International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

Review of India's Agricultural Sector: Economic Contribution, Subsidies, Trade, and Regulatory Protection

Harshit Dhote
Research Scholar, Shri Vaishnav Institute of Management & Science, Indore
harshitdhote02@gmail.com

Abstract - India's agricultural sector remains a vital pillar of the national economy, contributing significantly to employment, food security, rural development, and economic stability. Although the sector's share in Gross Domestic Product (GDP) has gradually declined due to the expansion of industry and services, agriculture continues to support a substantial proportion of the population and serves as the primary livelihood source for millions of rural households. This review examines the economic contribution of India's agricultural sector, focusing on its role in GDP generation, employment creation, and rural income enhancement. It further analyzes the importance of agricultural subsidies, including input subsidies for fertilizers, irrigation, electricity, and credit support, which are designed to improve productivity and farmer welfare. The study also explores India's agricultural trade performance, highlighting export growth, major agricultural commodities, global competitiveness, and challenges associated with international market integration. Additionally, the review investigates the regulatory and protection mechanisms implemented by the government, such as Minimum Support Price (MSP), public procurement systems, tariff policies, crop insurance schemes, and food security programs. The findings indicate that while government interventions have contributed significantly to agricultural growth and stability, challenges related to productivity, sustainability, market access, climate change, and fiscal burden persist. The review emphasizes the need for balanced policy reforms that enhance competitiveness, encourage technological innovation, strengthen supply chains, and ensure sustainable agricultural development. Overall, the study provides a comprehensive understanding of the economic significance, policy framework, and future prospects of India's agricultural sector in the context of evolving domestic and global economic conditions.

Keywords: Agriculture, Economic Contribution, Agricultural Subsidies, Agricultural Trade, Regulatory Protection, Minimum Support Price, Food Security, India.

I INTRODUCTION

Agriculture is the backbone of India's economy, providing livelihoods to a majority of the population. More than 60 percent of India's population earns a living from agriculture, as it provides employment to around 58 percent of people (GOI). Given agriculture's immense contribution, the sector requires special policy attention and support to sustain growth. In recent years, India's focus has shifted more towards industrial advancement, which has led to a decline in agriculture's contribution to GDP. Therefore, revitalizing the agricultural sector's growth is critical (Kumar, 2020). The government plays a vital role in developing the agricultural sector

by providing various kinds of financial and technical support. These efforts aim to ensure food self-sufficiency, provide technical assistance to small-scale producers for adopting modern technologies, maintain price stability, boost employment generation, and increase farmer incomes. The government forms various policies to support agriculture, including input subsidies (fertilizer, electricity, seeds) to lower costs, minimum support price (MSP) mechanisms, concessional trade policies for import-export of farm products, and direct income transfers. Overall, agricultural subsidies refer to financial transfers given by the government to farmers and agribusinesses with the aim of enhancing farm incomes (Salunkhe & Deshmukh, 2012). According to the WTO, subsidies represent financial contributions by the government or public entities that confer benefits to the general public. Subsidies can provide economic benefits to the agriculture sector. Input subsidies help provide essential inputs like fertilizers, electricity, and water to farmers at affordable rates. Such input subsidies form a significant portion of overall agricultural subsidies. Subsidies may also take the form of direct cash transfers to producers or tax rebates on the import and export of farm products. As agricultural subsidy is most debatable issue in the world. Many researchers have presented their thought on the agricultural subsidies on the national as well as international level through research papers and articles. Swaminathan (1975) highlight the role of subsides in promoting the usage of high –yielding crop varieties and modern farming practices, which led to increased food production. This period marked the beginning of the government's intervention in agricultural markets through price support, input subsidies, and credit facilities. Gulati et al. (2005) and Kumar and Joshi (2018) have examined the relationship between agricultural subsidies and productivity. While some argue that subsidies have played a crucial role in increasing crop yields and food security. Others have raised concerns about their efficiency and the unintended consequences, such as soil degradation and excessive water use. Mathur et al. (2006) looked at the patterns in the rise in agricultural output in India and the factors influencing that expansion. The results of the study showed growth in Indian agriculture sector has a declining trend during the study period.

