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Growth of Indian Agriculture: Performance and Challenges

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ABSTRACT

In India, agriculture has experienced major systemic shifts in the context of a fall in GDP share from 30% in 1990-91 to 12.4% in 2010-11 and further to 11.8% in 2012-13. This suggests a change from conventional agrarian to service dominated. Despite this, India remains a largely agrarian economy, and agriculture is demographically the nation's largest economic field, with 58% of India's population relying on the sector for their livelihoods. Nevertheless, generating additional food with limited land and having household-level economic access to food to ensure food security will remain a major challenge for the country. With 60% of total food grains and oilseeds being grown in the Kharif season and just 35% of total arable area being irrigated, Indian agriculture is still heavily reliant on rainfall.

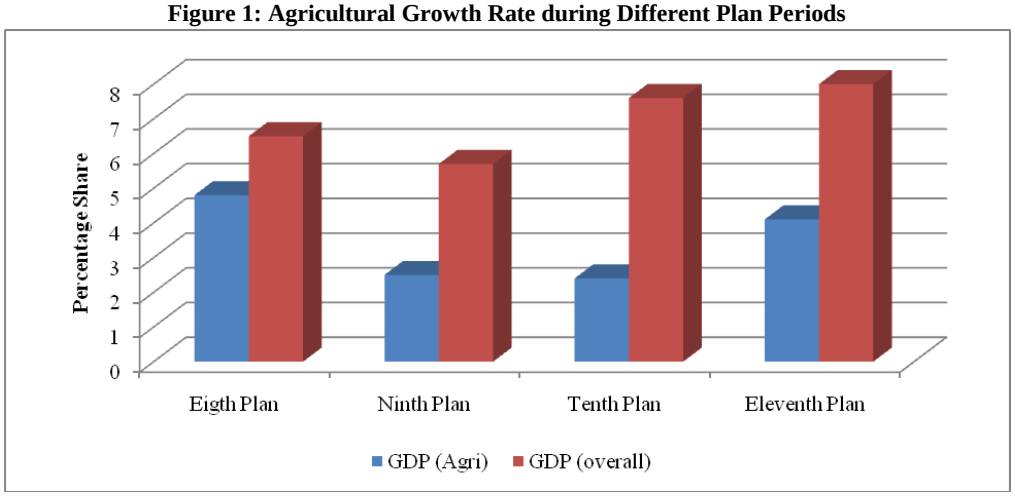
India's agricultural front has taken remarkable strides over the past three decades. Most credit for this performance should go to the many million small-scale farming families who make up the bedrock of Indian agriculture and Indian economy. Policy funding, production policies, public expenditure in infrastructure, crop science and expansion, livestock and fisheries have positively led to growing farm growth, food production and availability. Nevertheless, generating additional food with limited land and having household-level economic access to food to ensure food security will remain a major challenge for the country.

Agriculture and the allied sector remains pivotal to Indian economy's sustainable growth and progress. Not only does it fulfill 1,3 billion Indians' food and nutritional needs, it contributes significantly to development, jobs, and demand creation across numerous backward and forward linkages. Moreover, the agricultural sector's position in alleviating poverty and ensuring economic sustainable growth is well known. However, the industry actually poses a challenge. While it has made tremendous strides in achieving food stability, affordability and accessibility targets for agricultural growth, a formidable agrarian crisis still threatens it. Recently, this condition has contributed to fresh thought on the agricultural production strategy. Focusing on farmers' health and development has achieved popularity.

