

A Review on Improvement of Agriculture System and Current Scenario in India

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ABSTRACT: *Following a 20-year period of neglect by foreign donors, agriculture is once again on the front lines, as food insecurity and hunger rise in tandem with rising food prices. In the next years, food supply and production in emerging nations, particularly India and smallholders, will become critical. However, this necessitates a number of challenging technological, institutional, and political challenges, such as ground markets, seed and input research, agricultural expansion, credit, rural infrastructure, customer connections, non-farm occupations in rural areas, commerce, and food price stabilization. The economic literature in this field is examined in this study. It will also focus on the role and interaction of farmers, which was a key component of the Green Revolution and the foundation for agricultural growth, as well as issues such as farmer income diversification, rural development approaches, global trade challenges, and sustainable development policies.*

KEYWORDS: *Agriculture, India, Farming, Marketing, System.*

1. INTRODUCTION

Agriculture continues to play an important role in economic development, particularly in low-income nations where the sector generates significant overall and aggregated earnings. Agriculture, which was a significant priority for developing nations, investors, and the international community in the 1960s and 1970s, disappeared from the development agenda in the 1980s and 1990s in order to reap the benefits of neglect and prosperity during the first decade of the twenty-first century. As the International Development Assessment, Science and Technology-IAASTD, 2009 (World Development Report, World Bank Agriculture for Development, and Cross-Cover Agriculture) all stem from national consultations of researchers, policymakers, and funding agencies, there is renewed interest in the sector's problems [1]. For example, during their meeting in Aquila, Italy in 2009, the G8 countries committed \$22 trillion to invest in agriculture. The commitments were committed to the food, environment and financial crises simultaneously following and after three world crises. Over a four-year stretch, food prices have risen twice. Food prices peaked in June 2008, and the UN Food and Agriculture Organization (FAO) reported another high record in March 2011. Drought, explosion and monsoon floods in several countries have caused devastation from Russia to Pakistan. This has led to malnutrition, food insecurity in developed countries and poverty vulnerability.

The G8 countries, for example, pledged \$22 trillion in agriculture investment during their 2009 summit in Aquila, Italy. Following and after three global crises, promises were made to the food, environmental, and financial crises. Food costs have increased twice in the last four years. Food prices peaked in June 2008, and in March 2011, the UN Food and Agriculture Organization (FAO) recorded another high. Drought, explosions, and monsoon floods have wreaked havoc in numerous

nations, from Russia to Pakistan. In industrialized nations, this has resulted in malnutrition, food insecurity, and poverty susceptibility [2]. There are two agricultural issues that need to be addressed. The first is the need to boost food production and productivity in emerging nations, particularly India. To achieve this ownership, seed and supply research and development, irrigation, fertilizers, agricultural growth, financing, rural structure, storage, and commercial linkages must all be addressed. The second concern is food price volatility, which is mostly caused by uncontrollable occurrences in developing nations. A series of interrelated actions will ensure that the most vulnerable nations and individuals have access to the food they require. The goal of this essay is to examine the agricultural economic literature and focus on critical topics for farm output and poverty reduction [3].

Within the development process, the function of farming in engaging agriculture with other economic sectors is discussed. Agriculture helps to improve wealth and poverty in developed nations by providing income and employment in rural regions, as well as ensuring enough food supply in urban areas. Agriculture is extremely important in low-income nations, as it employs around 60% of the workforce. A quarter of the country's gross domestic product (GDP) is spent on it (but only 9 percent in middle and 1 percent in high income countries). Three billion people live in rural regions in developing nations, out of a total population of 5.5 billion. Agriculture is the primary source of income for 86 percent of these rural households. Around 75% of the poor still reside in rural regions, where the agriculture sector and allied activities provide the majority of the income. Agriculture offers food, money, and work in agricultural development nations and as a major tool in poverty reduction in transformational countries. Agriculture is a significant yet challenging aspect of development policy to balance with industry. Agro pessimists' viewpoints have lately been articulated in the literature, based on the finding that agriculture in underdeveloped nations is frequently the least lucrative [4].

