AGRICULTURE AND INDIAN ECONOMY

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Introduction

India's already large population is expected to become the world's largest in the next 20 years, while its economy will soon overtake Japan's to become the world's third largest. The resulting increase in the demand for food will need to be met through higher agricultural productivity or by increasing food imports. This article discusses some of the key areas of progress and challenges for India's agricultural sector, including: productivity, water management, government policies and programs, and food distribution and storage.

Background

India has a particularly large agricultural sector. While the sector's share of GDP has halved in the past 30 years to around 15 per cent, it still employs around half of India's workforce and accounts for much of the volatility in Indian GDP. India has the second largest area of arable land in the world and is a major producer of a number of agricultural products (Table 1). Around the turn of the century, India overtook the United States as the world's largest producer of milk and is also a major producer of pulses, such as chickpeas and lentils, which are major sources of protein in vegetarian diets.

Rural Land Distribution and Access to Finance

A major institutional factor that has limited agricultural productivity in India is regulation of land holdings. In order to address the highly concentrated ownership structure of land in India prior to independence, the Government instituted land reforms that placed ceilings on land holdings. As a result, agriculture in India is dominated by a large number of small-scale, owner-occupied farms. The most recent estimates suggest that around 100 million households were engaged in agricultural production in 2002, roughly 70 per cent of all rural households and only marginally lower than the share of rural households engaged in agriculture in the early 1960s. Over the past 50 years, the share of farming households tending plots of land of less than one hectare has increased from 60 per cent to just under 80 per cent and the average farm size has fallen to around 1 hectare, with only ½ per cent of households farming more than 10 hectares of land (Table 3). By the early 1990s, most Indian states had enacted tenancy laws conferring ownership of land on tenants who were able to buy the land they farmed at a fair price, which reinforced the trend of increased fragmentation of land holdings during that decade.

Additionally, the increase in population has also contributed to smaller land holdings, while the subdivision of original family land holdings over generations has left many families with land holdings too small to provide an adequate stream of income.

Historical Significance of Agriculture

India has a rich history of agriculture, dating back to the Indus Valley Civilization. Over centuries, the sector evolved to accommodate various crops, techniques, and cultural practices. During British colonization, agriculture remained vital, though it was exploited for commercial cash crops like cotton and indigo. Post-independence, India focused heavily on agriculture to ensure food security and rural development. The Green Revolution of the 1960s transformed India's agrarian landscape, making the country self-sufficient in food grains, particularly wheat and rice. However, even with significant advances, agricultural productivity remains lower than global standards.

Agriculture's Contribution to the Economy

Agriculture is not only a provider of food and employment but also plays a strategic role in the development of the broader economy. It contributes about 17-18% to India's GDP, a substantial share given the size and diversity of the economy. Beyond direct contributions, agriculture feeds into various industries such as textiles, sugar, and food processing, creating a ripple effect across sectors. The government allocates significant budgetary resources for agricultural development, ensuring public investment in irrigation, rural roads, and agricultural research.

Challenges Facing Indian Agriculture

1. Fragmented Land Holdings: Over the years, the division of agricultural land into smaller plots due to inheritance laws has made farming less efficient. Small landholdings hinder mechanization, limit economies of scale, and reduce productivity.
2. Low Productivity: Despite employing a significant portion of the labor force, Indian agriculture suffers from low productivity levels. This is attributed to traditional farming methods, inadequate irrigation, and limited use of high-yield varieties.
3. Climate Change: The sector is highly vulnerable to climate change, with unpredictable monsoons, droughts, and floods adversely affecting crop yields. Climate-related risks make agriculture a precarious profession, pushing farmers into cycles of debt and poverty.
4. Dependence on Monsoons: Even today, a significant portion of India's agricultural land relies on rainfall for irrigation. Erratic monsoons can cause crop failures, exacerbating rural distress.
5. Market Inefficiencies: Farmers often face challenges in getting a fair price for their produce due to middlemen, lack of access to markets, and poor infrastructure. Inadequate storage facilities lead to post-harvest losses, especially in perishable commodities.

Government Initiatives

Recognizing the importance of agriculture, the Indian government has introduced several initiatives aimed at revitalizing the sector. The introduction of the Minimum Support Price (MSP) ensures farmers receive a fair price for their produce. Schemes such as Pradhan Mantri Krishi Sinchai Yojana (PMKSY) aim to improve irrigation coverage and efficiency. Additionally, the government has promoted sustainable farming practices through initiatives like Paramparagat Krishi Vikas Yojana, which encourages organic farming.

