1985 and continued till end of 10<sup>th</sup> five year plan. The government has neglected agriculture sector and consequently new issues have born such as open market policy, reduction of agriculture subsidy, declining public expenditure on agriculture sector, farmers' suicide and many more during the economic reforms period. The fourth phase have initiated from 2002, in which government has focused on structural changes in agriculture sector. However, for simplicity study of agriculture development has made according to the five year plan.

**i. First five year plan (1951-1956):**

The approach of first plan towards agricultural development was to avoid farmers' exploitation, increase productivity of agriculture and promote farmers for increasing use of inputs and technology. Moreover, special focus was laid on land reforms, to overcome cooperative and marketing institutions from the institutional impediments for agriculture development. A Community development programme had launched in 1952 to achieve the goals of plan.<sup>29</sup> Similarly, the programme of land reforms had started in 1948 in Madras state, although the constitutional amendment (article 31) made in 1951 and cleared the way of completion of land reforms programme.<sup>30</sup> This programme considers abolition of intermediaries, tenancy reforms including regulation of rent and ownership of tenants, ceiling on land holding, consolidation of holdings and prevention on subdivision and fragmentation of land. This programme had continued till sixth five year plan.

Agriculture including irrigation and power was given top priority to achieve the goal of plan. The relative share of plan outlay on agriculture and community development, major and minor irrigation and power development was

---

<sup>29</sup> Sharma J. S. (1981), "*Growth and Equity: Policies and Implementation in Indian Agriculture*", International food Policy Research Institute, Washington (USA) PP. 12

<sup>30</sup> Suri M & Mathur V. (2006), "*Economic Planning in India 1951-52 to 2006-07*", New Century Publications, New Delhi, PP. 45

15 percent, 16 percent and 13 percent respectively in first plan.<sup>31</sup> Hence, national income increased by about 17.5 percent, per capita income by 10.5 percent, net output of agriculture and ancillary fields by 14.7 percent. Similarly, 3 million hectares of irrigation potential created and increased power generation from 2.3 million Kw to 3.4 million Kw during the first five year plan.<sup>32</sup> An economist says that the first plan has given more success than it was expected.

## ii. **Second five year plan (1956-1961):**

Top priority has given to the industrial sector to achieve goal of balanced development in second plan. Hence, share of plan outlay on industrial sector had 24 percent (Rs. 1080 crores) and 20 percent (Rs. 950 crores) on agriculture and irrigation.<sup>33</sup> Therefore, programmes for agriculture development had not launched except Intensive Agricultural District programme (IADP). This programme had started in 1960-61 and subsequently extended to another thirteen districts to provide package of inputs like improved seeds, fertilisers and modern techniques for increasing productivity of agriculture sector. Moreover, decentralisation of democratic power was made through setting up of Zilla Parishad<sup>34</sup> and Movement Control Order was passed in 1960 to regulate the distribution of fertilisers.<sup>35</sup>

Establish socialistic pattern of society was also goal of second plan.<sup>36</sup> Therefore, selected targets were increase national income by 25 percent, food grain production by 24 percent (65 million tonnes in 1955-56 to 80.5 million tonnes in 1960-61) and irrigation extension up to 21 million acres during the second five year plan. However, plan had failed to achieve targets due to low performance of agriculture sector and shortfall in results of industrial sector. In

---

<sup>31</sup> .Mamoria C.B. (1973), "*Agricultural Problems of India*", Kital Mahal, Allahabad, PP.806

<sup>32</sup> Dewett K & Singh G. (1959), "*Indian Economics*", Premier Publishing Company, Delhi, PP. 724

<sup>33</sup> Ruddar Dutt & Sundram K. (2003), "*Indian Economy*", S. Chand & Company Limited, New Delhi, PP. 283

<sup>34</sup> Sharma J. S. (1981), "*Growth and Equity: Policies and Implementation in Indian Agriculture*", International food Policy Research Institute, Washington (USA) PP. 13-14

<sup>35</sup> Government of India (2004), "*Annual Report 2003-04*", Ministry of Chemical & Fertilizers, New Delhi, PP. Annexure-01

<sup>36</sup> देशमुख पी . (1989), "आर्थिक धोरण आणि नियोजन", पिंपळापुरे आणि कंपनी पब्लिशर्स, नागपुर, पान. 414

absolute terms, agricultural production had increased by only 19 percent<sup>37</sup> and national income rose by 20 percent.<sup>38</sup>

### iii. Third five year plan (1961-1966):

The main goal of third five year plan was to be self reliant and self generating economy. Plan had given first priority to agriculture sector and aimed at doubling the growth rate of agricultural production, produce self-sufficient food grains to meet the need of nation and enough commercial crops to meet the needs of export and industry. Moreover, target of irrigation extension had 20 million acre during plan period.<sup>39</sup> Hence, target of national income increase by 25 percent and agriculture production by 30 percent had selected during plan period.

Unfortunately, an adverse impact on agricultural production during 1965-66 and 1966-67 had marked due to unfavourable weather.<sup>40</sup> Moreover, attack of Pakistan and China on our territory had an adverse impact on economic development during last years of plan.<sup>41</sup> Therefore, national income has risen by only 2.8 per annum against the target of 5 percent per annum.<sup>42</sup> As well as, agriculture production has increased by 2.6 percent per annum during first four years of plan period and it has declined by 17 percent during last year due to drought.<sup>43</sup>

In 1964-65 and subsequent years, modified version of Intensive Agricultural District Programme was extended in several parts of the country in 1964-65 by the name of Intensive Agricultural Area Programme. Moreover, Agricultural Prices Commission came into existence in January 1965 for giving assurance of stable prices to agriculture produces and farm income.<sup>44</sup> APC was mandated to recommend minimum support prices (MSPs) to stimulate the

---

<sup>37</sup> Mamoria C.B. (1973), *“Agricultural Problems of India”*, Kitab Mahal, Allahabad, PP.810

<sup>38</sup> देशमुख पी . (1989), “आर्थिक धोरण आणि नियोजन”, पिंपळापुरे आणि कंपनी पब्लिशर्स, नागपुर, पान 416

<sup>39</sup> Mamoria C.B. (1973), *“Agricultural Problems of India”*, Kital Mahal, Allahabad, PP.814-815

<sup>40</sup> Suri M & Mathur V. (2006), *“Economic Planning in India 1951-52 to 2006-07”*, New Century Publications, New Delhi, PP. 183

<sup>41</sup> Ruddar Dutt & Sundram K. (2003), *“Indian Economy”*, S. Chand & Company Limited, New Delhi, PP. 288

<sup>42</sup> Ruddar Dutt & Sundram K. (2003), *“Indian Economy”*, S. Chand & Company Limited, New Delhi, PP. 301

<sup>43</sup> .Mamoria C.B. (1973), *“Agricultural Problems of India”*, Kital Mahal, Allahabad, PP.817

<sup>44</sup> Puri V. & Misra S. (2014), *“Indian Economy- Its Development Experience”*, Himalaya Publishing House, Mumbai PP.318

cultivators for adopting modern technology, increase per hectare yield and overall grain production in line with the emerging demand pattern of nation.