Authors suggested that for the future growth of the agricultural sector government need to increase its expenditure by 10 to 15 percent and provides basic infrastructure to the rural area. Kaur and Sharma (2012) have examined the agricultural subsidy in India during the time period 1980-81 to 2008-09. They consider input subsidy like fertilizer, seed, electricity, irrigation and machinery subsidy. The result showed increasing trends in all these subsidies during the study period. There is a need to form rational policy for to improve the efficiency of agricultural subsidy. Salunkhe and Deshmush (2012) tried to seek insight about the agricultural subsidies and their distribution in India. This research was conducted using secondary data. The conclusion of the study showed that government of India provides many types of subsidies to the agriculture. It also showed that the trends of the investment in agriculture has been increased but at the same time total cultivated area also increased. Authors suggested that policy maker should focus more on the agriculture sector so that growth for the same can be possible.

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

Gautam (2015) reviews the argument for and against the agricultural subsidy. Effectiveness of the program depend on the three issues, targeting the needed people other than who want subsidies, second one is it should be effective by the insuring positive impact and reducing wastage. Third on is, it should be sustainable by reduce environmental footprint. Lovelace and Diamond (2017) discussed about the supply management and subsidy in agriculture. They provide some insight about the US farm bill through the Polonyian and Food regime Political-economic theories. In the conclusion authors revealed that there were some problems associated with the supply management, farm policy and over production. To deal with overproduction, an efficient supply management policy is necessary. It was recommended that a cross border alliance may aid in the export of food commodity and that a policy for coordination be put forward. Farmers need to understand the supply management in agriculture. Anand and Sha (2020) investigated the importance of the agricultural subsidies in India. The factors that studied were agricultural finance, irrigation, production, infrastructure and technology. The study shows that the agriculture subsidy was helpful for the growth of the agriculture sector but the some mismanagement, corruption and hurdle in the distribution system make it difficult to reach the benefit to the real beneficiary.

Kumar (2020) examined the impact of agricultural subsidies on the agriculture sector in India. It was a review-based study. The conclusion of the study revealed that various study recommended the withdrawal of agricultural subsidies because that fund can be used in other development activities. But it also creates fear of reduction in agricultural production and income of the farmers. Author suggested that government should frame such policy which makes distribution of agricultural subsidies more transparent and policy should be farmers friendly. It will helpful in the increase of production and income of farmers.

Environmental impact of Agricultural Subsidies Like many other countries, agricultural subsidies in India have both Positive and negative environmental impacts. These impacts can vary depending on the type of subsidy, how it implemented and distributed. There are some key environmental impacts of agricultural subsidies in India.

Agriculture continues to play a significant role in the Indian economy despite a gradual decline in its share of GDP over the last several decades. The sector contributed approximately 15–18% of India's GDP/GVA while supporting a large share of the workforce. According to the Economic Survey and national statistics, agriculture and allied activities accounted for around 18.2% of GDP in 2023–24, whereas historical estimates indicate a decline from over 50% in the 1950s to about 15.4% in 2015–16. At the same time, the structure of the sector has evolved, with high-value segments such as horticulture, livestock, dairy, and fisheries accounting for more than 45% of agricultural output, reflecting a shift toward diversification and value-added production. This trend reflects structural transformation toward manufacturing and services while maintaining agriculture's strategic importance for food security, rural livelihoods, and economic development (APEDA).

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

II THEORETICAL FRAMEWORK

The study of agriculture and public policy in India can be framed using various theoretical perspectives from agricultural economics, public policy theory, and rural development. The following key theories and concepts form the theoretical foundation of this research:

Modernization Theory:

Modernization theory posits that the development of agriculture is a necessary step in the overall economic development of a country. It emphasizes the need for technological adoption, infrastructure improvements, and policy reforms to transform traditional agricultural practices into more efficient and productive systems. In the context of India, this theory explains the shift from subsistence farming to market-oriented agriculture through policies such as the Green Revolution and the promotion of high-yielding varieties and modern agricultural techniques.

Dependency Theory:

Dependency theory, in the context of agriculture, focuses on how developing countries like India may be trapped in a cycle of dependency on external markets, technology, and resources. This is particularly relevant in understanding how India's agricultural policies, while aiming for self-sufficiency, may inadvertently perpetuate dependencies, such as reliance on subsidies, imported technologies, or global market conditions. This theory can be used to analyze the limitations of India's public policies in creating truly self-reliant and resilient agricultural systems.

