



Sustainable Indian Agriculture and Regional Variations in Agricultural Growth

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Abstract

Rural economy is the base of Indian economy and the agriculture is the pillar of rural economy. Indian agriculture was traditional and backward in nature at the time of independence. Cropping pattern of Indian agriculture mostly related with its self-sufficiency policy, so in Indian agriculture production Food grain production occupies most dominant position, which covers Over 65 percent Gross Cropped Area. But recent decade cropping pattern shift towards commercial crops. Agriculture is a way of life for a vast majority of our people. Agriculture sector not only fulfill the need of food and nutritional requirements of 1.21 billion Indians but also contributes significantly to production, employment and demand generation. Hence agricultural sector play crucial role in alleviating poverty and in ensuring the sustainable development of the economy. Volatility in growth rate was much higher in the agriculture and allied sector than other economic activity due to monsoon, the predominance of small and marginal holdings etc. As a natural consequence of economic growth and structural changes in the economy has declined the share of agriculture and allied sectors in the total GDP from around 19.1 percent in 2004-05 to 13.9 percent in 2013-14 (at 2004-05 constant prices). Regional Variations is also seen in Agricultural Growth. The growth of the agriculture and allied sector at the state level differs from that at the national level.

Keywords: Agriculture sector, Regional Variations, Growth Rate, Sustainable Development

India is agrarian country. Most of the people of India lived in rural areas and depend on agriculture and allied sector. Agriculture sector not only fulfill the need of food requirements of 1.21 billion Indians but also contributes significantly to production, employment and demand generation. Hence agricultural sector play crucial role in alleviating poverty and in ensuring the sustainable development of the economy. This sector has made large pace in achieving the agricultural development goals of food security, food availability and accessibility but this sector is still facing challenged by an acute agrarian crisis. This situation has led to reset the developmental approach in the agriculture sector and need for focusing on the welfare and prosperity of farmers has obtained primarily so it is priority to making the agriculture and allied sector not only ecologically sustainable in manner to use of natural resources of soil, water and forests, but also socio-economically sustainable to farmers in terms of prosperity, welfare and social security. Agricultural development can generate employment for rural population and empower them with higher income and make balanced development a reality

There are many challenges to sustaining agricultural growth like marginal size of holdings, high pressures in natural resource, climate change, rising input cost, post harvesting losses and many more. These challenges are need to emerge for sustaining agricultural growth. The agrarian are suffering complex interaction of these factors in recent years. In the past, many of these factors like lack of sufficient non-farm and off-farm employment, low productivity in the agricultural sector. the government have formulated policies and programs against this backdrop, to increasing farmers' welfare through improved employment opportunities, better farm practices, improving soil health, increasing investment, creating rural infrastructure, ensuring timely delivery of credit and technology, encouraging market reform and reducing risk in agriculture through the introduction of a new crop insurance



scheme. The Indian government has also provided more pliability and freedom to states in formulating and implementing schemes and programs best suited to meet their specific needs. The Government also realized the need of the future of agriculture to the shifting focus beyond farming and towards development of food systems, i.e., full agri-value chains. This process requires the design a large number of near-farm jobs in post-harvest management, food processing, logistics and modern retail by procuring directly from farmers' groups. Development of these efficient value chains will not only help move people from farm jobs to near-farm jobs but also entitle the farmers to obtain better prices for their produce and enhance their income and profit.

Methodology and Objectives of Study:

The present study is entirely based on secondary data and data were obtained from the various reports of Reserve Bank of India (RBI), Central Statistical Organization (CSO), and National Bank for Agriculture and Rural Development (NABARD), Various Economic Surveys and Internet. This paper widely covers growth rate of Indian agriculture and regional variations in agricultural growth. The main objectives of this paper are –

- To evaluate the trends and pattern of growth of the agricultural sector.
- To focus on sector –wise analysis of GDP growth rate.
- To evaluate the regional variations in agricultural growth.