Let us analyze the factors of the Green Revolution and the foundations of rural growth. Because of the continual growth in yield in industrialized nations, the agricultural mode has been vigorous, involving the adoption of new varieties by farmers, irrigation, and a significant use of (expected environmental consequences) fertilizers and good institutions. In order for India to catch up with the rest of the globe in the next decades, substantial productivity improvements would be necessary. As a result, the issue is something else. With rare exceptions, any further development of croplands (the source of gradual gains in yields in the past) would be impossible. New seeds that are resistant to climate hazards and suited to local conditions require the creation and extension of sustainable irrigation systems. The most serious issues are those related to institutions and the economy. When compared to big farms, low-education insurance and credit markets, limited consumer access and market knowledge, and unstable property and rights of use are similarly unable to absorb the advantages of production. While new research and innovations such as genetically modified organisms (GMOs) and extension led services are critical for future growth and poverty reduction, fundamental institution rights are a requirement for success and a top priority on the agribusiness development agenda [5], [6].

2. IMPROVEMENTS REQUIRED

2.1. Changes Required in Structure:

In order to enhance agricultural production and create jobs, structural changes are necessary, with a focus on land reforms. Structural and Stabilization Policies, which were first implemented in 1991, prioritized manufacturing, tax reform, trade and investment, banking, and capital markets. There was no particular agriculture-specific gear available. Free trade, on the other hand, will provide pricing incentives to the agricultural market, resulting in greater investment and production in this area. Better agricultural trading conditions, trade advantages and specialties, the deployment of new technologies such as biotechnology, an increase in private irrigation investment, and marketing infrastructure such as storage and transportation will all result from structural changes. The Indian Economic Survey 2014-15 suggested the structural reforms listed below to further the development of a national common market and trade. While new research and innovations such as genetically modified organisms (GMOs) and extension led services are critical for future growth and poverty reduction, fundamental institution rights are a requirement for success and a top priority on the agribusiness development agenda [7].

1. To examine the Agricultural Produce Market Committee (APMC) Act, the Essential Committee (EC) Act, the Land Tenancy (LT) Act, and all other legislative instruments whose provisions are restrictive and create impediments to free commerce.
2. Alternative marketing initiatives, such as direct marketing and contract agriculture, will be launched.
3. To examine whether agricultural-related taxes should be included in the General Goods and Service Tax (GST).
4. We need solid commercial policies centered on tariff intervention instead of non-tariff trade obstacles.
5. Developing and launching competition in the agriculture industry, as well as encouraging private-sector investment.
6. To ensure that artificial scarcity and other bottlenecks in the production and distribution of food grains are avoided via effective government action.

Agricultural reforms, according to Moody's assessment on credit prospects, impact India's global standing since they influence fiscal deficit and inflation. These reforms intended to cut the fiscal deficit by 3.6 percent in 2015-16. We may add decentralized product procurement, surplus food grain disposal, and direct cash transfer food and fertilizer subsidies.

2.2. Changes Required in Technology:

Despite the fact that India is regarded as a labor surplus economy, farmers all throughout the country are obligated to employ technology to increase farm production. In the 1960s, agricultural technological reform was conducted. By creating high yield varieties (HYV) of seeds, the goal was to boost total output. To keep up with greater efficiency, it also incorporated chemical fertilizers, insecticides, and technical advancements in the agricultural sector's production and growth in the 11th five-year plan. The revolution was categorized in the same way. The new equipment were designed to increase efficiency in growing, harvesting, grading, and packing while also adding value. We may also cite a number of goals stated by our Prime Minister, Mr. Narendra Modi, in his recent speech to the country, including increasing farm production and using agricultural technology. He prioritizes the use of new technology so that farmers may contribute

to agriculture's overall growth. He also recommended "Lab to Ground," which he believes is the most difficult hurdle for a country like India. He claimed that the radical farmers are our true genius. The main goal of many research and agricultural institutes is to educate farmers about the benefits of radio and other electronic media. Investment, equipment, and productivity must be carried by both the government and the private sector to drive agriculture sector growth [8].