Agrarian Crisis and Marxist Theory:

Marxist theory, particularly the focus on class struggle and unequal distribution of land and resources, offers insights into the structural challenges facing agriculture in India. The agrarian crisis, characterized by rural indebtedness, low farmer income, and unequal access to resources, can be analyzed through this lens. Policies such as land reforms, subsidies, and credit schemes aim to address these issues, but often face obstacles like ineffective implementation or failure to address deeper systemic inequalities.

Rural Development Theory: Rural development theory highlights the interconnectedness between agriculture and broader rural development goals, such as poverty reduction, employment generation, and improving living standards. The theory advocates for an integrated approach to development, emphasizing the need for infrastructural investment, education, healthcare, and access to markets to complement agricultural policies. In India, policies like rural employment schemes (MGNREGA) and rural electrification are key examples of how agricultural policies must be integrated into wider rural development strategies.

Public Choice Theory helps to explain the behavior of policymakers and the challenges in crafting effective public policies, especially when various interest groups (such as large farmers, agribusinesses, and political entities) lobby for their needs. In the case of India, the influence of various stakeholders, including farmers' unions, state governments, and private sector actors, often complicates policy formulation and implementation. This theory can

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

provide insights into why agricultural policies like MSP or subsidy programs may have unintended consequences or become distorted by political considerations.

Theory focuses on achieving long-term agricultural growth without compromising the ability of future generations to meet their needs. It emphasizes the balance between economic growth, environmental protection, and social equity. In the context of India, this theory aligns with the need for policies that promote sustainable agricultural practices, such as organic farming water conservation, and soil health management, while addressing issues like climate change and resource depletion

Institutional economics examines how the formal and informal institutions (laws, policies, market structures) shape the behavior of individuals and organizations within an economy. In India, agricultural policies are often influenced by institutional factors like land tenure systems, market access, credit availability, and government institutions (e.g., Food Corporation of India, Agricultural Produce Market Committees). Understanding how these institutions function and interact helps to analyze the effectiveness of agricultural policies in addressing issues like market inefficiencies, farmer empowerment, and policy implementation gaps.

Behavioural economics looks at the psychological and social factors influencing farmers' decision-making. This perspective is useful for understanding the inefficiencies in agricultural decision-making, such as the tendency for farmers to continue using traditional practices even when better options are available. Public policies targeting behavior change such as insurance schemes, credit facilities, or awareness campaigns about new technologies can be analysed through this lens. The theoretical framework for this study integrates multiple perspectives to examine the complex relationship between agriculture and public policy in India. It recognizes the historical, economic, social, and political dimensions of agricultural development while focusing on sustainable, inclusive, and efficient policy interventions. By utilizing these theories, the study aims to critically analyze the effectiveness of current agricultural policies and propose recommendations for future improvements.

Increased Food Production

Subsidies can help increase food production, ensuring food security for the growing population like India. This can reduce the pressure on natural ecosystems caused by land conversion for agriculture (Kumar, 2022). Banga (2016) found that Green Box subsidies can increase agricultural productivity, production, and trade. However, Kumbhakar (2010) reported a negative effect of subsidies on farm productivity but a positive influence on technical efficiency. Technology Adoption-Some subsidies promote the adoption of modern and sustainable agricultural practices, such asthe use of high-yield crop varieties and efficient irrigation systems. These practices can lead to higher agricultural productivity with lower resource use (Potter and Tilzey, 2007; Fan, 2008).

Livelihood Support

By providing financial support to farmers, subsidies can help maintain rural livelihood, reducing migration to urban areas and the associated urbanization and environmental pressures

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

(Salunkhe, 2016). Dorward (2015) notes that while subsidies can have positive impacts on food security and poverty reduction, they can also have negative effects. Overuse of Resources subsidies like fertilizers and water can lead to their overuse, which can result in soil degradation, water pollution and loss of biodiversity. Excessive use of chemical fertilizer can lead to nutrient runoff and soil contamination (Singh, 2000).

Monoculture and Biodiversity Loss

Subsidies that encourage the cultivation of a few high yield crop varieties can lead to monoculture farming, which is detrimental to biodiversity. It reduces the diversity of crops, making agriculture more susceptible to pests and diseases (Singh, 2000).

