CHAPTER I

INTRODUCTION

1.1 Introduction

The role played by agriculture in a developing country like India and its contribution towards capital formation, employment, etc., is well known. Its linkages with industries in supplying wage goods, providing raw materials and creating demand for the industrial products. In a country like India where most of the industries depend on agriculture, the growth in agricultural output with less fluctuations in agricultural production have both, direct and indirect effect on economic growth. The direct effect will be on agricultural output growth and consequently on the overall growth. The indirect effect is the influence through the industrial output growth.\(^1\)

Agricultural production includes two components viz., food and non-food articles. Of all the food articles, foodgrains constitutes the most significant part of agricultural production of any country. Importance of foodgrains in the world economy is being recognized and there is an urgent need to raise production in view of the large gap between demand and supply of foodgrains. The role of agricultural development in overall economic development and in eliminating poverty is also equally important. As a matter of fact, sustained and accelerated development of Indian agriculture is the key to acceleration in economic development and poverty reduction, furthermore a large number of industries like textiles, silk, sugar, rice, flourmills and milk products get raw material from agriculture. Its strong forward and backward linkages within the rural sector and with the other sector of the economy provide added stimulus for growth and income generation significant progress in promoting economic growth, reduction in poverty and enhancing food security cannot be achieved without developing more fully the potential human and productive capacity of the agricultural sector and enhancing its contribution to

overall economic development. A strong food and agricultural system thus, constitutes an important factor in the strategy of overall economic growth and development. Any change in agriculture sector has a spillover effect on the entire India economy².

1.2 History of Agriculture in India

In India variety of crops are grown throughout the length and breadth of the country in different agro-climatic conditions. Indian agriculture began by 9000 Before Christian Era (BCE) as a result of early cultivation of plants, and domestication of crops and animals. Settled life soon followed with implements and techniques being developed for agriculture. Double monsoons led to two harvests being reaped in one year. Indian products soon reached the world via existing trading networks and foreign crops were introduced to India. Plants and animals-considered essential to their survival by the Indians-came to be worshiped and venerated.

The middle ages saw irrigation channels reach a new level of sophistication in India and Indian crops affecting the economies of other regions of the world under Islamic patronage. Land and water management systems were developed with an aim of providing uniform growth. Despite some stagnation during the later modern era the independent Republic of India was able to develop a comprehensive program.

Wheat, barley and jujube were domesticated in the Indian subcontinent by 9000 BCE; Domestication of sheep and goat soon followed. This period also saw the first domestication of the elephant. Barley and wheat cultivation-along with the domestication of cattle, primarily sheep and goat-was visible in Mehrgarh by 8000-6000 BCE. Agro pastoralism in India included threshing, planting crops in rows-either of two or of six-and storing grain in granaries. By the 5th millennium BCE agricultural communities became widespread in Kashmir. Cotton was cultivated by the 5th millennium BCE-4th millennium BCE. The Indus cotton industry was well developed and some methods used in cotton spinning and fabrication continued to be practiced till the modern Industrialization of India.

---

A variety of tropical fruit such as mango and muskmelon are native to the Indian subcontinent. The Indians also domesticated hemp, which they used for a number of applications including making narcotics, fiber, and oil. The farmers of the Indus Valley grew peas, sesame, and dates.

Wild Oryza rice appeared in the Belan and Ganges valley regions of northern India as early as 4530 BCE and 5440 BCE respectively. Rice was cultivated in the Indus Valley Civilization. Agricultural activity during the second millennium BC included rice cultivation in the Kashmir and Harappa regions. Mixed farming was the basis of the Indus valley economy.

Several wild cereals, including rice, grew in the Vindhyan Hills, and rice cultivation, at sites such as Chopani-Mando and Mahagana, may have been underway as early as 7000 Before Present (BP). The relative isolation of this area and the early development of rice farming imply that it was developed indigenously. Chopani-Mando and Mahagana are located on the upper reaches of the Ganges drainage system and it is likely that migrants from this area spread rice farming down the Ganges valley into the fertile plains of Bengal, and beyond into south-east Asia.