2.3. Changes Required in Institution:

After independence, agriculture reform was conducted, including the elimination of the zamindari regime, the consolidation of land ownership, crop insurance programmes, and so on. However, in the recent period of progress in agricultural institutional reforms, dynamic shifts have been observed. For the first time in the 1980s, a land-creation initiative was launched. Drought, floods, and crop disease protection was implemented. Gramin banks and other cooperative organizations have been created to give financial help in the form of loans. The major objective was to give lower-interest agriculture loans. Kishan credit card was launched with the help of the National Bank for Agriculture and Rural Development (NABARD) and the Reserve Bank of India (RBI) with a credit of rupee 50,000. Following that, the Public Distribution System (PDS), the Food Corporation of India (FCI), and the Minimum Support Price (MSP) schemes and programmes were developed to provide subsidized financing and food grains to poor and landless farmers. Because of atmospheric nitrogen fixation and soil nutrient maintenance, bio-fertilizers constitute an important source of nutrient delivery to plants.

Bio-fur-processing agents, such as bio-fertilizers and bio-pesticide, are produced at a lower cost and in a more environmentally friendly manner using renewable energy sources. The initiative is the most important part of the Integrated Plant Nutrient System (IPNS) (Lab to Land Project, University of North Maharashtra). Agriculture is given top priority in the most recent financial statement. The building of the water bowl and the Pradhan Mantri Krishi Sinchai Yojana have committed Rs 5,300 crore to aid with micro-irrigation. The focus has been on small and marginal farmers in order to help the agricultural industry through effective agricultural finance. The government set a target of Rs. 8,50,000 crore for agricultural finance. The allocation of Rs 34, 699 crore to the performance of programmes such as the Mahatma Gandhi National Rural Employment Guarantee Act was recommended (MNREGA) [9].

India has long been known as the agricultural country, with more than 60% of the population relying on agriculture for their living, both directly and indirectly. If the policy framework and implementation are effectively coordinated, Indian agriculture will meet the global standard when it comes to the key problems and aims. Following a policy proposal can go a long way toward accelerating agricultural growth.

2.4. Need of Eco-system Thinking:

Agriculture is a huge, complex, and sensitive environment that is varied, heterogeneous, and diverse. Any endeavor to restructure the industry must incorporate ecosystem thinking as well as a digital ecology. Crop/varietal selection, crop management, and marketing are all part of the agriculture value chain. In agricultural inputs and services, as well as logistics, it involves both public and private entities. Interoperability, data governance, data quality, data standards, security and privacy, as well as open innovation, must all be considered while establishing a digital

ecosystem for agriculture. Adoption of a decentralized, federated architecture that guarantees autonomy to service providers and all other players while still ensuring interoperability is a key necessity [10].

3. DISCUSSION

To address India's food scarcity, natural disasters, and poverty issues, many innovative agricultures have been developed. Organic agriculture has grown approximately 29 times in the previous five years, effectively overcoming difficulties. It has resulted in debt-free and prosperous lifestyles that are quality-driven. With the theme of consumer-centered and modern market-controlled farming, it has grown by 25-30% per year. Similarly, greenhouse agriculture is 3-4 times more efficient than traditional farming. Similarly, polyhouse farming has enhanced agricultural output by roughly 10 times the previous period owing to cost effectiveness, lack of herbicides and insecticides, and temperature controlled air. With the help of the government and other organizations, these success stories of diverse creative farm designs will boost agricultural output. In order to address the climatic issues, India has developed a document named the National Action Plan (NAP) on Climate Change. It provides recommendations for improving public-private partnerships and national policy planning. The global vision for altering long-term trends in order to achieve sustainable development has been expanded.

3.1. *Advanced Technology:*

According to the Department of Science and Technology, the Indian government funds 21 scientific-based volunteer organizations working at the village level (DST). This would assist research and development initiatives in the areas of technology generation and transition for a sustainable living in rural regions. It also encouraged theme networking and collaboration among various scientific and technology-related field groups. In 2006, the National Food Security Mission (NFSM) began increasing food grains to 20 million tons in the 11th plan cycle (10 million metric tons for rice, 8 metric tons for wheat and 2 million metric tons for pulse). Increased harvests in certain places have already had some impacts. A programme was created in 2005 to urge state governments to revive the Agricultural Technology Management Agency's expansion (ATMA). This concept provides an opportunity to improve the extension system. In terms of agricultural growth, research and expansion would yield a considerably better return on investment than other initiatives.