Water Depletion

Subsidized irrigation can lead to excessive groundwater pumping, depleting aquifers and causing long-term water scarcity. This is a significant concern in regions with heavy agricultural subsidies (Badiani and Jessoe, 2019). The Fifteenth Finance Commission commissioned a comprehensive study that estimated annual state-level subsidies of approximately ₹90,000 Crore for electricity (power subsidies) and ₹17,500 Crore for irrigation subsidies. This estimate underscores the substantial fiscal support that is provided to the agricultural sector. These subsidies are designed to decrease production costs and enhance access to energy and irrigation. However, there are concerns regarding environmental sustainability and their efficiency. Electricity subsidy is responsible for the increased dependence on the ground water usage and it will create a serious problem in future (Badiani et al., 2012).

Greenhouse Gas Emission

Intensive agricultural practices supported by subsidies can contribute to greenhouse gas emissions, primarily through the use of fossil fuels for machinery and release of methane from livestock (Baig et al., 2023).

Waste and Pollution

subsidies can lead to wasteful practices, such as overproduction of certain crops that are then discarded, contributing to food waste. Additionally, the improper disposal of agricultural waste, including plastics and chemicals, can cause pollution (Demirbas, 2009). With availability of input on subsidized price, it encourages the more usage of inputs which lead to the wastage of input and also increase soil pollution (Gautam, 2015).

Climate Change

Agriculture makes a substantial contribution to greenhouse gas emissions. Particularly worrisome are emissions of nitrous oxide from fertilizer use and methane from cattle. Sustainable farming practices promoted through subsidies, such as agroforestry, organic farming, and low-emission livestock management, can help reduce these emissions and contribute to climate change mitigation (Baig et al., 2023 and Mowbray). Gautam (2015) indicates that use of subsidized fertilizer creates nutrient imbalance and it will reduce the productivity by 25 percent.

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

Key recent policy changes

Over the course of 2024, India gradually removed most export restrictions on rice (bans, duties, and minimum export prices) previously introduced in 2022-23. At the end of March 2025, the last remaining export ban on broken rice was also removed. In turn, tariffs for crude palm, soybeans and sunflower oil were raised in 2024 from 0% to 20% and for refined sunflower and soybean oils from 12.5% to 32.5%.

The 2024-25 Union Budget targets increasing grain production by 50 million tonnes by 2030 (a 15% increase compared to the 2023-24 marketing year output), while also diversifying production towards horticulture, pulses, and oilseeds. The budget allocation for the subsidised credit programme Kisan Credit Card was also increased by 67%, and the budget for key dairy sector programmes increased by 16%.

In June 2024, the minimum support price (MSP) was increased from the previous marketing season for several summer-planted (*kharif*) crops. In October 2024, the minimum support prices for winter-planted (*rabi*) crops were also increased. In February 2024, the Fair and Remunerative Price for sugarcane was increased by almost 8%. India and the European Free Trade Association (EFTA) signed a Trade and Economic Partnership Agreement (TEPA) on 10 March 2024. EFTA is removing duties on 92.2% of its tariff lines, which cover 99.6% of India's exports; EFTA's market access includes tariff concessions on processed agricultural products. India is removing duties on 82.7% of its tariff lines, which cover 95.3% of EFTA exports, but sectors such as dairy, soybeans and other sensitive agricultural products are excluded. OECD. (2025). Local farmers and consumers are protected through food safety regulations, quality standards, and sanitary and phytosanitary (SPS) measures that ensure agricultural products meet health, safety, and quality requirements while preventing the spread of pests, diseases, and contaminants.

Table 1 India's Agricultural Sector – Economic Contribution, Subsidies, Trade, and Regulatory Protection

Author(s) & Year	Title of the Study	Objectives	Methodology	Key Findings
Ashok Gulati and Sharma (2021)	Agricultural Subsidies in India: Trends and Implications	To examine the effectiveness of agricultural subsidies and their impact on farm productivity.	Secondary data analysis using government reports and agricultural statistics.	Subsidies significantly support farm incomes but create fiscal pressure and resource inefficiencies, particularly in water and fertilizer use.