**iv. Fourth five year plan (1969-74):**

Fourth plan could not be commenced after the expiry of third five year plan due to hostilities of 1962 (China) and 1965 (Pakistan), steep fall in agricultural production over two consecutive years (1965-66 and 1966-67), devaluation of rupee and inflationary pressure.<sup>45</sup> These phenomenons necessitated readjustment in the planning and consequently formulated three annual plans.

Growth with stability and progressive achievement of self reliance was prime aim of fourth plan. The plan has two main objectives for the agricultural sector. The first objective was to provide the necessary conditions for a sustained increase about 5 percent per annum over the next decade and second enables large section of population (small farmers, agricultural labourers, farmers of dry areas) for participating in development and share benefits.<sup>46</sup>

Small farmers' development agency (SFDA), Marginal Farmers and Agricultural Labour Development Agency (MFAL), Command Area Development Project (CADP) and Drought Prone Area Programme (DPAP) had launched in order to participating small farmers, agriculture labourers and farmers of rain fed area to develop agriculture sector during this plan.<sup>47</sup>

Moreover, nationalisation of 14 private commercial banks had one of the important tasks of government towards expansion and development of banking sector. Fertiliser subsidy was announced initially in 1973-74 on the imported fertilisers during the plan.<sup>48</sup>

**v. Fifth five year plan (1974-1979):**

Fifth plan was formulated against the backdrop of severe inflationary pressure in India. The plan proposed to achieve the two main objectives i.e.

---

<sup>45</sup> Suri M & Mathur V. (2006), "*Economic Planning in India 1951-52 to 2006-07*", New Century Publications, New Delhi, PP. 236

<sup>46</sup> Suri M & Mathur V. (2006), "*Economic Planning in India 1951-52 to 2006-07*", New Century Publications, New Delhi, PP. 259

<sup>47</sup> Sharma J. S. (1981), "*Growth and Equity: Policies and Implementation in Indian Agriculture*", International food Policy Research Institute, Washington (USA), PP. 15

<sup>48</sup> Gulati A. & Karla G. (1992), "*Fertilizer Subsidy: Issues related to Equity and Efficiency*", Economic & Political Weekly, Vol. XXVII (13), March 28, 1992, PP. A-43

removal of poverty and attainment of self reliance through promotion of higher growth rate, better distribution of income and step up domestic saving rate.<sup>49</sup> Plan had targeted an annual growth rate of 5.5 percent national income for achieving above the goal while the actual achievement was 5.0 percent.<sup>50</sup>

A 20 point programme was introduced in 1975 to achieve development in various sectors. The priorities had given to increase agriculture production, irrigation level, soil and water conservation, research and education, cooperation, flood control, power sector and rural roads in this programme.<sup>51</sup> Fertilizer subsidy was given initially (1973) on the imported fertilizers on account of their rising cost during this plan. For this, government had introduced Retention Price Scheme (RPS) for nitrogenous fertilizers in November 1977. Subsequently, RPS was extended to phosphatic and other complex fertilizers from February 1979.<sup>52</sup>

#### **vi. Sixth five year plan (1979-84):**

There were two sixth five year plans. The Janata Party Sixth Five Year Plan (1978-83) sought to reconcile the objectives of higher production with greater opportunity for employment. Focus of plan was to enlarge employment opportunities in agriculture and allied activities, to encourage household and small industries for producing consumer goods for mass consumption and raise income of lowest class through minimum needs programme.

The new sixth plan (1980-85) was launched by the congress party with the prime objective of direct attack on the problem of poverty by creating conditions of expanding economy.<sup>53</sup> Plan had adopted strategy of strengthen infrastructure for agriculture and industrial sector. This plan had laid stress on dealing with inter related problems through a system approach rather than in separate compartments, greater and efficient management, intensive monitoring and active involvement of people. Plan had targeted growth rate of 5.2 percent per annum but actually achieved 5.4 percent.

---

<sup>49</sup> Dutt Sundram (2011), *“Indian Economy”*, S Chand Publication, Delhi, PP. 288

<sup>50</sup> देशमुख पी . (1989), “आर्थिक धोरण आणि नियोजन” , पिंपळापुणे आणि कंपनी पब्लिशर्स, नागपुर, पान 429

<sup>51</sup> Suri M & Mathur V. (2006), *“Economic Planning in India 1951-52 to 2006-07”*, New Century Publications, New Delhi, PP. 326-330

<sup>52</sup> Ashok & Karla G (March 1992), *“Fertilizer Subsidy: Issues Related to Equity and Efficiency”*, Economic & Political Weekly, Vol - XXVII (13), March 28, 1992, PP. A- 43- A48.

<sup>53</sup> Suri M & Mathur V. (2006), *“Economic Planning in India 1951-52 to 2006-07”*, New Century Publications, New Delhi, PP. 347

Plan had given priority for agriculture development for bridging the gap prevailing between actual and potential farm yields through the removal of constraints responsible for this gap. The strategy of extend benefits of new technology to more farmers, cropping systems, regions and promote for greater farm management through concurrent attention for cash and non cash crops to achieve the goal of agriculture sector. Moreover, a strategy of promote scientific land water use patterns based on consideration of ecology, economics, energy, soil conservation, employment and land reforms also adopted in plan.<sup>54</sup>

The projected growth rate of plan had increased food grains output by 6.5 per cent per annum using a base level figure of 109 million tonnes of 1979-80. However, growth rate works out to 3.2 per cent. National Bank for Agriculture and Rural Development (NABARD) established in July, 1982 was the important development in the field of agriculture credit of this plan. NABARD had emerged as an apex national institution accredited with all matters concerning policy, planning and operation in the field of credit for agriculture and other economic activities of rural areas.

**vii. Seventh five year plan (1985-1990):**

Plan emphasised policies and programmes which aimed rapid growth in food grains production, extension of employment level and per hectare yield.<sup>55</sup> A Jawahar Rogzar Yojana had launched in addition to already existing programme to reduce unemployment, regional imbalance and incidence of poverty during plan. Similarly, raising the productivity of rice in eastern region and in rainfed and dry land agriculture through extension of green revolution programme had also prime aim of plan.<sup>56</sup> A plan had targeted 4 percent annual growth rate of agriculture production.<sup>57</sup> The Special Rice Production Programme for eastern region, National Watershed Development Programme for rainfed agriculture, Scheme for

---

<sup>54</sup> Suri M & Mathur V. (2006), *“Economic Planning in India 1951-52 to 2006-07”*, New Century Publications, New Delhi, PP. 356-357

<sup>55</sup> Dutt & Sundram, *“Indian Economy”*, 62<sup>nd</sup> Edition, S. Chand Publication, New Delhi, PP.288

<sup>56</sup> Suri M & Mathur V. (2006), *“Economic Planning in India 1951-52 to 2006-07”*, New Century Publications, New Delhi, PP. 390

<sup>57</sup> Suri M & Mathur V. (2006), *“Economic Planning in India 1951-52 to 2006-07”*, New Century Publications, New Delhi, PP. 390

assistance to small and marginal farmers had introduced to achieve targets of agriculture development in plan.<sup>58</sup>

A new seed policy was announced in 1988 for permitting import of high quality seed and planting material after verification of performance in Indian conditions.<sup>59</sup> Similarly, third phase of National Seed Project supported by the World Bank was also launched in this plan. Besides, Comprehensive Crop Insurance Scheme has been in operation since Kharif 1985 for mitigating risk of farm sector.<sup>60</sup>

The plan had targeted 5 percent GDP growth, but actually GDP grew 5.6 percent and food grains production growth was 3.23 percent during the plan.