Growth of the Agricultural Sector

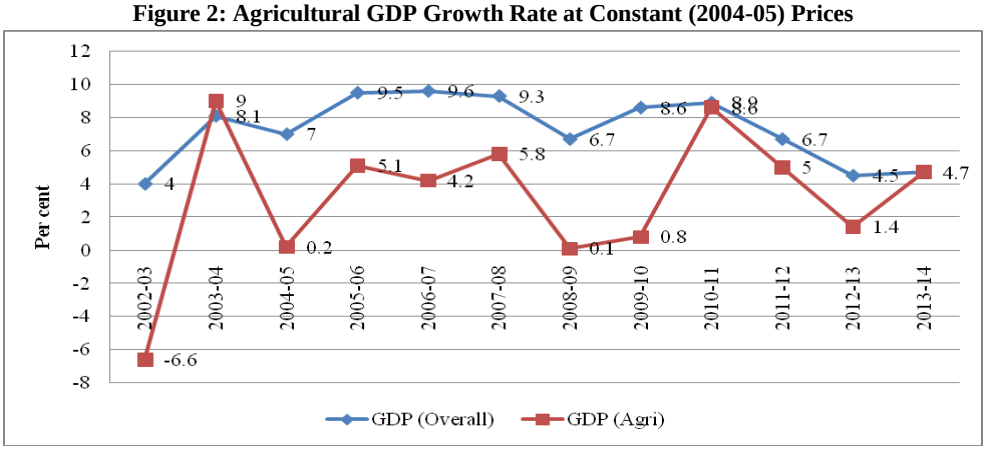
After economic reforms started in 1991, agricultural GDP growth has seen strong volatility. It fluctuated from 4.8% per annum in the Eighth Five Year Plan (1992-96) to a low of 2.4% in the Tenth Plan (2002-06) before increasing to 4.1% in the Eleventh Plan (2007-12), as seen in Figure 1.To evaluate the output of the agricultural sector over the last decade, the duration from 2004-05 is split into two, the first between 2004-05 and 2007-08 and the second between 2008-09 and 2013-14. (Figure 2). Agriculture's average annual growth rate was 5% between 2004-05 and 2007-08, but dropped to 3% between 2008-09 and 2013-14. The economy developed at an annual rate of 9% and 7% respectively during the same years.

Figure 1: Agricultural Growth Rate during Different Plan Periods



Source: CSO

Figure 2: Agricultural GDP Growth Rate at Constant (2004-05) Prices



Source: CSO

Economic volatility is natural, but it was far higher in agriculture and the allied field. One significant factor attributable to this extreme uncertainty is continuing reliance on the moonsoon's vagaries. The preponderance of small and marginal assets renders this elevated uncertainty much more worrisome for policy-makers, since small and marginal farmers are extremely susceptible to adverse weather.

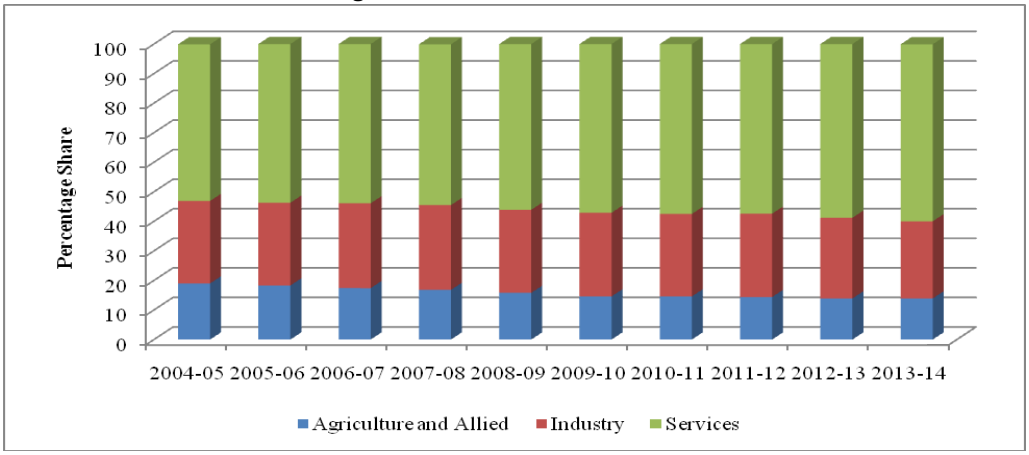
Over the past two decades, agricultural GDP growth has fluctuated considerably, with a peak of 9.9% in 1996-97 and a low of -6.6% in 2002-03, based on annual rainfall. The growing difference between agricultural and ally-sector development patterns and the overall economy leads to persistent agricultural underperformance. The key problem for India's agriculture sector is the substantial production uncertainty due to reliance on seasonal rainfall trends, which are influenced by global climate change.