Growth of the Agricultural Sector

Production of food grains has been increasing every year in India. India is among the top producers of several crops such as wheat, rice, pulses, sugarcane and cotton. It is the highest producer of milk and second highest producer of fruits and vegetables. In 2013, India contributed 25 percent to the world's pulses production, the highest for any one country, 22 percent to the rice production and 13 percent to the wheat production. It also accounted for about 25 percent of the total quantity of cotton produced, besides being the second highest exporter of cotton for the past several years. India has its varied agro-climatic conditions so it has competitive advantage in agricultural production. As per WTO's Trade Statistics, India is among the 15 leading exporters of agricultural products in the world. Share of India in agricultural export and import in the world were 2.69 per cent and 1.31 per cent respectively in 2013. The country has transpired as a significant exporter of some agricultural items like cotton, rice, meat, oil meals, pepper and sugar. India has developed export competitiveness in certain agriculture products like basmati rice, guar gum and castor oil. Term of Trade for farmers and the agricultural sector improved rapidly between 2004-05 and 2010-11, after which they remained stable until 2013-14. The minimum support price and in global agricultural prices is the main reasons for the significant increases in Term of Trade for farmers between 2004-05 and 2010-11. Inflation in food articles was also high during this period as compared to the rise in prices of non-food articles. The agriculture sector employs nearly half of the workforce in India, and it contributes to 13.9 percent of the GDP in 2013-14 in compare to 50 percent of GDP in 1950. Share of agriculture sector in overall GDP is decline continuously as country leads to development.

Table- 1

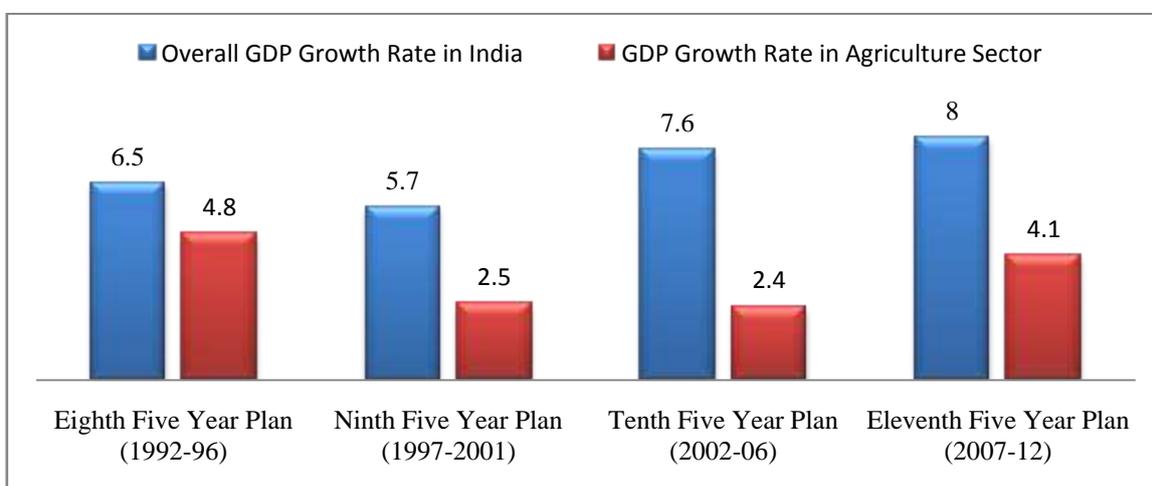
GDP Growth Rate in Different Five Years Plans

Five Year Plan	GDP Growth Rate	
	Overall India	Agriculture Sector
Eighth Five Year Plan (1992-96)	6.50	4.8
Ninth Five Year Plan (1997-2001)	5.70	2.5
Tenth Five Year Plan (2002-06)	7.60	2.4
Eleventh Five Year Plan (2007-12)	8.00	4.10

Source: Central Statistics Office

Figure - 1

GDP Growth Rate in Different Five Years Plans



Source: Compile from Table -1

In Indian agriculture, growth in agricultural GDP has shown high unstable since the beginning of economic reforms in 1991. As shown in table -1 and figure -1, it has fluctuated from 4.8 percent per annum in the Eighth Five Year Plan (1992-96) to a low of 2.50 percent in Ninth Five Year Plan and 2.4 percent during the Tenth Five Year Plan (2002-06) before rising to 4.1 percent in the Eleventh Five Year Plan (2007-12).