Irrigation was developed in the Indus Valley Civilization by around 4500 BCE. The size and prosperity of the Indus civilization grew as a result of this innovation, which eventually led to more planned settlements making use of drainage and sewers. Sophisticated irrigation and water storage systems were developed by the Indus Valley Civilization, including artificial reservoirs at Girnar dated to 3000 BCE, and an early canal irrigation system from circa 2600 BCE. Archeological evidence of an animal-drawn plough dates back to 2500 BC in the Indus Valley Civilization.

Jute was first cultivated in India, where it was used to make ropes and cordage. Some animals - thought by the Indians as being vital to their survival - came to be worshipped. Trees were also domesticated, worshiped, and venerated - Pipal and Banyan in particular. Others came to be known for their medicinal uses and found mention in the holistic medical system Ayurveda.
In India, both wheat and barley are held to be Rabi (winter) crops and-like other parts of the world-would have largely depended on winter monsoons before the irrigation became widespread. The growth of the Kharif crops would have probably suffered as a result of excessive moisture.

The Mauryan Empire (322-185 BCE) categorized soils and made meteorological observations for agricultural use. Other Mauryan facilitation included construction and maintenance of dams, and provision of horse-drawn chariots-quicker than traditional bullock carts.

Spice trade involving spices native to India-including cinnamon and black pepper-gained momentum as India starts shipping spices to the Mediterranean. Roman trade with India followed as detailed by the archaeological record and the Periplus of the Erythraean Sea. Chinese sericulture attracted Indian sailors during the early centuries of the Common Era.

The Tamil people cultivated a wide range of crops such as rice, sugarcane, millets, black pepper, various grams, coconuts, beans, cotton, plantain, tamarind and sandalwood. Jackfruit, coconut, palm, areca and plantain trees were also known. Systematic ploughing, manuring, weeding, irrigation and crop protection was practiced for sustained agriculture. Water storage systems-some of the earliest in the world-were designed during this period. Kallanai (1st-2nd Century CE), a dam built on river Kaveri during this period, is considered the oldest water-regulation structure in the world still in use.

Crystallized sugar was discovered by the time of the Imperial Guptas (320-550 CE), and the earliest reference of candied sugar come from India. The process was soon transmitted to China with travelling Buddhist monks. Chinese documents confirm at least two missions to India, initiated in 647 CE, for obtaining technology for sugar-refining. Each mission returned with results on refining sugar. Indian spice exports find mention in the works of Ibn Khurdadhbeh (850), al-Ghafiqi (1150), Ishak bin Imaran (907) and (Al Kalkashandi) (fourteenth century).

Noboru Karashima’s research of the agrarian society in South India during the Chola Empire (875-1279) reveals that during the Chola rule land was transferred and collective holding of land by a group of people slowly gave way to individual plots of
land, each with their own irrigation system. The growth of individual disposition of farming property may have led to a decrease in areas of dry cultivation. The Cholas also had bureaucrats which oversaw the distribution of water—particularly the distribution of water by tank-and-channel networks to the drier areas.

The construction of water works and aspects of water technology in India is described in Arabic and Persian works. The diffusion of India and Persian irrigation technologies gave rise to an advanced irrigation system which bought about economic growth and growth of material culture. Agricultural ‘zones’ were broadly divided into those producing rice, wheat or millets. Rice Production continued to dominated Gujarat and wheat dominated north and central India.

Land management was particularly strong during the regime of Akbar the Great (reign: 1556-1605), under whom scholar-bureaucrat Todarmal formulated and implemented elaborated methods for agricultural management on a rational basis. Indian crops—such as cotton, sugar, and citric fruits—spread visibly throughout North Africa, Islamic Spain, and the Middle East. Though they may have been in cultivation prior to the solidification of Islam in India, their production was further improved as a result of this recent wave, which led to far-reaching economic outcomes for the regions involved.

1.3 Agriculture in India in the Colonial British Era

Few Indian commercial crops made it to the global market under the British Raj. In India, cotton, indigo, opium, and rice were known in particular. The second half of the 19th century saw some increase in land under cultivation, and agricultural production expanded at an average rate of about 1 per cent per year by the later 19th century. Due to extensive irrigation by canal networks Punjab, Narmada valley, and Andhra Pradesh became centers of agrarian reforms.