Role of Agriculture in the Indian Economy

The share of agriculture and allied sectors in total GDP declined from about 19% in 2004-05 to 13.9% in 2013-14, measured at constant prices in 2004-05. If forestry and fisheries shares are excluded, farming (including livestock) accounted for around 12% of national GDP. Although it still accounts for around 54.6% of total jobs (Census 2011), the actual number of farmers has fallen unparalleled from 127.3 million (Census 2001) to 118.7 million (Census 2011). This suggests a change from farm to non-farm jobs, allowing real farm incomes to increase more than 7 percent annually in recent years. Indian agriculture's durability is evident in that this sector last reported negative growth in 2002-03, posting a remarkable average growth rate of 4.1 percent during the Eleventh Five Year Plan (2007-08 to 2011-12) (Economic Survey, 2013-14).

With about 50% of the population still relying on agriculture for their subsistence, the sector continues to play a vital role through its economic effect multiplier. It is estimated that GDP growth from agriculture is around four times more successful for the poorest citizens than GDP growth from outside the sector – rendering the agricultural sector crucial for overall growth, poverty reduction, and food security in any country.

Figure 3: Sector-wise Share in GDP

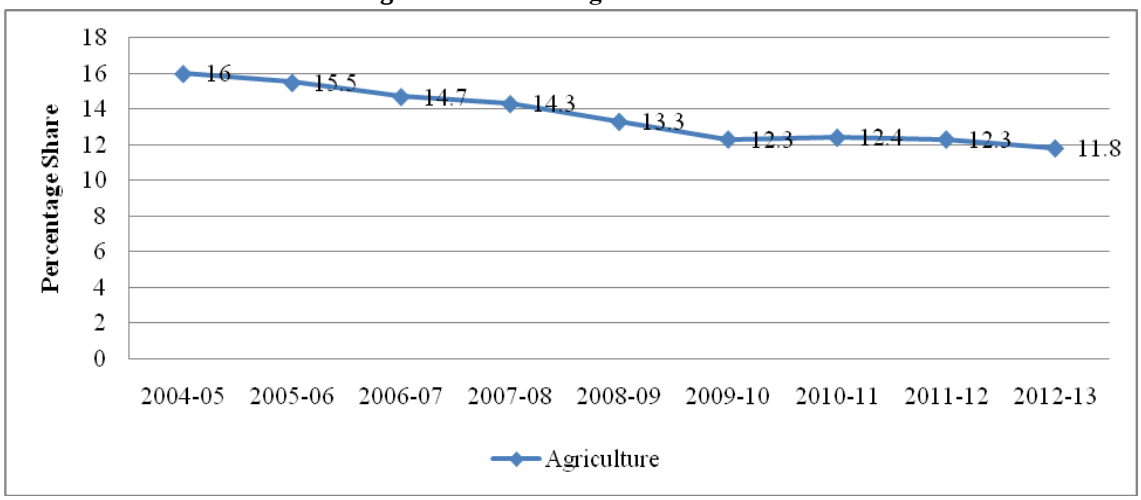


Source: CSO

In India, agriculture has experienced major systemic shifts in the context of a fall in GDP share from 30% in 1990-91 to 12.4% in 2010-11 and further to 11.8% in 2012-13. This suggests a change from conventional agrarian to service dominated. Despite this, India remains a largely agrarian economy, and agriculture is demographically the nation's

largest economic field, with 58% of India's population relying on the sector for their livelihoods.\