Sector –wise Analysis of GDP Growth Rate

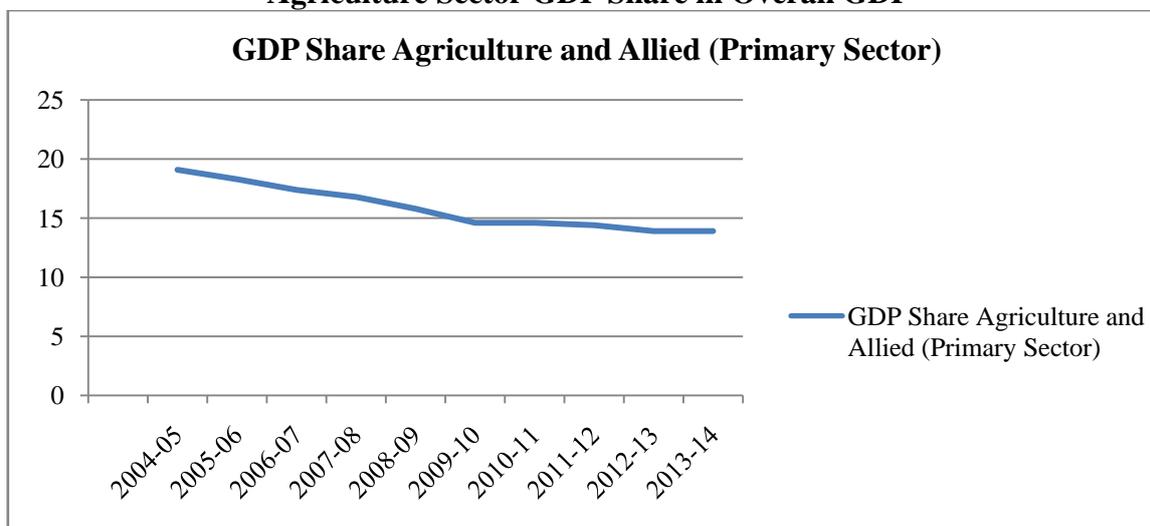
Sector –wise analysis of GDP growth rate shows decline share of agriculture sector in overall GDP. Share of Agriculture and Allied (Primary Sector) sector about 19.1 percent in 2004-05, it decline 18.3 percent in 2005-06, and 17.4 in 2006-07. Trend of GDP share of agriculture and allied sector are similar for years ahead as shown in figure-2. In year 2012-13 and 2013-14 the share of agriculture and allied in overall GDP is about 13.9 as shown in table -2 and figure-3.

Table -2
Sector –wise GDP Share in Overall GDP

Year	GDP Share		
	Agriculture and Allied (Primary Sector)	Industry (Secondary Sector)	Service (Tertiary Sector)
2004-05	19.1	27.9	53.0
2005-06	18.3	28.0	53.7
2006-07	17.4	28.7	54.0
2007-08	16.8	28.7	54.4
2008-09	15.8	28.1	56.1
2009-10	14.6	28.3	57.1
2010-11	14.6	27.9	57.5
2011-12	14.4	28.2	57.4
2012-13	13.9	27.3	58.8
2013-14	13.9	26.1	59.9