3.2. *Involvement of Private Sector:*

In recent years, an emphasis has been set for Public Private Partnership (PPP) for infrastructure and other growth-related services. Around 1 lakh popular service centers for IT-based and non-IT services have been created with sustainable, commercial, and socio-economic goals in roughly 600,000 villages. Various self-help groups (SHGs), community-based organizations, and private institutions like SKS have been created to give financial support to the rural community for growth-related initiatives. By offering urban facilities in rural regions, possibilities for rural life and infrastructure projects with little private sector intrusion can be identified.

The Agriculture-for-Development Mission is, in general, woefully underfunded. Economists, we feel, should concentrate on the most pressing concerns, such as property rights, agricultural

expansion, rural infrastructure, and food price stability. The most pressing issue right now is improving food security and developing effective management mechanisms for the most vulnerable. Economists and policymakers have been unable to develop the right policy instruments to combat food price volatility. On national markets, macroeconomic methods to price stability do not appear to be promising. Social security networks that help the poor against income shocks are likely to decrease negative consequences and prevent households from remaining in poverty; nevertheless, they require appropriate targeting procedures and a stable institutional climate. Beggar-thy-neighbor trade tactics have failed to stabilize prices and provide national food security, as well as being detrimental to the weak and reversing previous gains. Agricultural output is the most vulnerable to income shocks, but it is also the most difficult to safeguard scientifically and institutionally.

New means of increasing production must be found in those countries. The possibility for additional land expansion to boost agricultural productivity and intensification will be exhausted in the future. As a result, India wants high yields that are tailored to local circumstances for its Green Revolution. To integrate these agricultural specimens into contemporary value chains, current barriers such as a lack of knowledge, infrastructure, loans and insurance markets, and uncertain ownership rights must be addressed. In addition, new means of sharing information and learning, such as the use of communication technology in expanding services, might encourage farmer adoption and profitable production. Increased smallholder production in industrialized nations would also be a tool for long-term food security. The function of agriculture in production has been the topic of much research since the Lewis model. China, Brazil, India, and Turkey have all seen enormous transformations in the last 60 years, which we continue to refer to as "progress" through conventions.

The most important aspect of agriculture in developing nations now is far more robust than it has ever been. Productivity is stagnant in some regions of the globe, primarily in India, resources are scarce, degradation has decreased, and economic structural growth has halted, notwithstanding significant migration from rural and urban areas to mining and export-led growth in some countries. It has benefitted from significant advancements (from new technology to new financial and insurance markets). It becomes more sustainable in both low and high value commodities markets, as well as a sector; it gets more integrated in both the domestic and global economies. The literature has occasionally aided in illuminating the problems of the systemic economic transformation process, as well as the major institutional and political roadblocks. In two "scientific revolutions," the Green Revolution and the adoption of rewards for conventional farming, in our judgement, have benefitted politicians. Prices and trade policies have acted as a massive sector tax in the majority of emerging nations, and have been fundamentally detrimental to growth. The (relatively recent) emphasis on empirical analysis has considerably facilitated the assessment and quantification of the impact of specific policies on agriculture.

4. CONCLUSION

In economic literature, the importance of agriculture in growth was discussed. The main issue is how agriculture can be used to aid in the structural change of the economy. We began by analyzing agriculture's function and interconnections with other sectors in the development process.

Agricultural growth has the potential to significantly reduce poverty in emerging nations. As a result of this potential, improving agricultural production in developing nations is critical and an essential step in achieving the Millennium Development Goals. Increased agricultural revenue will benefit around 75% of today's rural poor. Furthermore, agriculture might provide economic growth in many India nations, for example, in emerging economies that rely heavily on this industry. However, this entails significant increases in output, owing to a number of factors such as new technology and its application, agricultural scale, and land and environmental issues for which we do not have "silver bullet" answers. The most difficult structural issues are those relating to company failures, a lack of markets, and property rights. Agriculture may become a medium for growth and employment creation for the rural nonfarm sector because of its linkages to small towns and rural regions. Rural development and community-driven development might aid this process. The government would have an essential role in some of the tasks listed in this text. They should not, however, be the exclusive provider. The private sector would be the biggest source of investment money and service suppliers. Donors, non-governmental organizations (NGOs), and civil society groups will all play a key role in the implementation of these efforts, both locally and globally. It will be important to determine the best combination of these actors and to foster successful collaboration among them.

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