Agricultural performance in the interwar period (1918-1939) was dismal. From 1891 to 1946, the annual growth rate of all crop output was 0.4 per cent, and foodgrain output was practically stagnant. There were significant regional and intercrop differences, however, nonfood crops doing better than food crops. Among food crops, by far the most important source of stagnation was rice. Bengal had below-average growth rates in both food and nonfood crop output, whereas Punjab and Madras were the least stagnant
regions. In the interwar period, population growth accelerated while food output decelerated, leading to declining availability of food per head. The crisis was most acute in Bengal, where food output declined at an annual rate of about 0.7 per cent from 1921 to 1946, when population grew at an annual rate of about 1 per cent.

The British regime in India did supply the irrigation works but rarely on the scale required. Community effort and private investment soared as market for irrigation developed. Agricultural prices of some commodities rose to about three times between 1870-1920\(^3\).

In the year 1880 ‘Famine Commission’ made its estimates of food production and consumption because of a short decline in the availability of food. The situation worsened because of stagnation in production and increasing population. From 1891-1921 there was a net increase of over 12 million population. There was some increase in agricultural production also in the first two decades of the century caused by extension of canal irrigation in Punjab and Sind and improvement in irrigation and agricultural practices. After 1921 the population began to increase fast and at the same time, the momentum of agricultural growth exhausted in the north-west region.

The foodgrain supply situation during the World War II was explosive. The food availability was short because of the low level of production, low imports of two million tonnes and low purchasing power. The Foodgrain Policy Committee (1943) came to the conclusion that the country was then in short supply in respect of foodgrains by at least ten million tonnes.

It was also observed before the Independence that there exists a wide spread hunger and under nourishment among the large mass of the country’s population. In 1933 it was reported by Sir John Megaws that about 40 per cent of India’s population did not get enough food to eat even in a normal and good weather year. Similar reports during this period were presented by various Expert Committee and Commissions ranging between 30 to 40 per cent population suffering from chronic food deficit in the country.

\(^3\) Manish Dubey (2011), Problems of Agricultural Growth in India, Cyber Tech Publications New Delhi, (First edition 2011), pp. 1-6
The Bengal Famine of 1943 must be regarded as a landmark in the long history of food shortage and famines in the country. From 1910-1940, there were 18 scarcities but no major famine involving loss of life due to starvation. The famine is best described as a ‘tragedy in unpreparedness’. The situation can be compared with the present day scarcity of Kalahandi in Orissa that the people were hurdling together and waiting for the death.

The history of India’s food problem and agricultural development of independent India begins with the famine of 1943, which encouraged to more food production. It also marked the beginning of the policy of food control, including control over food prices and distribution of foodgrain, more particularly to the vulnerable sections of the community. Though India attained freedom four years later, the famine of 1943 provides the most suitable starting point for a study of the country’s food problem and agricultural development since Independence. A “Grow More Food Campaign” was initiated by the government in wake of that famine.

The Grow More Food (GMF) campaign launched in 1942 marked the beginning of a sustained national endeavour at increasing agricultural production and improving agriculture. Its main objectives was to achieve immediate increase in food production through extension of area under cultivation, including diversion of acreage from cash crops like cotton, extension of irrigation and use of inputs like improved seeds, manures and fertilizers. From 1943, in the wake of increasing scarcities and the Bengal famine, the Government of India began assuming wider responsibilities in regard to food production, a field which for over two decades was the primary concern of provincial governments. It began to direct the GMF campaign and also sought to bring about greater involvement of provincial governments in the drive, by offering them special assistance. The Foodgrains Policy Committee and the Famine Enquiry Commission, appointed during this period, not only endorsed the campaign, but also gave suggestions for improving agriculture (NCA, 1976)\(^4\)

In contrast to the policy towards production of food crops, the British had actively encouraged the growth of commercial crops. Cultivation of jute, cotton, tea and coffee

got encouragement. The price advantage that commercial crops came to enjoy over food crops because of foreign demand also helped in the growth of cultivation of these crops. India was, consequently, relatively better placed in regard to the development of commercial crops than in respect of foodgrains during this period.\(^5\)