Source: Central Statistics Office

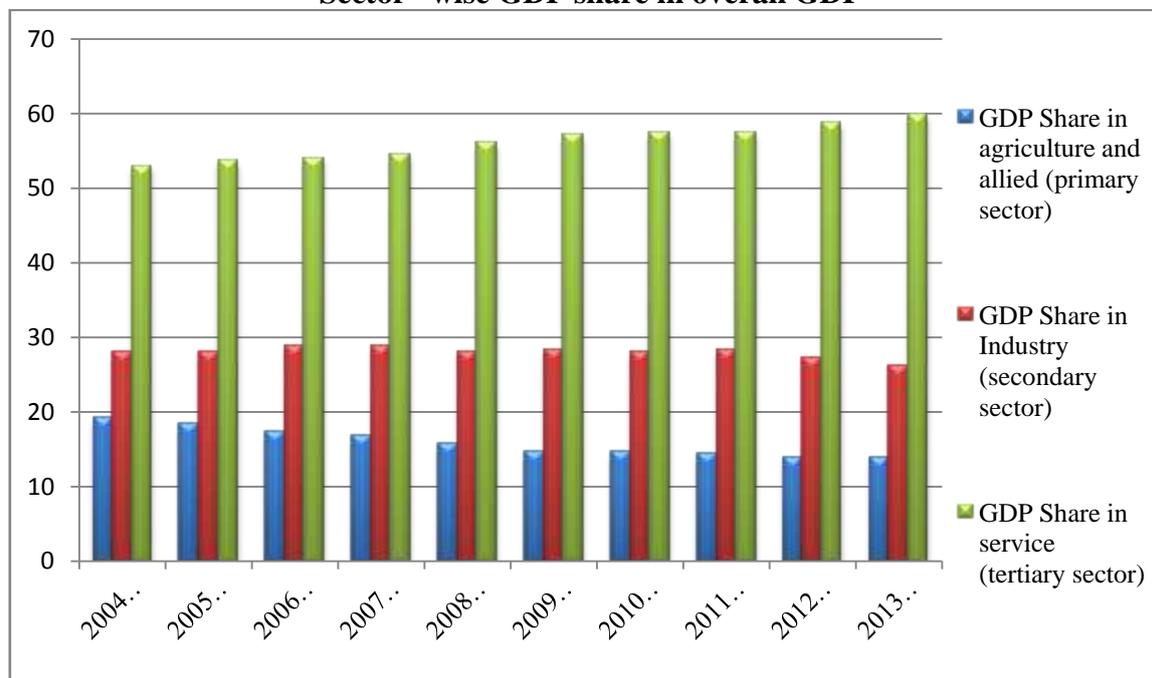
Figure -2
Agriculture Sector GDP Share in Overall GDP



Source: Compile from Table -2

To assess the performance of the different sector of economy- Agricultural and Allied Sector (Primary Sector), Industry Sector (Secondary Sector) and Service Sector (Tertiary Sector) compare their GDP growth rate of different year of decade. GDP share of agriculture and allied sector is decline continuously in different years of decade. GDP share of industry sector has shown growth till 2007-08, decline since 2010-11 and further increased in 2011-12 and again decreased 2012-13 and 2013-14. GDP share of service sector is showing increasing trend in GDP share in overall economy which indicates continuously growth and development of country.

Figure -3
Sector –wise GDP share in overall GDP



Source: Compile from Table -2

To assess the performance of the agricultural sector more efficiently during the period 2004- 2014, it is divided into two periods —the first period being between 2004-05 and 2007-08 and the second period being between 2008-09 to 2013-14. The annual average growth rate of the agriculture sector was 5 percent between 2004-05 and 2007-08, but fell to 3 percent between 2008-09 and 2013-14. During the same periods, the overall economy grew at an annual average of 9 percent and 7 percent, respectively. Volatility was much higher in the agriculture and allied sector than other economic activity. Between 2005- 06 and 2013-14, the coefficient of variation was 0.69 for agricultural GDP but only 0.27 in the case of overall GDP growth. Monsoon is one major factor to which this high volatility may be attributed. The predominance of small and marginal holdings also makes agriculture high instability and worrisome for policy makers, as small and marginal farmers are highly vulnerable to adverse climatic conditions As a natural consequence of economic growth and structural changes in the economy, the share of agriculture and allied sectors in the total GDP declined from around 19.1 percent in 2004-05 to 13.9 percent in 2013-14 (at 2004-05 constant prices), but still Agriculture sector continues to play a vital role through its multiplier impact on the economy.