#### **viii. Eighth five year plan (1992-97):**

The Eighth Plan was launched when both international and domestic market were at turning point. All centralised economies of world were disintegrating and economies of several regions are getting integrated under a common philosophy of growth guided by the market forces and liberal policies. This plan was based on autonomy and efficiency induced by competition.

Generate surplus food grains production for export and achieve self sufficiency in pulses and oilseeds was the prime aim of plan. An expected annual growth rate was 4 percent in respect of gross value of agricultural output.<sup>61</sup> The strategy of more focus on dry land farming, spreading benefits of green revolution to the eastern region and improving efficiency of irrigation adopted in this plan.

The Eighth Plan had aimed at consolidating gains from base built over the years in agricultural production, sustaining improvements in productivity and production for meeting increasing demands of growing population; enlarging income of farmers and realising potential of nation by stepping up agricultural export. Therefore, government had continued programmes introduced during sixth and seventh plan. Similarly, Scheme for Balanced and Integrated use of Fertiliser

---

<sup>58</sup> Suri M & Mathur V. (2006), "*Economic Planning in India 1951-52 to 2006-07*", New Century Publications, New Delhi, PP. 404

<sup>59</sup> Ruddar Dutt & Sundram K. (2003), "*Indian Economy*", forty eight edition, S. Chand & Company Limited, New Delhi, PP. 543

<sup>60</sup> Vyas V. & Surjit Singh (2006) "*Crop Insurance in India: Scope for improvement*", Economic & Political Weekly, Vol. , Nov. 4, 2006, PP. 4585-4594

<sup>61</sup> Subba Reddy & P. Raghu Ram (2004), "*Agricultural Economics*", Oxford & IBH Publishing Company Private Limited, New Delhi, PP. 592

and National Project on Development of Fertiliser Use in Rainfed Areas were introduced in 1990-91 and 1991-92 in eighth Plan.<sup>62</sup> The prices of phosphatic and potassic fertilisers were decontrolled from 25<sup>th</sup> October 1992 during this plan.<sup>63</sup> The Plan had 5.6 percent annual growth rate but actually achieved 6.7 percent, which was higher than the target.

**ix. Ninth five year plan (1997-2002):**

The plan has given top priority to generate adequate productive employment, eradication of poverty, price stability, assurance of food and nutritional security to all, safe drinking water, primary health care services, universal primary education, shelter, road connectivity to all, assurance of sustainable environment, empowerment of women and socially disadvantaged groups, promote public bodies for agriculture and rural development.<sup>64</sup>

The plan has targeted doubling the food production and make India hunger free within 10 years period. Similarly, plan focused on rising of farm productivity and other economic activities to achieve the goal of employment generation and income of rural people of India.<sup>65</sup> The expected growth rate of agriculture output had 3.82 percent and agriculture sector 4.5 percent per annum. Similarly, targeted annual growth rate of livestock had 6.6 percent, poultry 7.5 percent and fisheries 6.5 percent.<sup>66</sup> However, actual growth rate of GDP was 5.35 percent and 2.06 percent of agriculture sector.<sup>67</sup>

**x. Tenth five year plan (2002-2007):**

The target of 8 percent annual GDP growth either through direct linkages that exist or through resources that were generated by growth process for more intensive public interventions had fixed for the plan. Moreover, the plan had adopted the redefining role of government in context of emergence of strong and

---

<sup>62</sup> [www.planningcommission.gov.in](http://www.planningcommission.gov.in)

<sup>63</sup> Government of India (2005), “*Annual Report 2004-05*” Ministry of Chemicals & Fertilizers, New Delhi, PP.22

<sup>64</sup> Suri M & Mathur V. (2006), “*Economic Planning in India 1951-52 to 2006-07*”, New Century Publications, New Delhi, PP. 512

<sup>65</sup> Suri M & Mathur V. (2006), “*Economic Planning in India 1951-52 to 2006-07*”, New Century Publications, New Delhi, PP. 554

<sup>66</sup> Subba Reddy & P. Raghu Ram (2004), “*Agricultural Economics*”, Oxford & IBH Publishing Company Private Limited, New Delhi, PP. 592

<sup>67</sup> Government of India (2002), “*Tenth Five Year Plan 2002-2007*” Vol. 1”, Planning Commission, New Delhi.PP.24

vibrant private sector, provision of infrastructure, flexibility in fiscal and monetary policies.<sup>68</sup> But actual economic growth rate was 7.77 percent per annum.<sup>69</sup>

The plan targeted 4 percent agricultural growth rate based on efficient use of soil and water conservation and expected benefits of agricultural development must reach to farmers of all region. Moreover, agricultural sector should have taken benefits of exports by facing challenges of economic liberalisation and globalisation.<sup>70</sup> Plan had introduced new Pricing Scheme instead of Retention Price Cum Subsidy (RPS) on 1 April 2003 and adopted Tariff Committee recommendations for the complex fertilizers in this plan.<sup>71</sup>

#### **xi. Eleventh five year plan (2007-2012)**

The central visions of Plan was built economy on their strengths and trigger a development process for ensuring broad-based improvement in quality life of SC, ST, OBC, minorities and women. A target of 9 percent growth selected that yields broad-based benefits and ensures equal opportunity to all. However, actual GDP growth rate might 8 percent per annum during plan.<sup>72</sup>

The plan has given priority to rainfed agriculture for increasing per hectare yield and reduces the gap of productivity of rainfed farming and irrigated farming to achieve the 4 percent selected target of agriculture growth during this plan.<sup>73</sup> Similarly, Rashtriya Krishi Vikas Yojana (RKVY) had been launched during the plan period to incentivize state governments for preparing district level agricultural plans.<sup>74</sup>

The preparation of district-specific agricultural plan is an important innovation and expected to focus on local crop productivity constraints. Adequate funding will be provided to district planning under the scheme and central

---

<sup>68</sup> Suri M & Mathur V. (2006), "*Economic Planning in India 1951-52 to 2006-07*", New Century Publications, New Delhi, PP. 581

<sup>69</sup> Government of India (2008), "*Eleventh Five Year Plan*" Vol. 01, Oxford University Press, New Delhi, PP. 01

<sup>70</sup> Ruddar Dutt & Sundram K. (2003), "*Indian Economy*", S. Chand & Company Limited, New Delhi, PP. 504

<sup>71</sup> Government of India (2013), "*Annual Report 2012-13*", Ministry of Chemicals & Fertilisers, New Delhi, PP.77

<sup>72</sup> Government of India (2013), "*Twelfth five year plan*", vol. I, Planning commission of India, Delhi, PP.09

<sup>73</sup> Government of India (2008), "*Eleventh Five year Plan*" vol. I, Planning commission of India, New Delhi, PP. Viii

<sup>74</sup> Government of India (2013), "*Twelfth five year plan*", vol. I, Planning commission of India, New Delhi, PP.09

government had given more support to state extension systems in plan.<sup>75</sup> Plan has suggested strengthen and restructure the ICAR and focus of same must be on farm oriented research.