Agriculture in India till Independence was traditional with a very slow growth rate having little application of science and technology. In a study on “Growth and Instability in Indian Agriculture”, Sen (1967)\(^6\) observed that “during the first 24 years of the century foodgrains production increased at an average annual (linear) rate of 0.3 per cent. The next 24 years, however, presented a completely different picture. During this period, foodgrains production showed a declining trend of 0.02 per cent per annum (linear) on the average, in spite of the fact that droughts turned out to be relatively moderate and less frequent”. The National Commission on Agriculture (1976) in their study on progress of agricultural development also observed that during the period 1931-47, production and productivity of both foodgrains and non foodgrains exhibited mostly a declining trend.

During the period 1931-47, besides irrigation, improved seeds and agricultural education, were the other technological factors which had started making some impact on the agricultural economy of the country. In spite of increased imports fertilizer use remained limited to plantations and commercial crops which alone could fetch remunerative prices. Other factors like types of crops grown and manner of farming remained traditional. Agricultural implements used were largely conventional and whatever new types of iron ploughs were publicized was not widely accepted by the farmers. Apart from being expensive and strenuous to bullocks, these were unsuitable for small fragmented holdings and less effective in uprooting weeds and, at the same time, were prone to expose and dry out comparatively more of the under-soil moisture. Moreover, there was lack of repairing facilities.

The improved seed technology was mainly confined to cash crops though the Imperial Institute of Agricultural Research had initiated work of Multiplication and

---


dissemination of improved Varieties right from its establishment. Research was conducted with the object of introducing new crops, improving indigenous types and producing new and better varieties with regard to rice, wheat, gram sugarcane, cotton, jute, tobacco and oilseed. Though it is now difficult to evaluate the impact of improved seeds on yield rates of individual crops, during the period substantial progress was achieved in bringing additional areas under improved varieties of commercial crops.

A major development in the immediate pre-Independence period was the first ever elaboration in January 1946, of an all India policy in agriculture known as ‘Statement of Agriculture and Food Policy in India’. The ten objectives of the policy included: increase in production of foodgrains and protective foods; improvement in methods of agricultural production and marketing; stimulating production of raw materials for industry and exports, securing remunerative price for the producer and fair wages to the agricultural labour; ensuring fair distribution of the food produced and promoting nutritional research and education (NCA, 1976).7

1.4 State of Agriculture in India – Since 1947

After Independence the main goal was ‘to move the country away from the menace of famine to a new vigour and prosperity’. According to the statement ‘the all India policy is to promote the welfare of the people and to secure a progressive improvement of their standard of living’. This includes the responsibility of providing enough food for all, sufficient in quality and of requisite quantity for the achievement of these objectives. High priority will be given to measure the increase in food resources of the country to the fullest extent and in particular measures designed to increase the output per hectare and to diminish dependence on the vagaries of nature but till now we have been able to control the vagaries of nature in twenty per cent of the cultivated area of the country.

The agricultural development strategy followed since independence particularly since the mid-sixties, has paid rich dividends. In terms of growth, the performance has been quite impressive in the post-independence period as compared to the pre-independence period. In the last six decades, the Government’s objectives in agricultural policy and the

instruments used to realize the objectives have changed from time to time, depending on both internal and external factors. Agricultural policies at the sectoral level can be further divided into supply side and demand side policies. Such policies also have macro effects in terms of their impact on government budgets. Macro level policies include policies to strengthen agricultural and non-agricultural sector linkages and industrial policies that affect input supplies to agriculture and the supply of agricultural materials.

1.5 Indian Agriculture under Early Planning Periods

The quantum of plan outlay, its financing and the targets set for the agricultural sector were all decided through the planning process at the state and central levels. Agriculture under plans was received on top priority treating it as development in the broader perspective of planned growth of the economy as a whole. The basic thing in Indian context was that without the healthy and vigorous agricultural sector the rest of the economy could not grow, therefore, agriculture was given the highest priority.