Regional Variations in Agricultural Growth

The picture of share and growth of the agriculture and allied sector at the state level presents a very different from that at the national level. While the agriculture and allied sectors contributed about 13.9 percent to the GDP in 2013- 14 (at constant 2004-05 prices) at the national level, but most of states showed a much higher share of agriculture in GSDP, shows their more dependency on agriculture. As shown in Table-3 about 13 states earn more over 20 percent of their GSDP from agriculture and 9 states earn 15 to 19 percent of their GSDP from agriculture, and only 7 states earn less than 15 percent of their GSDP from agriculture sector in 2013-14.



Table -3
The share of the agriculture and allied sector in GSDP

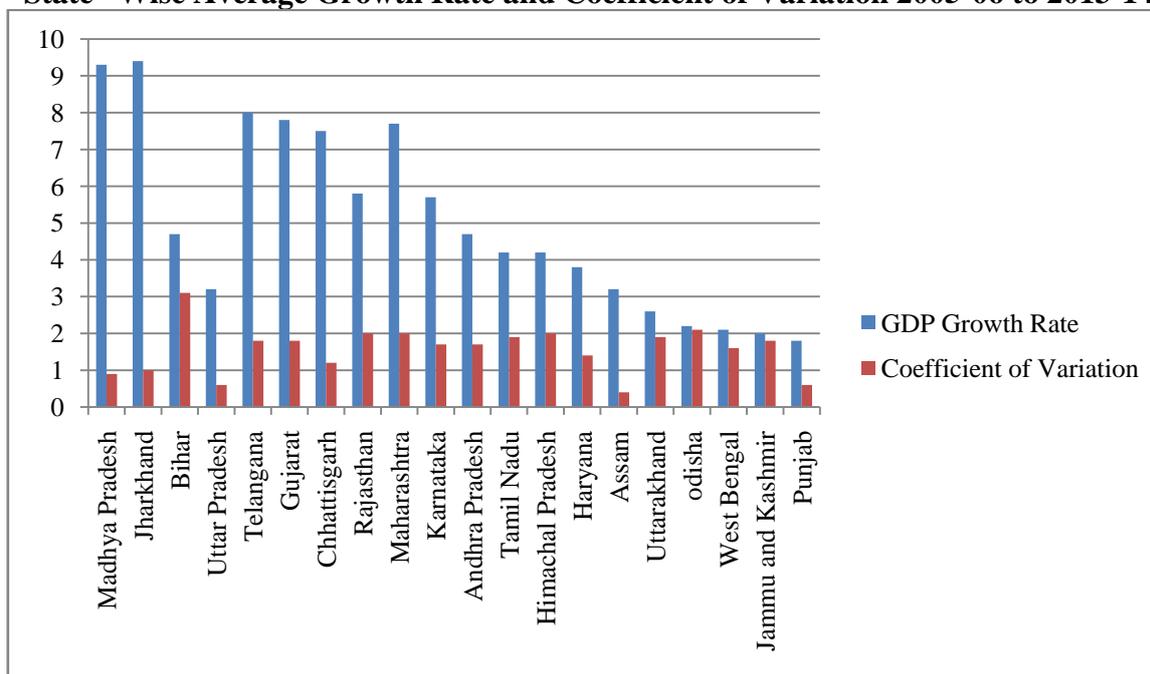
The share of the agriculture and allied sector in GSDP	States
30% and above	Arunachal Pradesh
20-29 %	Madhya Pradesh, Manipur, Andhra Pradesh, Assam, Nagaland, Punjab, Bihar, Chhattisgarh, Rajasthan, Tripura, Uttar Pradesh, Jammu and Kashmir
15-19%	Jharkhand, Meghalaya, Haryana, Karnataka, Himachal Pradesh, Telangana, West Bengal, Mizoram, Odisha.
Less than 15%	Tamil Nadu, Gujarat, Goa, Kerala, Maharashtra, Uttrakhand, Sikkim.