Figure 4: Share of Agriculture in India's GDP

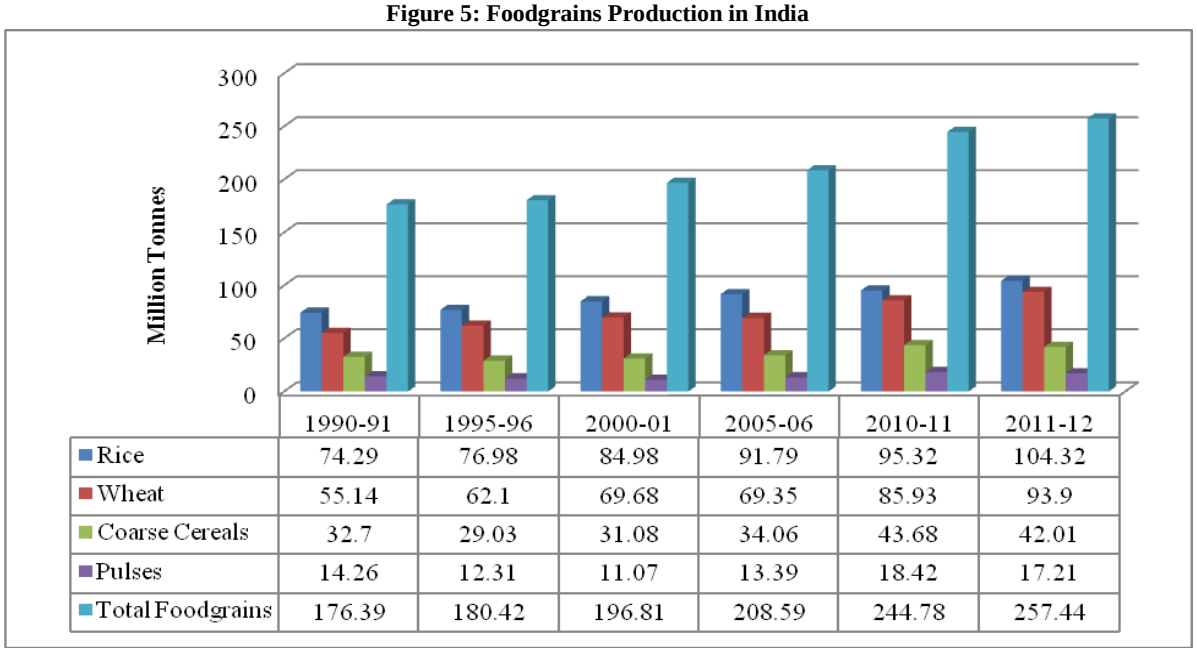


Source: CSO

Production and Productivity

Between 1990-91 and 2011-12, India's total food grain production increased by over 45%. During this time, rice output improved from 74.29 MT to 104.32 MT with growth of 40.42%; wheat production performed significantly better, increasing from 55.14 MT to 93.9 MT with growth of 70%; while coarse cereals increased from 32.7 MT to 43.68 MT in 2010-11 and declined further to 42.01 MT in 2011-12 and pulses increased from 14.26 MT to 18.42 MT in 2010-11.