The first three Five-Year Plans concentrated on growth, with some institutional changes. The intermediaries in agriculture, like Zamindars and Jagirdars, were abolished within a few years after independence and the actual tillers, accounting for about 40 per cent of the cultivated area became the owners. This provided a major incentive to the growth of agriculture in large parts of the country.

The overall progress is considered most laudable. Till 1960, foodgrain production increased to 75 million tonnes over 50 million tonnes just after the Independence but fluctuations in production remained the major threat of food security. Third Plan noted that progress in the agricultural field during the Second Plan period had been inadequate not only in terms of increase in production and achievements of production targets but also in implementation of various planned programmes, consequently the plan document declared ‘a much larger task in agriculture remains to be accomplished during the Third Plan’. Development of irrigation, soil and conservation programmes, supply of fertilizers, improved seeds and credit and extension services were on top priority. But only the supply of fertilizers and area covered by new variety of seeds were encouraging while irrigation rate was far below the desired goal. The actual achievement in terms of agricultural output was far below the target. The reasons were well known such as:
(i) the conflict with China in 1962, (ii) the Indo-Pakistan conflict in 1965, and (iii) the disastrous draught of 1965-66. At the end of the Third Plan the agricultural and food situation in the country presented a gloomier picture than the one at the end of Second Plan.

1.6 Green Revolution

With the beginning of Green Revolution during the mid-1960s, there was a dramatic change in the Indian agriculture situation. The revolution caused a qualitative change in the food and agricultural situation. The green revolution has transformed agriculture from subsistence to production – intensive farming. The Pearson report described the change as ‘one of the authentic marvels of our time’.

During the pre-green revolution period, from independence to 1964-1965, the agricultural sector grew at annual average of 2.7 per cent. This period saw a major policy thrust towards land reform and the development of irrigation. With the green revolution period from the mid-1960s to 1991, the agricultural sector grew at 3.2 per cent during 1965-1966 to 1975-1976, and at 3.1 per cent during 1976-1977 to 1991-1992. So the policy package for this period was substantial and consisted of:

(a) introduction of high-yielding varieties of wheat and rice by strengthening agricultural research and extension services,

(b) measures to increase the supply of agricultural inputs such as chemical fertilizers and pesticides,

(c) expansion of major and minor irrigation facilities,

(d) announcement of minimum support prices for major crops, government procurement of cereals for building buffer stocks and to meet public distribution needs, and

(e) the provision of agricultural credit on a priority basis. This period also witnessed a number of market intervention measures by the central and state Governments.

In the mid-sixties, a new technology in the form of high-yielding varieties (HYVs) was introduced for cereals. Apart from the new technology, public investment in agriculture particularly in irrigation, was stepped up significantly. The public sector played an important role in promoting agricultural research and education. Large
investments were made for the development of research system under the aegis of the Indian Council of Agricultural Research and the State Agricultural Universities. Simultaneously, a well designed extension network was created for disseminating new technologies to the cultivations. The administered price policy has provided incentives to the farmers. In short, successive Five-year Plans have aimed at improving the infrastructure through irrigation, stepping up the use of fertilizers and improved varieties of seeds and effecting institutional changes, supply of credit through the banking system, ensuring remunerative prices for agricultural commodities, etc. There has been a significant increase in the use of modern inputs.

In the Fourth Plan growth with social justice policy was adopted to help the vulnerable sections of backward areas. Besides attainment of self-sufficiency in foodgrains, the plan envisaged building-up of a sizeable buffer stock of foodgrains and stoppage of concessional imports of foodgrains.

The Fifth Plan, while adhering to the basic policies of the Fourth Plan, made some modifications in the programmes for agriculture with a view of increasing their efficiency. It was proposed to cover more food crops under HYV. New programme was to cover not only irrigated agriculture but also dry farming areas on a large scale. A new programme was chalked out particularly for oil seeds and pulses which were in serious short supply. Draught prone areas to be tackled in a systematic way during the plan period. Subsequently in Sixth to Eighth Plan the objectives of planning remained more or less the same except of the emphasis on ‘growth with social justice’.