Source: Central Statistics Office

The agriculture and allied sector had a contribution of just 22 percent to the gross state domestic product (GSDP) of Uttar Pradesh in 2013-14, Though with a share of about 13 percent, Uttar Pradesh emerged as the biggest contributor to India's agriculture and allied sector, UP has obtained 15th position amid top 20 states in India. The growth of the agriculture and allied sector at the state level differs from that at the national level. For example, at the national level, the GDP from the agriculture and allied sectors grew at the rate of 4.7 percent in 2013-14 (at constant 2004-05 prices), but the states of Gujarat, Madhya Pradesh and Himachal Pradesh registered double-digit growth rate during the same period and almost 50 per cent of the states were estimated to more than 5 percent growth in the agriculture and allied sectors during 2013-14. Odisha, Madhya Pradesh, Bihar and Chhattisgarh as the major drivers of agricultural growth and these states are showing growth momentum, while observed in the earlier green revolutionary states like Punjab and Haryana is continued focus on conventional crops, in which there is little yield growth. One factor which appears to have contributed to the high growth rate in the agricultural sector at the state level is the increase in the distributions of funds to states and related interventions by the Indian Government, which provided financial autonomy and flexibility to state governments in Plan formulation, as per their requirements.

Figure -4

State –Wise Average Growth Rate and Coefficient of Variation 2005-06 to 2013-14



Source: Central Statistics Office

Inter-state and inter-regional variation in agricultural growth rate has also been observed. For example, Madhya Pradesh, with the highest average agricultural growth rate of 9.3 percent between 2005-06 and 2013-14, has a relatively low coefficient of variation of 0.9 percent, whereas Bihar achieved an average growth rate of 4.7 percent during the same period, but with a high coefficient of variation of 3.1 percent. Coefficient of variation is of 2.0 percent for Gujarat and Maharashtra. Average agricultural growth rates are about 3.2 percent of Uttar Pradesh, 8.0 percent in Telangana, and 2.0 percent Jammu and Kashmir in agriculture and allied sector during the decadal period of 2004-05 and 2013-14. It is noteworthy that, as compared to the all-India coefficient of variation of agricultural GDP of 0.65 percent between 2005-06 and 2013-14, the variation at the state level in Bihar was much higher than all other states. Therefore, agricultural growth has been more volatile at the state level compared to national level. The agricultural growth rate has very wide variations among states, partially in terms of the base effect and partially in terms of such factors as climatic variations, differences in the capital formation level, access to institutions, availability and pressure on natural resources, policy interventions, and investment policy.

Conclusion

Rural economy is the base of Indian economy and the agriculture is the pillar of rural economy. Indian agriculture was traditional and backward in nature at the time of independence. Cropping pattern of Indian agriculture mostly related with its self-sufficiency policy, so in Indian agriculture production food grain production occupies most dominant position, which covers over 65 percent gross cropped area. But recent decade cropping pattern shifted towards commercial crops. For a vast majority of our people agriculture is a way of life. To enhance agricultural productivity while maintaining and improving the environment and living conditions of our villages are the key to sustainable development. Accelerated agricultural growth based on increasing land and labour productivity is



fundamental tool of poverty reduction. Increasing productivity plays a catalytic role in stimulating growth outside the agriculture sector, where the economic growth is faster. No other sector of economy can match growth in agriculture for its impact on broad-based poverty reduction.

The path of Indian agriculture development and its associated environmental problems has brought about recognition that future agricultural growth and productivity will have to occur simultaneously with environmental sustainability. The environmental challenges, especially in terms of land degradation and groundwater depletion, water logging and excessive use of chemical inputs are posing problems for the future of Indian agriculture. To address the problems, policies have laid emphasis on promoting sustainable agriculture including organic farming, dry land farming, changing cropping pattern and crop diversity. Differential approaches and policy instruments, however, will be required to address these problems. The shift from input-intensive to sustainable, particularly organic farming is a difficult task as it involves a number of policy measures dealing with a variety of issues ranging from the transfer of information and technology to the development of markets. Another difficult task, and perhaps more difficult, relates to marginal and small farmers – which comprise a substantial part of Indian agriculture. The agriculture and allied sector growth at the state level and national level different. There is not only difference in agricultural growth rate in state and national level, but also inter-state and inter-regional variation in agricultural growth rate also observed. A critical examination of also inter-state and inter-regional variation in agricultural growth of agriculture approaches is necessary for sustainable agricultural development.

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