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

Ramesh Chand (2019)	Structural Transformation of Indian Agriculture	To analyze the changing role of agriculture in India's economy.	Economic trend analysis using national income and employment data.	Agriculture's GDP share has declined while its importance in employment and food security remains substantial.
T. Haque (2020)	Agricultural Reforms and Farmer Welfare in India	To evaluate agricultural reforms and their impact on farmer welfare.	Policy analysis and review of reform measures.	Market reforms can improve efficiency, but strong institutional support is necessary to protect small farmers.
S. Mahendra Dev (2021)	Agriculture, Rural Development and Inclusive Growth	To investigate agriculture's role in rural development and poverty reduction.	Literature review and macroeconomic analysis.	Agricultural growth remains critical for reducing rural poverty and promoting inclusive development.
Food and Agriculture Organization (2022)	The State of Food and Agriculture	To assess global and national agricultural performance and policy interventions.	Comparative international analysis using secondary data.	Government support mechanisms remain essential for ensuring food security and sustainable agricultural production.
Organisation for Economic Co-operation and Development (2020)	Agricultural Policy Monitoring and Evaluation: India	To evaluate India's agricultural support policies and trade measures.	Policy evaluation framework and economic assessment.	India provides substantial producer support through subsidies and market interventions, influencing

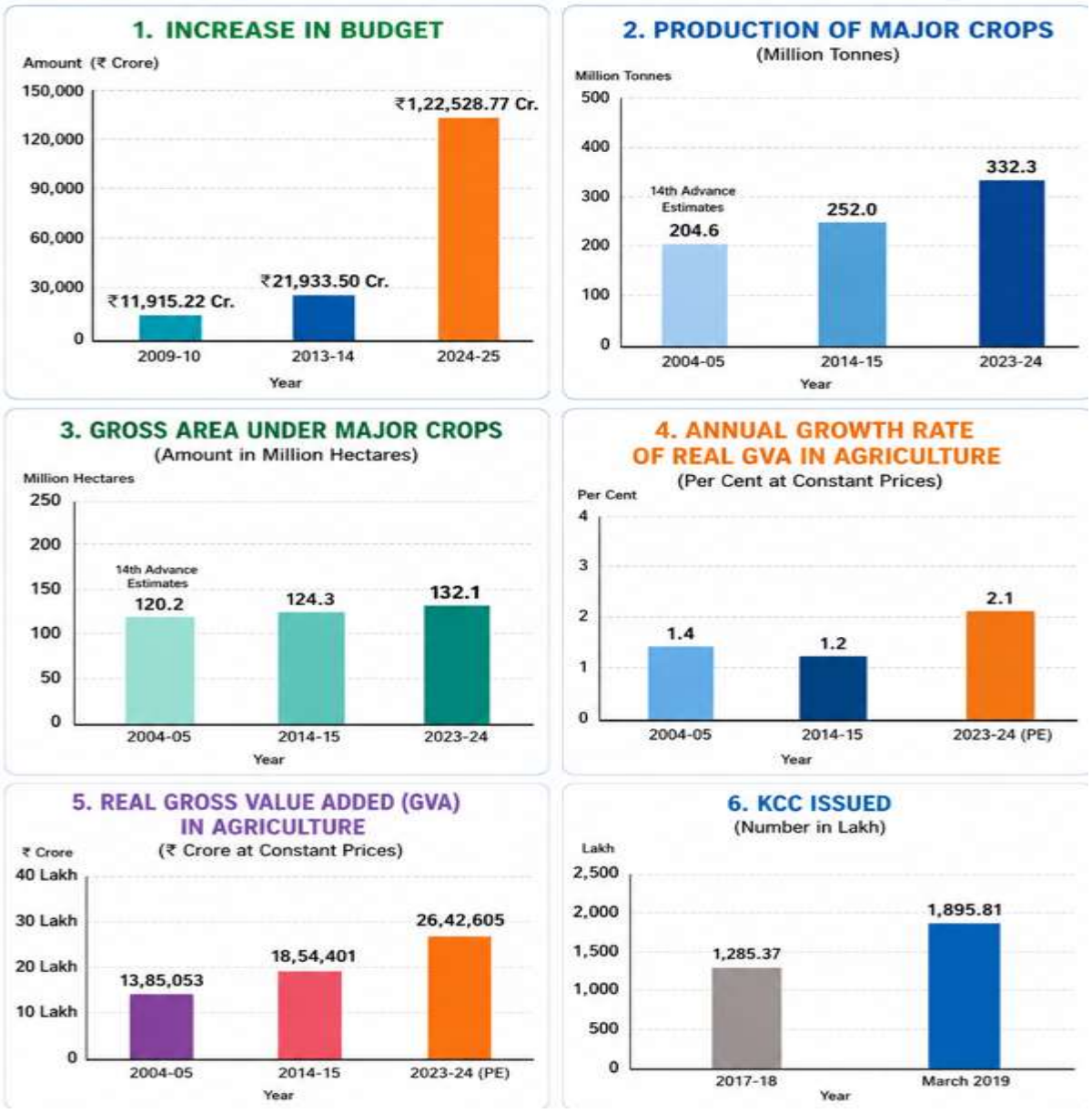
International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