The plan focuses on more investment in agriculture rather than extension of irrigation and efficient use of water. Therefore, the target of Bharat Nirman was extended to 2.5 million hectares irrigation extension per annum by 2008-09 was fixed in this plan.<sup>76</sup> In reality, average GDP growth rate of agriculture sector has achieved 3.7 percent in the plan.<sup>77</sup>

### **3.3 Status of agriculture during planning period in India**

India is achieved significant development in agriculture sector in terms of production and productivity of major crops and diversification of cropping pattern. The major features of Indian agriculture are discussed below.

#### **i. Indian agriculture and cultivated area**

Pattern of land utilization in India is given in table 3.1. In absolute terms, 328.73 million hectare is geographical area of nation, but reporting area is 305.61 million hectare. The proportion of net sown area to reported land area has increased from 41.77 percent to 46.91 percent during the 1950-51 to 1990-91 and later declined to 45.81 percent in 2009-10. Similarly, gross cropped area has increased continuously 131.89 MH to 192.20 MH between the period of 1950-51 to 2009-10 (see table 3.1).<sup>78</sup>

---

<sup>75</sup> Planning Commission (Government of India), *“Eleventh Five year Plan”* vol. I, Planning commission of India, New Delhi, PP. 06

<sup>76</sup> Planning Commission (Government of India), *“Eleventh Five year Plan”* Vol. I, Planning commission of India, New Delhi, PP. 08

<sup>77</sup> Planning Commission (Government of India) (2013), *“Twelfth five year plan”*, vol. I, Planning commission of India, New Delhi, PP.09

<sup>78</sup> Government of India (2012), *“Indian Agriculture at a Glance- 2012”* Ministry of Agriculture, New Delhi, PP. 259-260

**Table 3.1: Land use pattern in India during planning period (area in million hectares)**

<b>Particulars</b>	<b>1950-51</b>	<b>1960-61</b>	<b>1970-71</b>	<b>1980-81</b>	<b>1990-91</b>	<b>2000-01</b>	<b>2009-10</b>
<b>Geographical area</b>	328.73	328.73	328.73	328.73	328.73	328.73	328.73
<b>Reporting area for land utilization Stat.</b>	284.32	298.46	303.75	304.16	304.86	305.19	305.61
<b>Forest area</b>	40.48 (14.24)	54.05 (18.11)	63.83 (21.01)	67.46 (22.18)	67.81 (22.24)	69.84 (22.85)	70.04 (21.2)
<b>Land not available for cultivation</b>	47.52	50.75	44.61	39.55	40.48	41.23	42.95
<b>A. Area under non agri. Use</b>	9.36	14.84	16.48	19.60	21.09	23.75	26.17
<b>B. Barren &amp; Uncultivable land</b>	38.15	16.48	28.13	19.96	19.39	17.48	16.78
<b>Other Uncultivated land exc. Fallow</b>	49.45	37.64	35.13	32.31	30.22	27.74	26.36
<b>Fallow land</b>	28.12	22.82	19.33	24.55	23.37	25.04	26.24
<b>Net sown area</b>	118.75 (41.77)	133.20 (44.63)	140.86 (46.37)	140.29 (46.12)	143.00 (46.91)	140.70 (46.11)	140.02 (45.81)
<b>Area sown more than once</b>	13.15	19.57	24.93	34.63	42.74	47.59	52.18
<b>Gross cropped area</b>	131.89	152.77	165.79	172.63	185.74	188.29	192.20

Source: Government of India (2013), *“Indian Agriculture at a Glance- 2012”*, Ministry of Agriculture, New Delhi, PP. 259-260

Note: Numbers in parenthesis shows percentage to total geographical area and calculated.

## ii. Indian agriculture and employment generation

Agriculture is the main source of employment generation in India. It has capacity to absorb employment. The proportion of rural population has declined from 82.7 percent to 68.73 percent during the period 1950-51 to 2011. In absolute terms, the working population engaged in the agriculture sector increased from 97.2 million to 234.1 million during same period. This rural population is mainly depended on agriculture sector and allied activities for livelihood. In other words, the percentage engaged in the agriculture sector declined but number of peoples engaged in agriculture sector has increased 2.5 times during planning period. Table 3.2 shows absolute and relative share of rural population over the period 1951 to 2011 in India.

**Table 3.2: Absolute and relative share of rural population in India**

Year	Total Population (crores)	Rural Population (crores)	Cultivators (in millions)	Agricultural Labourers (in million)	Total (million)
1951	36.11	29.86 (82.7)	69.9 (71.9)	27.3 (28.1)	97.2
1961	43.92	36.03 (82.0)	99.6 (76.0)	31.5 (24.0)	131.1
1971	54.82	43.90 (80.1)	78.2 (62.2)	47.5 (37.8)	125.7
1981	68.33	52.39 (76.7)	92.5 (62.5)	55.5 (37.5)	148.0
1991	84.64	62.89 (74.3)	110.7 (59.7)	74.6 (40.3)	185.3
2001	102.87	74.26 (72.2)	127.3 (54.4)	106.8 (45.6)	234.1
2011	121.2	83.31 (68.73)	N.A.	N.A.	N.A.

Source: Government of India (2013), *“Indian Agriculture at a Glance- 2012”*, Ministry of Agriculture, New Delhi, PP.21

Note: numbers in parenthesis shows percentages to total and calculated.

A heavy pressure of population on agriculture leads to sub-division and fragmentation of land and reducing average size of operational holding, increasing number of disguised unemployment and decline in the productivity of agriculture labour ratio to non-agriculture labour ratio. The ratio of agriculture worker productivity to non agriculture worker productivity has continuously declined from 0.26 to 0.20 during the 1972-73 to 2004-05. An all India Productivity of non agricultural labour was 4.97 times more than the agricultural labourers in 2004-05.

It was highest 11.71 times in Maharashtra and lowest 3.09 times in Karnataka state of India.<sup>79</sup>

According to Lewis, “underdeveloped economies are always overpopulated relative to capital and natural resources and marginal productivity of labour is negligible. Therefore, new industries must be established and expansion of existing industries without limit on current wage by drawing upon labour from subsistence sector. In the words of Fei-Renis, an underdeveloped country always faces the problem of surplus labour force that engaged in agriculture sector. This surplus labour force should be contributed in economic development of nation. Therefore, reallocation of surplus agricultural workers is essential and it transfer to industrial sector.

### iii. Indian agriculture and share in national income

Table 3.3 represents national income at current prices and 2004-05 prices and share of agriculture sector during planning period.

**Table 3.3: Gross domestic product and share of agricultural sector in India**

(Numbers in crores rupees)

Year	Current prices		2004-05 Prices	
	GDPFc	Share of Agriculture & Allied Activities	GDPFc	Share of Agriculture & Allied Activities
<b>1950-51</b>	10036	5274 (52.55)	279618	150191 (53.68)
<b>1960-61</b>	17049	7434 (43.60)	410279	204340 (49.80)
<b>1970-71</b>	44382	19086 (43.00)	589787	258665 (43.85)
<b>1980-81</b>	136838	50760 (37.09)	798506	305906 (38.30)
<b>1990-91</b>	531814	168166 (31.62)	1347889	444880 (33.00)
<b>2000-01</b>	1991982	506476 (25.42)	2342774	592227 (25.27)
<b>2009-10</b>	6091485	1236765 (20.30)	4507637	766734 (17.00)
<b>2010-11(Q)</b>	7157412	1461095 (20.41)	4885954	818524 (16.75)
<b>2011-12(A)</b>	8279975	1650396 (19.93)	5222027	834190 (15.97)

Source: Government of India (2012), “*Economic Survey 2011-12- Statistical Appendix*”, Directorate of Economics & Statistics, New Delhi, PP. Table A5, A6

Note: 1) Numbers in parenthesis shows percentage to GDP and computed.