1.7 The New Economic Policy of 1991

India, which is one of the largest agricultural-based economies, remained closed until the early 1990s. By 1991, 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 the exchange rate, trade and foreign investment policies, and internal 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 Organization (WTO) in 1995 was a clear sign of India’s intention to take advantage of globalization and face the challenge of accelerating its economic growth.

In 1991, when India officially went along the structural adjustment path and introduced a series of neo-liberal economic reforms, there was apparently not much explicitly by way of reforms in agriculture. But very soon, at least by mid 1990s when the World Trade Organization (WTO) was in place, there did unfold many policy reforms directly addressed to agriculture. Table 1.1 lists some of the important policy changes and measures of reform relating to Indian agriculture.

Table 1.1: Important Measures of Economic Liberalization in Indian Agriculture

<table>
<thead>
<tr>
<th>Area of Liberalization</th>
<th>Policy Changes and Measures of Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. External Trade Sector</td>
<td>a. In tune with the WTO regime, since 1997 all Indian product lines placed in GSP.</td>
</tr>
<tr>
<td></td>
<td>c. Average tariffs on agricultural imports reduced from 100 per cent in 1990 to 30 per cent in 1997.</td>
</tr>
<tr>
<td></td>
<td>d. Though India is in principle against Minimum Common Access, but actually already importing 2 per cent of its food requirements.</td>
</tr>
<tr>
<td>2. Internal Market Liberalization</td>
<td>a. Since 1991, 100 per cant foreign equity allowed in seed industry.</td>
</tr>
<tr>
<td>(i) Seeds</td>
<td>b. More liberalized imports of seeds.</td>
</tr>
<tr>
<td>(iii) Power</td>
<td>a. Since 1997, power sector reforms were introduced at the behest of the World Bank in states such as Andhra Pradesh and power charges increased.</td>
</tr>
<tr>
<td></td>
<td>b. Power sector opened to the private sector.</td>
</tr>
<tr>
<td>Area of Liberalization</td>
<td>Policy Changes and Measures of Implementation</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>(iv) Irrigation</td>
<td>a. Water rates increased in some states.</td>
</tr>
<tr>
<td></td>
<td>b. Participatory water management was sought to be introduced through water users’ associations (WUAs)</td>
</tr>
<tr>
<td></td>
<td>c. States such as Andhra Pradesh made new large irrigation projects conditional on ‘stake holders’ contribution to part of investment.</td>
</tr>
<tr>
<td>(v) Institutional Credit</td>
<td>a. Khursro Committee and Narasimham Committee (1992) undermining the importance of targeted priority sector lending by commercial banks</td>
</tr>
<tr>
<td></td>
<td>b. The objectives of regional rural banks’ (RRBs) priority to lending to weaker sections in rural areas diluted since 1997.</td>
</tr>
<tr>
<td></td>
<td>b. Relaxation of restrictions on the inter-state movement of farm produce.</td>
</tr>
<tr>
<td></td>
<td>d. Encouragement of contract farming.</td>
</tr>
<tr>
<td></td>
<td>e. Agricultural commodity forward markets.</td>
</tr>
</tbody>
</table>

3. Fiscal Reforms

a. Fiscal reforms with an emphasis on tax reduction and public expenditure turned to reducing fiscal deficit as priority (grave implications for public investment in agriculture and rural infrastructure)

1.8 Trends in Food Grains Production in India

Foodgrains form an important ingredient of the vegetarian diet. They constitute the staple food and they are also a rich source of energy, minerals and contain vitamins. Increasing the food grain production is the major objectives of any initiation in the agricultural sector. In India, during post-independence period efforts have been made to increase foodgrains production to cope up with the population growth. Since, there was limited scope of increasing production by expanding cultivated area, agricultural research was mainly focused on development of high yielding varieties. Large numbers of programmes were started with the objectives to win freedom from foreign bread and
achieving self-sufficiency in food production. The pressure for achieving increased food grain production comes for the burgeoning population growth in India. India’s foodgrains production during the last six decades is presented in the table below.