				competitiveness and trade.
Prabhu Pingali (2018)	Agricultural Transformation and Rural Prosperity	To analyze the relationship between agricultural transformation and rural economic growth.	Conceptual and empirical review.	Diversification, technology adoption, and market integration are essential for agricultural modernization.
National Bank for Agriculture and Rural Development (2023)	Status of Indian Agriculture and Rural Economy	To review recent developments in Indian agriculture and rural finance.	Secondary data and sectoral analysis.	Credit access, infrastructure investment, and digitalization are important drivers of agricultural growth.
Kym Anderson (2019)	Agricultural Trade Policies and Global Competitiveness	To examine agricultural trade policies and export competitiveness.	International trade analysis and policy review.	Trade liberalization can increase agricultural exports, but domestic support policies influence competitiveness.
World Bank (2022)	Transforming Agriculture for Sustainable Growth in India	To identify strategies for sustainable agricultural development.	Sector review and policy analysis.	Investments in technology, climate resilience, and value chains are necessary for long-term agricultural sustainability.

Table 1 presents a review of significant studies examining various dimensions of India's agricultural sector, including economic contribution, agricultural subsidies, trade policies, rural development, and regulatory protection mechanisms. The reviewed literature highlights the critical role of agriculture in supporting economic growth, employment generation, food security, and rural livelihoods. Several studies emphasize the importance of government interventions such as subsidies, minimum support prices, credit facilities, and market regulations in enhancing farmer welfare and agricultural productivity. The literature also reveals that while subsidies and policy support have contributed to agricultural growth, they have created challenges related to fiscal sustainability and resource efficiency. Furthermore,

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

studies on agricultural trade indicate that market liberalization and export promotion can strengthen global competitiveness, although domestic support measures continue to influence trade performance. Research also underscores the importance of technological advancement, digitalization, climate resilience, infrastructure development, and value chain integration for achieving sustainable agricultural development. Overall, the reviewed studies collectively demonstrate that balanced policy reforms, institutional support, and sustainable farming practices are essential for ensuring long-term growth and competitiveness of India's agricultural sector.



- Figure 1: Key Trends and Performance Indicators of India's Agricultural Sector (2004–05 to 2024–25)

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

Figure 1 presents major developments in India's agricultural sector over the last two decades. The figure highlights a substantial increase in the agricultural budget allocation from ₹11,915.22 Crore in 2009–10 to ₹1,22,528.77 crore in 2024–25, reflecting enhanced government support for the sector. The production of major crops increased from 204.6 million tonnes in 2004–05 to 332.3 million tonnes in 2023–24, indicating significant improvements in agricultural output. Similarly, the gross area under major crops expanded from 120.2 million hectares to 132.1 million hectares during the same period. The figure also shows that the annual growth rate of real Gross Value Added (GVA) in agriculture improved from 1.4% in 2004–05 to 2.1% in 2023–24. Real GVA in agriculture nearly doubled from ₹13,85,053 Crore to ₹26,42,605 Crore, demonstrating the sector's increasing contribution to the economy. Furthermore, the number of Kisan Credit Cards (KCC) issued increased from 1,285.37 Lakh in 2017–18 to 1,895.81 lakh by March 2019, indicating improved access to institutional agricultural credit. Overall, the figure illustrates the positive impact of government investment, policy support, and technological advancement on agricultural growth and productivity in India.

III CONCLUSION

India's agricultural sector continues to play a crucial role in the country's economic and social development despite structural changes in the economy. The sector remains a major source of employment, food security, and rural livelihood generation, supporting millions of households across diverse geographical regions. Its contribution extends beyond agricultural production by supplying raw materials to industries, generating export earnings, and maintaining socio-economic stability in rural areas.