Digital agriculture is also gaining traction, with farmers accessing real-time information on weather, soil health, and market prices. The National Agriculture Market (e-NAM) is an online platform that integrates agricultural markets across the country, enabling farmers to sell their produce directly to buyers.

Agriculture and the Indian Economy

Agriculture has long been the foundation of India's economy, supporting nearly 58% of the population. Despite rapid industrialization, it remains vital, contributing around 17-18% to India's GDP. Beyond food production, agriculture fuels industries like textiles, sugar, and food processing, highlighting its significance in India's economic framework.

India's agrarian sector, while essential, faces several challenges. Fragmented landholdings limit productivity and mechanization. Traditional farming practices, inadequate irrigation, and limited access to high-yield seeds further hinder growth. Additionally, Indian agriculture is highly dependent on monsoons, making it vulnerable to erratic rainfall and climate change. Market inefficiencies, such as the presence of middlemen and poor infrastructure, lead to low farmer incomes and significant post-harvest losses.

The government has initiated several programs to address these issues. The Minimum Support Price (MSP) policy ensures farmers receive fair compensation, while schemes like Pradhan Mantri Krishi Sinchai Yojana (PMKSY) aim to enhance irrigation. Digital platforms like the National Agriculture Market (e-NAM) help farmers directly access markets, cutting out middlemen.

Looking ahead, the path to sustainable growth lies in modernizing agriculture through technology, better infrastructure, and sustainable farming practices. Precision agriculture, data analytics, and improved storage facilities can significantly increase efficiency. By addressing these issues, India can unlock the full potential of its agricultural sector, ensuring better livelihoods for farmers and long-term economic growth.

Water Management

Water management is crucial to improving conditions in agriculture. India currently has around 5,000 large dams that are able to store more than 220 teralitres, which ranks seventh in the world in terms of capacity. While dams in other parts of the world are built for flood mitigation, power generation and water supply, the primary purpose of India's dams is irrigation. Around 40 per cent of crop areas are now irrigated, and these areas produce 70 per cent of India's crop output. A significant proportion of farms have limited or no access to irrigation, and therefore still rely on rainfall as their sole source of water.

With just over 80 per cent of India's rainfall occurring during the summer monsoon season, which occurs from June through to September, deficient rainfalls have often had significant effects on the Indian economy. In 2009, the summer monsoon rainfall was lower than normal, which caused a fall in grain production of 7 per cent and pushed up grain and other food prices. In the past, agricultural production has been much more dependent on the summer monsoon, with large fluctuations in rainfall accounting for most of the volatility in agricultural production (Graph 6). Over time, however, the effect of the summer monsoon rain season has been mitigated through drought management (including drought monitoring), increased use of irrigation, and diversification of agricultural production. These measures

have made food production less vulnerable to poor weather conditions. In part, this helps explain why deficient rainfalls since the late 1990s have resulted in less significant contractions in agricultural output. In fact, variations in agricultural output, which once accounted for 60 per cent of the variation in GDP, now account for only 20 per cent, which in part reflects agriculture's lower share of GDP.

The Food Procurement and Distribution System

In addition to policies on land distribution, the Government has significant influence on the agricultural sector through other policy instruments, including subsidies for inputs, minimum price support arrangements and government procurement of food.

One-third of input subsidies are paid in the form of fertiliser subsidies, which are equivalent to 1 per cent of GDP. Under this subsidy scheme, the Government quotes a maximum retail price for various types of fertilisers and reimburses the seller the difference between the retail price and the 'market' price. The market price for domestically produced fertilisers takes into account transportation, storage, labour and energy costs. The subsidy for imported fertiliser is the difference between the import price and the maximum retail price. Urea fertilisers are a major input into agricultural production and its price has been fixed since 2003 despite large fluctuations in the cost of inputs. While India is able to produce enough urea fertiliser to meet domestic needs, it relies on imports to satisfy its demand for compound fertilisers, so that the increase in global fertiliser prices during 2007 and 2008 saw a large outlay in the subsidies paid for compound fertilisers. There are also substantial subsidies for electricity. Many farms use unmetered power and pay a subsidised lump-sum based on the power ratings of pump-sets used for irrigation purposes.

Conclusion

India's agricultural sector is still very important to the Indian economy, although its share of the economy has decreased over the past 50 years. India has made significant advances in agricultural production in recent decades, including the introduction of high-yield seed varieties, increased use of fertilisers and improved water management systems. Reforms to land distribution, water management and food distribution systems will further enhance productivity and help India meet its growing demand for food.

References

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