2) Agriculture & Allied Activities includes Agriculture, Forestry, Fishing, Mining and Quarrying

<sup>79</sup> Government of India (July 2007), “*Report of the expert group on agricultural indebtedness*”, Ministry of Finance, New Delhi, PP. 26

The agriculture sector has a significant contribution in GDP of India, although trends are showing declining share during planning period. The agriculture and allied activities was contributed about 59 percent in 1950-51. However, share of agriculture has been declined gradually due to rapid growth of industrial and service sector and it was 16.9 percent in 2009-10.<sup>80</sup>

Table 3.3 shows GDP and share of agriculture sector at current and constant (2004-05) prices during planning period in India. A share of agriculture and allied activities at current prices was 52.5 percent in 1950-51 and declined up to 20.3 percent in 2009-10. In the words of Lewis, Fei-Ranis, “surplus population in underdeveloped countries create issues in agriculture sector due to heavy disguised unemployment and low level of capital formation. This surplus population should transfer to industrial sector and service sector. A reducing share of population engaged in agriculture sector and declining share of agriculture sector in national income is one of the important indicators of economic development of nation.”

**Table 3.4**  
**Plan wise economic and agriculture growth rate in India**

Plan	Economy	Agri. Including Livestock
First Plan (1951-56)	3.6	3.2
Second Plan (1956-61)	4.3	3.6
Third Plan (1961-66)	2.8	-0.7
Fourth plan (1969-74)	3.4	3.0
Fifth Plan (1974-78)	4.9.	4.0
Sixth Plan (1980-85)	5.5	6.3
Seventh Plan (1985-90)	5.7	3.1
Eighth Plan (1992-97)	6.5	4.9
Ninth Plan (1997-2002)	5.7	2.5
Tenth Plan (2002-2007)	7.6	2.5
Eleventh Plan (2007-12)	8.0	3.8

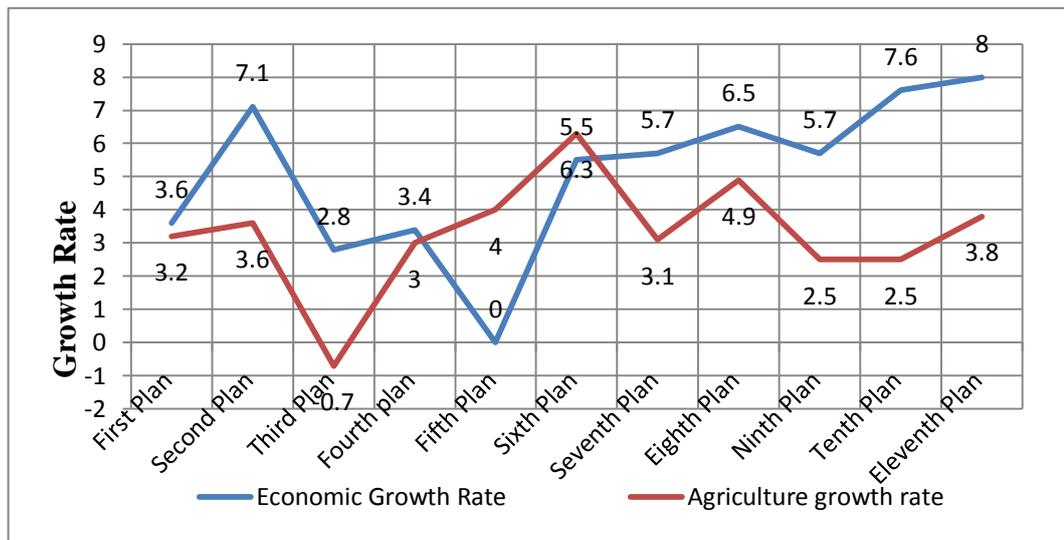
Source: Government of India (2013), “*State of Indian Agriculture 2012-13*”, Ministry of Agriculture, New Delhi, Pp. 165-166

<sup>80</sup> Dhar P.K. (2011), “*Indian Economy Its Growing Dimensions*”, Kalyani Publication, Ludhiana, PP. 223

An economic growth rate is continuously higher than agriculture growth rate during planning period (see table 3.4). It has positive correlation in India. This correlation was 0.63 during the period of 1951-1997 (first-eighth plan) but declined to 0.45 during the 1992-2012 (eighth-eleventh plan). To sum up, impact of agriculture growth on economic growth has been declined due to increasing share of secondary and tertiary sector in national income of India.

**Figure 3.1**

**Economic growth and agriculture growth during five year plan in India**



Source: Government of India (2013), “*State of Indian Agriculture 2012-13*”, Ministry of Agriculture, New Delhi, PP. 165-166 and taken from table 3.4

Figure 3.1 represents that there is a positive association between economic growth rate and agriculture growth. It means higher the agriculture growth rate, higher is the economic growth rate and vice versa. The growth rate of agriculture sector is continuously volatile since independence due to various reasons and it has affected economic growth rate of India. According to the National farmers’ commission, agricultural growth has decelerated after the mid-1990. Agriculture had grown at 3.2 percent during 1980 to 1996 and decelerated to 2.1 percent during the Ninth Plan.<sup>81</sup>

#### iv. Indian agriculture and plan outlay

Agriculture is large unorganised sector, which is mostly dependent on small and marginal land holders for development in India. These farmers’ don’t

<sup>81</sup> Government of India (2004), “*Second Report Crisis to Confidence*”, National Commission on Farmers’, Ministry of Agriculture, New Delhi, PP.01

have ability to invest for basic infrastructure of agriculture sector. Therefore, role of government is essential to develop infrastructural facilities i.e. irrigation, land development, roads and market in India. State and central government are playing major role for providing these facilities to agriculture sector through public investment. However, the investment growth rate in agriculture sector has stagnant at 1.3 percent of GNP during last three five year plans.<sup>82</sup>

**Table 3.5**  
**Plan outlay in agriculture and allied sector during planning in India**  
(Rs. in crores)

Plan	Total Plan Outlay	Agriculture & Allied Sectors	Percentage of Agri & Allied Sectors to total
First Plan (1951-56)	2378	354	14.9
Second Plan (1956-61)	4500	501	11.3
Third Plan (1961-1966)	8577	1089	12.7
Annual Plan (1966-69)	6625	1107	16.7
Fourth Plan (1969-1974)	15779	2320	14.7
Fifth Plan (1974-1979)	39426	4865	12.3
Annual Plan (1979-1980)	12177	1997	16.4
Sixth Plan (1980-85)	97500	5695	5.8
Seventh Plan (1985-1990)	180000	10525	5.9
Annual Plan (1990-91)	58369	3405	5.8
Annual Plan (1991-92)	64751	3851	6.0
Eighth Plan (1992-1997)	434100	22467	5.2
Ninth Plan (1997-2002)	859200	42462	4.9
Tenth Plan (2002-2007)	398890	20668	5.2

Source: Government of India (2002), “*Tenth Five year Plan Vol.II*”, Planning Commission, of India, PP. 520

Note: Allied sector considers Animal Husbandry, Special Area Programme, Rural Development, Forestry and Wildlife

Table 4.5 represents share of agriculture and allied activities in total plan outlay had continuously increased and it was above 10 percent till the fifth five year plan, but it has declined rapidly since sixth five year plan. It indicates

<sup>82</sup> Government of India (2004), “*Second Report Crisis to Confidence*”, National Commission on Farmers’, Ministry of Agriculture, New Delhi, PP.02

government has neglected towards development of agriculture sector and focused on another issues particularly energy and social services.