The review demonstrates that government support through subsidies, procurement systems, price support mechanisms, and welfare programs has significantly contributed to agricultural growth and farmer protection. Policies such as Minimum Support Price (MSP), fertilizer subsidies, irrigation support, and crop insurance have helped reduce production risks and improve income security for farmers. At the same time, agricultural trade has emerged as an important driver of sectoral growth, with India becoming a leading exporter of several agricultural commodities, including rice, spices, tea, and marine products.

However, the sector continues to face multiple challenges, including low productivity in certain regions, fragmented landholdings, climate-related risks, inefficient supply chains, post-harvest losses, and dependence on government support. Rising fiscal costs of subsidies and increasing global competition also necessitate a re-evaluation of existing policy frameworks. Future agricultural development requires a balanced approach that combines farmer welfare with market efficiency, technological advancement, environmental sustainability, and trade competitiveness.

In conclusion, India's agricultural sector remains strategically important for achieving inclusive economic growth and sustainable development. Strengthening agricultural infrastructure, promoting innovation, improving market access, encouraging climate-resilient farming

practices, and implementing targeted policy reforms will be essential for ensuring long-term productivity, farmer prosperity, and national food security. The continued modernization and diversification of the agricultural sector will play a decisive role in shaping India's future economic and developmental trajectory.

REFERENCES

1. Agricultural and Processed Food Products Export Development Authority (APEDA). (2025). *Agri Export Overview*. Government of India.
2. Anand, R., & Sha, U. (2020). *Impact of Subsidies on Indian Agriculture Sector: An Analysis*. Journal of Emerging Technologies and Innovative Research, 7(5), 457–462.
3. Anderson, Kym. (2019). *Agricultural trade, policy reforms and global competitiveness*. Washington, DC: World Bank Publications.
4. Arun, B. K. (2017). *Indian Agriculture: Status, Importance and Role in Indian Economy*. Journal of Studies in Management and Planning, 3, 212–213.
5. Badiani, R., & Jessoe, K. K. (2019). *Electricity Prices, Groundwater, and Agriculture: The Environmental and Agricultural Impacts of Electricity Subsidies in India*.
6. Badiani, R., Jessoe, K. K., & Plant, S. (2012). *Development and the Environment*. Journal of Environment and Development, 21(2), 244–262.
7. Baig, I. A., Irfan, M., Salam, M., & Isik, C. (2023). *Addressing the Effect of Meteorological Factors and Agricultural Subsidy on Agricultural Productivity in India: A Roadmap Toward Environmental Sustainability*. Environmental Science and Pollution Research, 30, 15881–15898.
8. Chand, Ramesh. (2019). *Transforming Indian agriculture: Challenges and opportunities*. New Delhi: NITI Aayog.
9. Commission for Agricultural Costs and Prices. (2023). *Price policy for Kharif crops 2023–24*. New Delhi: Government of India.
10. Demirbas, A. (2009). *Political, Economic and Environmental Impacts of Biofuels: A Review*. Applied Energy, 86(1), 108–117.
11. Dev, S. Mahendra. (2021). Agriculture, rural development and inclusive growth in India. *Economic and Political Weekly*, *56*(12), 42–49.
12. Directorate General of Foreign Trade. (2023). *Foreign trade statistics of India*. New Delhi: Ministry of Commerce and Industry.
13. Dorward, A. R., & Morrison, J. A. (2015). *Heroes, Villains and Victims: Agricultural Subsidies and Their Impacts on Food Security and Poverty Reduction*. Research Papers in Economics, 194–213.
14. Economic Advisory Council to the Prime Minister. (2022). *Agriculture and rural economy in India: Emerging trends and policy directions*. New Delhi: Government of India.
15. Fan, S., Gulati, A., & Thorat, S. (2008). *Investment, Subsidies, and Pro-Poor Growth in Rural India*. Agricultural Economics, 39, 163–170.