**Table 1.2: Trends in the Foodgrains Production in India**

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (Million Hectares)</th>
<th>Production (million tonnes)</th>
<th>Yield (Kg./Hectare)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-51</td>
<td>97.32</td>
<td>50.82</td>
<td>522</td>
</tr>
<tr>
<td>1960-61</td>
<td>115.58 (15.82)</td>
<td>82.02 (38.04)</td>
<td>710 (26.48)</td>
</tr>
<tr>
<td>1970-71</td>
<td>124.32 (7.03)</td>
<td>108.42 (24.35)</td>
<td>872 (18.58)</td>
</tr>
<tr>
<td>1980-81</td>
<td>126.67 (1.86)</td>
<td>129.59 (16.34)</td>
<td>1023 (14.76)</td>
</tr>
<tr>
<td>1990-91</td>
<td>127.84 (0.92)</td>
<td>176.39 (26.53)</td>
<td>1380 (25.87)</td>
</tr>
<tr>
<td>2000-01</td>
<td>121.05 (-5.61)</td>
<td>196.81 (10.38)</td>
<td>1626 (15.13)</td>
</tr>
<tr>
<td>2010-11</td>
<td>126.67 (4.44)</td>
<td>244.78 (19.59)</td>
<td>1930 (15.75)</td>
</tr>
</tbody>
</table>

Note: Figures in the parentheses indicate percentage change over the previous year.


**Figure 1.1: Trends in the Area and Production of Foodgrains in India**
From the Table 1.2 and Figure 1.1, it can be inferred that the foodgrain production in India has gone up from just 50.82 million tonnes in 1950-51 to 244.78 million tonnes in 2010-11. Area under cultivation and productivity are the key factors determining total food production of a country. Over the last six decades, the area under foodgrains has gone up from 97.32 million hectares in 1950-51 to 126.67 million hectares in 2010-11 and yield has tripled. Green revolution is mainly responsible for the quantum jump in the production of wheat and rice and total food grain production. But the problem can be understood if the percentage change over the previous year is considered. It is clear that the last two decades witnessed dismal performance in terms of percentage change in area, production and yield of foodgrains. No doubt an impressive development took place in the extension foodgrains but fluctuation in production is still a serious problem to be tackled causing food insecurity among the small farmers and disadvantageous rural classes.

Attainment of self sufficiency in food grains at the national level is one of the country’s major achievements in the post-independence period. After remaining a food deficit country for about two decades after independence, India became largely self-sufficient in food grain production at the macro level. There have hardly been any food grain imports after the mid-1970s. However, in the post economic reform period, the food grains production did not exhibit favourable growth. The growth rate of production was much lower than that of population in the latter period. In other words, significant increase in foodgrains has not been able to keep pace with the increase in population. The total per capita net availability of food grains also has significantly declined in the post reform period.

Disparities in productivity across regions and crops, and between rain-fed and irrigated areas have increased. Long term factors like steeper decline in per capita land availability and shrinking of farm size are also responsible for the agrarian crisis. Land issues such as SEZs, land going to non-agriculture, alienation of tribal land etc. are becoming important.

Foodgrains are grown in many states in our country providing employment to a large number of people and contributing to the growth of the vital rural economy. The major foodgrains growing states in India are Uttar Pradesh, Punjab, Andhra Pradesh,
Rajasthan, Haryana, Maharashtra, Madhya Pradesh, West Bengal, Karnataka, Tamil Nadu, Bihar, Gujarat, Orissa and Chhattisgarh, which together accounted for more than 90 per cent of area and production of foodgrains. Among these states, the growing of the foodgrains has assumed greater significance in Tamil Nadu. Therefore, an analysis of growth and instability in foodgrains production in Tamil Nadu is of great importance for a comprehensive understanding of the food security at the state level. In this context the present study assumes growth and instability of foodgrains production in Tamil Nadu. This study also exhibits the inter-district analysis of the foodgrain production in Tamil Nadu.

1.9 Outline of the Study

This study is organized with six chapters. The first chapter provides the introduction of the study. In the second chapter the profile of Tamil Nadu is given. The third chapter overlooks at the literature on growth and instability of foodgrain production and some other related past studies. The fourth chapter presents the objectives of the study and methodology used in the study. The data responses along with statistical analysis of findings and the empirical results of the regression models have been discussed in the fifth chapter, while the last chapter draws conclusion based on these results.