#### v. Indian agriculture and international trade

Foreign currency represents the status and progress of nation. It can be earned through international trade. India has great history of international trade from ancient period. The agriculture sector plays an important role in foreign trade during planning period. Tea, coffee, oil cake, rice, cotton, sugar, masala products, fish and fish products and meat are the major products of export produced by agriculture and allied activities in India. As well as, agriculture sector plays an important role in reducing an import of cereals and cotton.

**Table 3.6: Share of agriculture in international trade of India**

(Rs. in crores)

Year	Export		Import		Net Surplus/ Deficit
	Total	Share of Agriculture	Total	Share of Agriculture	
1960-61	642	284 (44.23)	1122	300 (26.73)	-16
1970-71	1535	487 (31.72)	1634	393 (24.05)	94 (6.1)
1980-81	6711	2057 (30.65)	12549	1066 (8.5)	991 (14.8)
1990-91	32553	6317 (19.40)	43198	643 (1.5)	5674 (17.4)
2000-01	203571	28582 (14.04)	230873	2330 (1.00)	26252 (12.9)
2010-11	1142922	111393 (9.74)	1683467	33679(2.00)	77714 (6.8)

Source: Government of India (2013), *“Economic survey of India 2012-13- Statistical Appendix”*, Directorate of Economics & Statistics, Delhi, PP. A88-A89

Note: Numbers in parenthesis shows percentage to total

- Export includes values of Coffee, Tea & Mate, Oil Cakes, Tobacco, Cashew Kernels, Spices, Sugar, Raw Cotton, Rice, Fish & Fish Preparations, Meat & Meat Preparations, Vegetable Oil, Fruits, Vegetable and Pulses.
- Import includes the values of Cereals, Cashew nuts (Unprocessed), Raw Cotton and Edible Oil.

The share of agriculture in export of India is continuously declined during planning period. A proportion of value of agricultural goods exported during 1950-51 was nearly 50 percent and manufacturers with agricultural content contribute another 20 percent means total export proportion was 70 percent.<sup>83</sup> The share of agricultural exports to total exports came down to nearly 10.5 percent

<sup>83</sup> Dutt & Sundharamn (2003), *“Indian Economy”* (48<sup>th</sup> edition), S. Chand Publication, New Delhi, PP. 481

during 2010-11.<sup>84</sup> On the other hand, share of agriculture imports has declined during planning period. It was 26.7 percent in 1960-61 and declined up to 1 percent during 2010-11. Therefore, government could save foreign currency due to declined imports of agriculture produce during planning period. It had helped to reduce balance of trade of India.

Moreover, surplus of agriculture exports over imports has been seen from success of green revolution. A surplus of agriculture exports over imports was 6.1 percent compared to total export and increased up to 17.4 percent during 1990-91. However, it declined at worst level of 6.8 percent in 2010-11 (see table 3.6). Therefore, agriculture sector has a crucial importance in international trade caused by net foreign currency earner. Recently, India import pulses and food oil as a major agricultural produces. Further, increasing export of agro processing industry has a positive impact on the international trade.

#### **vi. Indian agriculture and irrigation extension**

Irrigation is important input of agriculture sector. India has 4 percent of total available world's fresh water.<sup>85</sup> An increasing population, growing urbanization and rapid industrialization combined with need of raising agricultural production generates claim for water in India. A requirement of water for various sectors during period 2010 to 2050 will be increased from 710 billion cubic meters to 1180 bcm. This requirement is based on assumptions that irrigation efficiency will increase up to 60 percent from present level. The requirement of year 2050 is may be comparatively 40 percent less than our water resources. However, potential of water resources in India is between 1673 bcm to 1869 bcm estimated by various commissions in India.<sup>86</sup> Table 3.7 represents trends of potential created and potential utilized at cumulative basis during the planning period.

---

<sup>84</sup> Government of India (2012), *"State of Indian Agriculture 2011-12"*, Ministry of Agriculture, Department of Agricultural & Co-operation, New Delhi, PP.18

<sup>85</sup> Government of India (2013), *"Eleventh five year plan 2007-12"*, vol. III, Planning commission of India, New Delhi, PP. 43.

<sup>86</sup> Government of India (2013), *"Eleventh Five Year Plan"*, Vol. III, Planning commission of India, New Delhi, PP. 44-45

**Table 3.7**  
**Plan wise irrigation potential created and utilized in India**  
(Area in million ha)

Plan period	Potential Created (Cumulative)	Potential utilized (Cumulative)	Gap between Potential created and Utilized (in percent)
Pre-Plan period	22.6	22.6	00
First Plan (1951-56)	26.2	25.4	3.05
Second Plan (1956-61)	29.08	27.80	4.4
Third Plan (1961-66)	33.57	32.17	4.17
Annual Plans (1966-69)	37.1	35.75	3.63
Fourth plan (1969-74)	44.20	41.89	5.22
Fifth Plan (1974-78)	52.02	48.46	6.84
Annual Plans (1978-80)	56.61	52.64	7.01
Sixth Plan (1980-85)	65.22	58.82	9.81
Seventh Plan (1985-90)	76.44	68.59	10.26
Annual Plans (1990-92)	81.09	72.85	10.16
Eighth Plan (1992-97)	86.26	77.21	10.5
Ninth Plan (1997-2002)	93.95	81.00	13.78
Tenth Plan (2002-2007)	102.77	87.23	15.12
Eleventh Plan (2007-12)	113.24	89.94	20.57

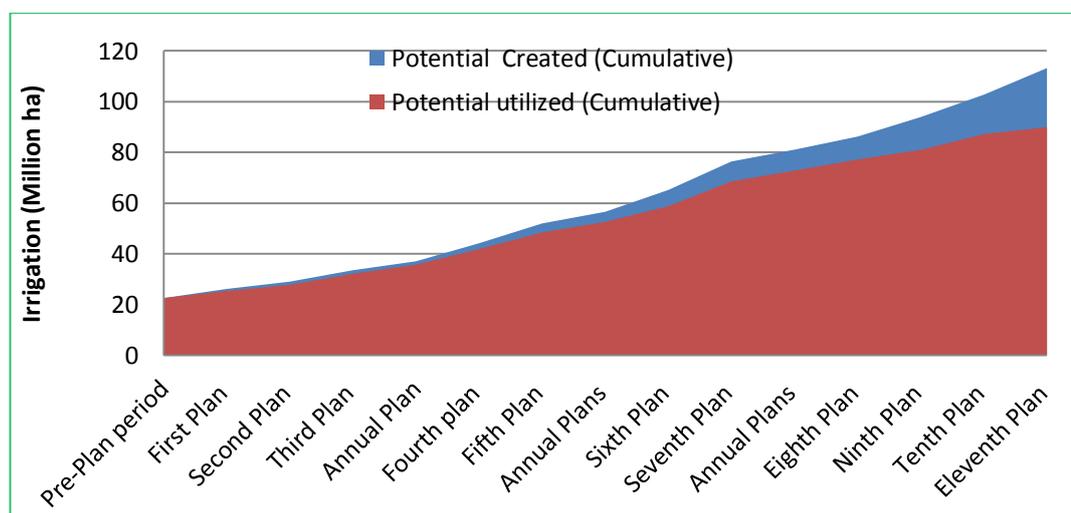
Source: Government of India (2013), *“Twelfth Five Year Plan Vol. I”*, Planning Commission, New Delhi, PP. 183

Note: percentage is calculated.