16. Food and Agriculture Organization. (2022). *The state of food and agriculture 2022: Leveraging automation in agriculture for transforming agrifood systems*. Rome: FAO.
17. Gautam, M. (2015). *Agricultural Subsidies: Resurging Interest in a Perennial Debate*. Indian Journal of Agricultural Economics, 70(1), 83–105.
18. Gulati, A., Juneja, R., & Shreedhar, G. (2021). *Repurposing India's Agricultural Policies and Subsidies*. NITI A
19. Gulati, A., Narayanan, S. (2003). *The Subsidy Syndrome in Indian Agriculture*. Oxford University Press.
20. Gulati, Ashok, & Sharma, P. (2021). *Agricultural subsidies in India: Performance, challenges and reforms*. New Delhi: Indian Council for Research on International Economic Relations (ICRIER).
21. Haque, T.. (2020). Agricultural reforms and farmer welfare in India. *Indian Journal of Agricultural Economics, 75*(3), 245–260.
22. Indian Council of Agricultural Research. (2022). *Annual report 2021–22*. New Delhi: ICAR.
23. International Food Policy Research Institute. (2021). *Global food policy report 2021: Transforming food systems after COVID-19*. Washington, DC: IFPRI.
24. Kaur, R., & Sharma, M. (2012). *Agricultural Subsidies in India: Boon or Curse*. IOSR Journal of Humanities and Social Science, 2(4), 40–46.
25. Kondekar, S. (2023). *An Analytical Note on the Status of Agriculture Sector in Indian Economy*. PARIPEX Indian Journal of Research, 12(1), 25–27.
26. Kumar, S. (2020). *Impact of Subsidies on Agriculture Sector in India*. Agri Mirror: Future India, 1(2), 40–44.
27. Kumbhakar, S. C., & Lien, G. (2010). *Impact of Subsidies on Farm Productivity and Efficiency*. In V. Ball, R. Fanfani, & L. Gutierrez (Eds.), *The Economic Impact of Public Support to Agriculture* (pp. 109–128). Springer.
28. Mathur, A. S., Das, S., & Sircar, S. (2006). *Status of Agriculture in India: Trends and Prospects*. Economic and Political Weekly, 41(52), 5327–5336.
29. Ministry of Agriculture and Farmers Welfare. (2023). *Agricultural statistics at a glance 2023*. New Delhi: Government of India.
30. Ministry of Agriculture and Farmers Welfare. (2025). *Annual Report 2024–25*.
31. National Bank for Agriculture and Rural Development. (2023). *Status of Indian agriculture and rural economy report 2023*. Mumbai: NABARD.
32. NITI Aayog. (2021). *Doubling farmers' income: Progress and policy recommendations*. New Delhi: Government of India.
33. OECD. (2025). *Agricultural Policy Monitoring and Evaluation: India*.
34. Organisation for Economic Co-operation and Development. (2020). *Agricultural policy monitoring and evaluation 2020: India*. Paris: OECD Publishing.

International Journal of Engineering, Science and Humanities
An international peer reviewed, refereed, open access journal
Impact Factor: 8.3 www.ijesh.com ISSN: 2250 3552

35. Pingali, Prabhu. (2018). Agricultural transformation and rural prosperity in developing countries. *Global Food Security, 19*, 1–5.
36. Potter, C., & Tilzey, M. (2007). *Agricultural Multifunctionality, Environmental Sustainability and the WTO*. Geoforum, 38(6), 1290–1303.
37. Ramaswami, B. (2019). *Agricultural Subsidies*. Study Report for the Fifteenth Finance Commission, Government of India.
38. Reddy, V. R. (2005). *Costs of Resource Depletion Externalities: A Study for Groundwater in Andhra Pradesh*. Economic and Political Weekly, 40(49), 5148–5154.
39. Reserve Bank of India. (2023). *Handbook of statistics on the Indian economy*. Mumbai: RBI.
40. Reuters. (2024). *India Diversifies Food Exports as Curbs on Domestic Staples Weigh*.
41. Salunkhe, H. A., & Deshmukh, B. B. (2012). *The Overview of Government Subsidies to Agriculture Sector in India*. IOSR Journal of Agriculture and Veterinary Science, 1(5), 43–47.
42. Singh, S. (2015). *Environmental Degradation by Faulty Pricing Policies for Natural and Environmental Resources in Indian Agriculture*. Agricultural Economics Research Review, 28(1), 1–18.
43. United Nations Conference on Trade and Development. (2022). *Trade and development report 2022*. Geneva: UNCTAD.
44. World Bank. (2022). *Transforming agriculture for sustainable growth in India*. Washington, DC: World Bank.
45. World Trade Organization. (2023). *World trade statistical review 2023*. Geneva: WTO.