Figure 5: Foodgrains Production in India



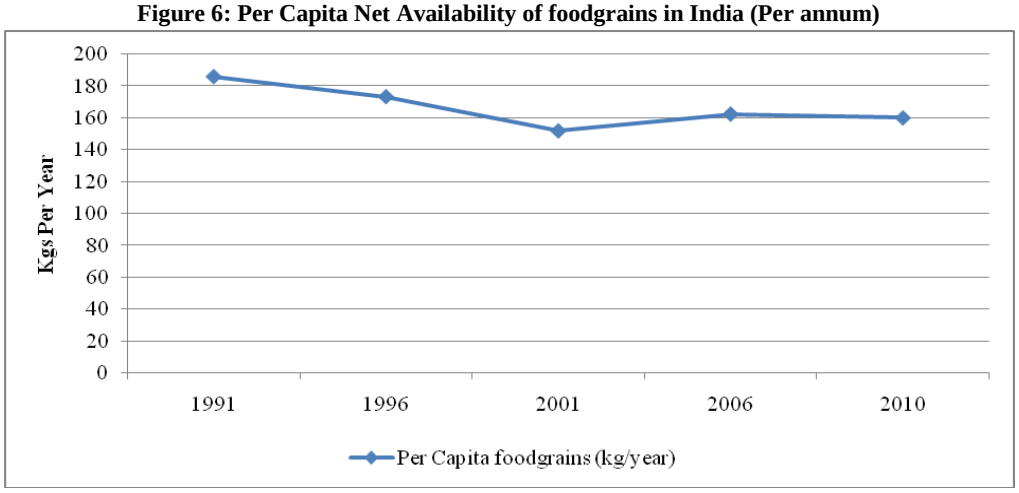
	1990-91	1995-96	2000-01	2005-06	2010-11	2011-12
Rice	74.29	76.98	84.98	91.79	95.32	104.32
Wheat	55.14	62.1	69.68	69.35	85.93	93.9
Coarse Cereals	32.7	29.03	31.08	34.06	43.68	42.01
Pulses	14.26	12.31	11.07	13.39	18.42	17.21
Total Foodgrains	176.39	180.42	196.81	208.59	244.78	257.44

Source: CSO

Per Capita Net Availability of Food grains in India

Benefiting from green revolution advances introduced in 1965-66, India's annual net food grain production per capita grew from 144.1 kg per capita per year in 1951 to 186.2 kg per capita in 1991. However, in the post-1990s, the supply of food grain per capita decreased dramatically to 160.1 kg per capita in 2010. To improve agricultural sustainability and raise food security—including availability and cheap access—our agricultural strategy must focus on improving yield and productivity. Although production/productivity in food grains and pulses increased after 2000, yield gaps remain wide vis-à-vis other countries and yields vary greatly, indicating that there are opportunities to increase production by raising yields in most crops without inherently increasing prices.

Figure 6: Per Capita Net Availability of foodgrains in India (Per annum)



Source: CSO

Climate Change and its Impact on Agriculture

With 60% of total food grains and oilseeds being grown in the Kharif season and just 35% of total arable area being irrigated, Indian agriculture is still heavily reliant on rainfall. The Indian Meteorological Department (IMD) reported substantial temperature warming, lower mean rainfall, and higher rainfall variability over successive plans.

The government has contingency plans in over 500 districts. Furthermore, the National Mission for Sustainable Agriculture (NMSA) is one of eight missions of the National Action Plan on Climate Change, focusing on promoting judicious usage of shared capital through a community-based strategy. The Rain-fed Region Development Program (RADP), which takes a comprehensive approach to raise farmers' incomes in rainfed areas, was initiated in 22 states in 2013-14 and will be significantly expanded throughout the Twelfth Plan. Other projects involve the Indian Agricultural Research Council's National Climate Resilient Agriculture Initiative (NICRA) to improve Indian agriculture's resistance to climate change and vulnerability via strategic research and technology demonstration, capacity building, and sponsored/competitive grants.

Conclusion

Agriculture and the alliances remain pivotal to economic development and development in the Indian economy. It not only fulfills 1.3 billion Indians' food and nutritional needs, it contributes significantly to growth, employment, and generating demand through various backward and forward linkages. Moreover, the role of the agricultural sector in alleviating poverty and ensuring economic development is well established. Yet the industry's present threat. While it has made enormous strides in achieving agricultural production's nutritional security, affordability, and accessibility targets, a formidable agrarian crisis still threatens it. Recently, this situation has led to fresh agricultural development policy ideas. Focusing on farmers' wellbeing and development has gained attention.

Agricultural GDP growth has fluctuated significantly throughout the past two decades, with a high of 9.9% in 1996-97 and a low of -6.6% in 2002-03 dependent on annual rainfall. The rising disparity between agricultural and ally growth trends and overall economy results in sustained agricultural underperformance. The main concern for India's agriculture sector is significant development instability due to seasonal rainfall patterns, driven by global climate change.

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