An irrigation potential created had 22.6 million hectares at the time of independence and touched to 113.2 million hectare in eleventh plan. However, utilization of irrigation has not been proper. A gap between potential created and potential utilized has increased during planning period. This gap had only 3.05 percent in first plan and increased up to 20.6 percent in eleventh plan period (figure 3.2). Similarly, level of irrigation in various states of India does not found same because of availability water, preference of government given for some specific state and effective efforts taken by state government in India. The states Punjab (98 percent), Haryana (85 percent), Uttar Pradesh (76 percent), Bihar (61 percent), Tamilnadu (58 percent) and West Bengal (56 percent) contribute highest level of irrigation. On the contrary, states Chhattisgarh (27 percent), Himachal

Pradesh (20 percent), Maharashtra (19 percent), Kerala (10 percent), Assam (4 percent) had lowest irrigated area during same period.<sup>87</sup> However, India currently has a total irrigation potential of 140 MH, out of which only 113.24 MH has been created till end of 11th five year plan.

**Figure 3.2: Plan wise irrigation potential created and utilized in India**



Source: Source: Government of India (2013), “*Twelfth Five Year Plan Vol. I*”, Planning Commission, New Delhi, PP. 183, taken from table 3.7.

### vii. Indian agriculture and cropping pattern

Cropping pattern of agricultural sector indicates place of agriculture in human life and economy of nation. A change in cropping pattern implies a change in proportion of area under different crops. At the beginning of 20<sup>th</sup> century more than 83 percent of land was put under food crops and about 17 percent under non food crops. By 1950-51, area under food crops had 74 percent and non-food crops 26 percent in India<sup>88</sup>

Table 3.8 reveals that the gross cropped area has increased from 152.77 million hectare to 192 million hectare over the period of 1961 to 2011. It shows 25 percent increase in the gross cropped area. Although, area under food grains crops has increased from 115.6 to 126.7 million hectare during the same period. It means that area under food grains crops increased merely 9 percent. In other

<sup>87</sup> Government of India (2012), “State of Indian Agriculture 2011-12”, Ministry of Agriculture, New Delhi, PP. 14

<sup>88</sup> Dutt R. & Sundharam K. (2003), “*Indian Economy*”, 48<sup>th</sup> Edition, S. Chand & Company Ltd. New Delhi, PP. 488

words, area under non-food grain crops increased rapidly than food grain crops during planning period.

**Table 3.8: Area under major crops in India**

(Million hectares)

Commodity	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11
<b>GCA</b>	152.77	165.79	172.63	185.74	185.34	192.2*
<b>Food grains</b>	115.6 (75.6)	124.3 (75.0)	126.7 (73.4)	127.8 (68.8)	121.0 (65.3)	126.7 (65.9)
<b>Cereals</b>	92.0	101.8	104.2	103.2	100.7	100.3
<b>Rice</b>	34.1	37.6	40.1	42.7	44.7	42.9
<b>Wheat</b>	12.9	18.2	22.3	24.2	25.7	29.9
<b>Jowar</b>	18.4	17.4	15.8	14.8	9.9	7.4
<b>Maize</b>	4.4	5.8	6.0	5.9	6.6	8.6
<b>Gram</b>	9.3	7.8	6.6	7.5	7.5	9.2
<b>Tur</b>	2.4	2.7	2.8	3.6	3.6	4.4
<b>Pulses</b>	23.6 (20.4)	22.6 (18.2)	22.5 (17.8)	24.7 (19.3)	20.3 (16.8)	26.4 (20.8)
<b>All oilseeds</b>	13.8	16.6	17.6	24.1	22.8	27.2
<b>Cotton</b>	7.6	7.6	7.8	7.4	8.6	11.2
<b>Sugarcane</b>	2.4	2.6	2.7	3.7	4.3	4.9

Source: 1. Government of India (2002), *“Economic Survey of India 2000-01”*, Ministry of Finance, New Delhi, PP. Table 1.13.

2. Government of India (2013), *“Economic Survey of India 2012-13: Statistical Appendix”*, Ministry of Finance, New Delhi, PP. A18.

Note: 1. Figures in Parenthesis about food grains are percentage to the Gross cropped area.

2. Figures in Parenthesis about Pulses are percentage to the gross cropped area under food grains crops.

However, area under wheat and rice has increased substantially during the same period. An area under wheat crop has increased from 12.9 million hectare to 29.9 million hectare, which represents 130 percent expansion of area under wheat crop between the periods of 1960-61 to 2010-11. Similarly, area under rice crop has increased by 26 percent, maize (100 percent), arhar (100 percent), sugarcane (100 percent) and cotton (47 percent) during 1960-61 to 2010-11 period. On the contrary, area under jowar crop has declined substantially from 18.4 million hectare to 7.4 million hectare, indicating 150 percent reduction of area under jowar during same period (see table 3.8).

### viii. Indian agriculture and food grains production

The production of food grains and main cash crops has increased notably during planning period in India. A production trend of various crop during plan period has depicted in table 3.9. Over the period of 50 years from 1961 to 2011 food grains production raised 3 times, wheat 7.9 times, rice 2.75 times, oilseeds 4.6 times and cotton 6 times although, area under foodgrain crops increased by little.

**Table 3.9: Production of major crops in India (Million tonne)**

Commodity	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11
Food grains	82	108.4	129.6	176.4	196.8	244.5
Cereals	69.3	96.6	119.0	162.1	185.7	226.3
Coarse Cereals	17.2	23.6	22.7	27.6	26.3	39.1
Pulses	12.7	11.8	10.6	14.3	11.0	18.2
Gram	6.3	5.2	4.3	5.4	3.9	8.2
Tur	2.1	1.9	2.0	2.4	2.2	2.9
Total Pulses	21.1	18.9	16.9	22.1	17.1	29.3
Rice	34.6	42.2	53.6	74.3	85.0	96.0
Wheat	11.0	23.8	36.3	55.1	69.7	86.9
Oilseeds	7.0	9.6	9.4	18.6	18.4	32.5
Groundnut	4.8	6.1	5.0	7.5	6.4	8.3
Sugarcane	110	126.4	154.2	241.0	296.0	343.4
Cotton (Bales)	5.6	4.8	7.0	9.8	9.5	33.0

Source: 1. Government of India (2002), *“Economic Survey of India, 2000-01”*, Ministry of Finance, New Delhi, PP. Appendix Table 1.12

2. Government of India (2013), *“Economic Survey of India 2012-13: Statistical Appendix”*, Ministry of Finance, New Delhi, PP. Appendix Table A-17

Therefore, India has not only achieved food sufficiency but also having surplus production of foodgrain, sugarcane, cotton and many agriculture produces. Moreover, share of coarse cereals in cereals has come down from 25 percent to 17 percent during same period. However, growth rate of crop output decelerated from

peak of 3.37 percent per annum during 1980-83 to 1990-93 to 1.74 percent during 1990-93 to 2003-06.<sup>89</sup>

#### ix. Indian agriculture and per hectare yield

An improvement in per hectare yield of various crops is the key element of increasing agriculture production. An extension of area under crops was major source of increasing agriculture production in India before green revolution. However, since introduction of HYVP has been resulted in raising the yield level of major crops, particularly wheat and rice. During the period 1962-63 to 2003-06, contribution of yield growth accounted 85.2 percent in growth of output, while area growth was only 14.4 percent.<sup>90</sup> Table 3.10 represents trends of per hectare yield during planning period.

**Table 3.10**  
**Per hectare yield (kg) of major crops during 1970-71 to 2010-11 overall India**

Crop	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11
Food grain	522	710	872	1023	1380	1626	1930
Cereals	408	528	949	1142	1571	1844	2256
Wheat	663	851	1307	1630	2281	2708	2989
Rice	688	1013	1123	1336	1740	1901	2239
Pulses	441	539	524	473	578	544	691
Maize	547	926	1279	1159	1518	1822	2540
Oilseeds	481	507	579	532	771	810	1135
Cotton	88	125	106	152	225	190	491
Sugarcane	3300	4600	4800	5800	6500	6900	7000

Source: Government of India (2013), *“Agriculture statistics at a Glance 2012”*, Directorate of Economics & Statistics, Ministry of Agriculture, PP. 59-129

Note: An oilseed includes rapeseed & mustard, sesamum, linseed, castor seed, nigerseed, safflower, sunflower and soybean. (Nine Oilseeds)

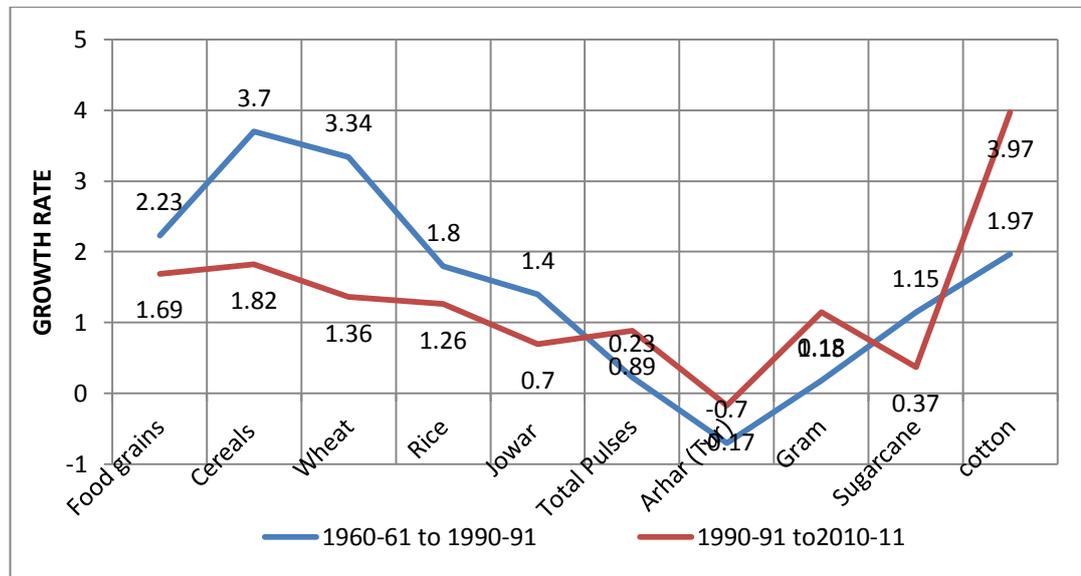
Figure 3.3 depicted CAGR of per hectare yield of different crops during 1960-61 to 1990-91 and 1990-91-2010-11 all over India. The CAGR of per hectare yield of food grains, cereals and pulses had 2.23 percent, 3.7 percent and

<sup>89</sup>Bhalla G. & Singh G. (2009), *“Economic Liberalization and Indian agriculture: a State wise analysis”*, Economic & Political Weekly, Vol. XLIV (52), Dec 26, PP. 36

<sup>90</sup>G.S. Bhalla & Gurumil Singh (2009), *“economic liberalization and Indian agriculture: a State wise analysis”*, Economic & Political Weekly, Vol. XLIV (52), Dec 26, 2009, PP. 36, 37

0.23 percent respectively during 1960-61 to 1990-91 in India. However, per hectare yield growth of food grains (1.69 percent) and cereals (1.82 percent) has declined and increased of pulses (0.89 percent) during 1990-91 to 2010-11 in India.

**Figure 3.3: CAGR of per hectare yield of major crops in India**



Government of India (2013), "Agriculture statistics at a Glance 2012", Directorate of Economics & Statistics, Ministry of Agriculture, PP. 59-129

Note: CAGR is calculated from table 3.10

Moreover, growth rate of per hectare yield of cotton has considerably increased during post globalisation because of adaptation new biotech seeds. CAGR of per hectare yield of cotton crop has increased from 1.97 percent during 1960-61 to 1990-91 to 3.97 percent during 1990-91 to 2010-11 in India. To sum up, per hectare yield of all major crops has significantly increased in India. However, per hectare yield of major crops has been found comparatively low than developed nation in India. Therefore, India has an opportunity to become global leader of food supplier in the world through increasing per hectare yield.

### 3.4 Conclusion

Despite of continuous declining share of agriculture sector in GDP, agriculture is the dominant and largest sector in India in terms of employment generation, source of livelihood and providing raw material to industry and food to common people. It is indeed, agriculture sector had a rich history during Sindu civilisation and farming was the most prestigious business. However, the prestige

of agriculture sector had declined with the entry of Aryans and agriculture sector could not achieve this position again during last more than 4000 years of period. There are many causes of declining prestige of agriculture sector. Continuous wars between the kings and loss of cultivated crops, heavy tax burden of kings and village and cottage industries destroyed by British and unequal distribution of land.

After independence government have focused on agriculture development through land reforms programme, irrigation extension, high yield variety programme and many more policy decisions. The positive signs of all policy decisions has seen in the development of infrastructural facilities particularly irrigation, production and productivity of all major crops and food sufficiency. However, government has introduced economic reforms policy in India, which focuses mainly on industrial and service sector development. Consequently, the share of agriculture and allied sector in total plan outlay has declined since 1980's and had continuously below 6 percent.

Consequently, the growth rate of agriculture sector has declined up to 2.5 percent during ninth and tenth plan period and observing capacity of labour power has been declined. Similarly, the per hectare yield CAGR of all major crops also declined during new economic reforms period compared to pre reforms period. Finally, the per capita income of agriculture sector has come down continuously and gap between urban and rural per capita income widened in India. To Sum up, government policy has a negative trend towards agriculture sector and its adverse impact have been seen directly and indirectly on the farmers' community in India.