



# Government Agriculture Schemes in India: A Review

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## Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

## Article Information

DOI: 10.9734/AJAEES/2023/v41i112261

## Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/107042>

**Review Article**

**Received: 12/08/2023**

**Accepted: 18/10/2023**

**Published: 07/11/2023**

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## ABSTRACT

The agricultural sector plays a vital role in India's economy, employing a significant portion of the population and contributing substantially to the nation's Gross Domestic Product (GDP). To promote sustainable growth, improve farm productivity, and uplift the livelihoods of farmers, the Indian government has implemented various agriculture schemes over the years. This abstract provides a concise review of select government agriculture schemes in India, focusing on their objectives, implementation strategies, and overall impact. Through an in-depth analysis of relevant literature and government documents, this review outlines the historical context and evolution of agriculture schemes in India. It explores how these schemes have evolved to address the diverse challenges faced by the agricultural sector, ranging from resource constraints to climate change and market fluctuations. The abstract examines prominent initiatives such as the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) which aims to provide direct income support to farmers, the Soil Health Card Scheme to improve soil fertility and enhance crop yields, and the National Agricultural Market (e-NAM) to create a unified platform for seamless agricultural trade. Furthermore, the abstract sheds light on the Rashtriya Krishi Vikas Yojana (RKVY) and the Pradhan Mantri Fasal Bima Yojana (PMFBY), designed to boost agricultural infrastructure and insure farmers against crop losses, respectively.

*Keywords: Government agriculture schemes, rashtriya krishi vikas yojana; pradhan mantri fasal bima yojana; national agricultural market, livelihood.*

## 1. INTRODUCTION

Agriculture is the backbone of India's economy, employing over half of its workforce and contributing significantly to its GDP [1]. However, the sector faces numerous challenges, including low productivity, fragmented landholdings, climate uncertainties, and limited access to modern technology and markets. To address these challenges and uplift the agricultural community, the Government of India has initiated several agricultural schemes and policies over the years. These schemes aim to improve farm productivity, increase farmers' income, enhance agricultural infrastructure, and promote sustainable agricultural practices. The document by the Planning Commission of India [2] outlines the strategy and action plan for doubling farmers' income. It discusses the key areas where government agriculture schemes are crucial in achieving this goal. The Indian government has recognized the crucial role of agriculture in achieving food security, poverty alleviation, and overall rural development. As a result, it has launched a multitude of schemes, each targeting specific aspects of the agricultural value chain. These schemes cover diverse areas such as financial support, crop insurance, irrigation, soil health, market access, and technology dissemination. The Indian government's focus on agriculture schemes can be traced back to the early years of independence when land reforms and green revolution initiatives were launched to boost agricultural production [3]. Over time, the scope of these schemes has evolved to

encompass a broader range of areas, such as irrigation, credit access, technology adoption, market linkages, and crop insurance [4]. Kumar and Gupta's [5] paper examines government initiatives aimed at improving agricultural infrastructure in India. It provides insights into the impact of schemes on enhancing agricultural productivity and efficiency. Reddy and Rani [6] offer an in-depth analysis of various government agricultural schemes in India and their impacts on farm productivity and income. It assesses the challenges faced during the implementation of these schemes and suggests potential strategies for improvement. This paper by Chakrabarti and Singh [7] focuses on the participation of women in government agricultural schemes in India. It highlights the importance of gender-sensitive policies to promote women's empowerment in the agricultural sector. A review by Sharma and Kumar [8] provides a comprehensive assessment of the relationship between government agriculture schemes and rural livelihoods in India. It identifies the key factors influencing the success of these schemes in improving farmers' well-being. Prakash and Singh's [9] paper focuses specifically on crop insurance schemes in India. It analyzes the challenges faced by farmers in accessing crop insurance and proposes recommendations to enhance the effectiveness of these schemes.

## 2. SCHEMES RELATED TO AGRICULTURE

Agriculture holds immense significance in India, providing livelihoods to millions and contributing

substantially to the nation's economy. To address the challenges faced by farmers and promote sustainable agricultural growth, the Indian government has implemented a range of agriculture schemes. These schemes encompass diverse areas such as financial support, crop insurance, irrigation, technology adoption, and market linkages. A systematic review of these schemes provides valuable insights into their impact and effectiveness. Studies like Reddy and Rani [6] and Sharma and Kumar [8] critically analyze the schemes' outcomes, evaluating their contributions to farm productivity, income enhancement, and rural livelihoods. Other research papers like Prakash and Singh [9] focus on specific schemes, such as crop insurance, identifying challenges and offering recommendations for improvement.

### 3. PRADHAN MANTRI KISAN SAMMAN NIDHI (PM-KISAN)

It is one of the flagship government agriculture schemes in India, launched in 2019. It aims to provide direct income support to small and marginal farmers, recognizing the importance of ensuring financial stability for farmers in the face of various challenges. Under the PM-KISAN scheme, eligible farmers receive Rs. 6,000 per year, paid in three equal instalments of Rs. 2,000 each directly into their bank accounts. The scheme's objective is to supplement farmers' income, meet their investment needs, and enable

them to adopt modern agricultural practices without the burden of debt. By providing a stable source of income, PM-KISAN seeks to reduce agrarian distress and contribute to rural prosperity.

Various studies have assessed the impact of PM-KISAN on farmers' livelihoods and overall agricultural development. Reddy and Rani [6] in their review paper highlighted the positive impact of PM-KISAN on income enhancement and reduced financial vulnerabilities among farmers. Sharma and Kumar [8] emphasized that the direct cash transfers under PM-KISAN have improved farmers' economic conditions and supported their investment in agricultural inputs. The PM-KISAN scheme has been instrumental in transforming the lives of small and marginal farmers, promoting social inclusivity, and advancing the goal of doubling farmers' income. However, there have been challenges in reaching the intended beneficiaries, and some farmers have faced exclusion from the scheme due to data discrepancies and administrative issues Mishra et al. [10]. Despite these challenges, PM-KISAN remains a vital instrument in the government's efforts to address income disparities among farmers and promote sustainable agricultural growth. Future research and policy evaluations can further enhance the scheme's effectiveness and ensure its inclusive implementation.

**Table 1. Government schemes in agriculture**

Schemes	Year	Benefits
Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)	2019	Direct income support of Rs. 6,000 per year to eligible farmers in three equal instalments, helping improve their financial stability.
Soil Health Card Scheme	2015	Provides soil health cards to farmers with personalized soil nutrient recommendations, aiding in balanced fertilization and improved crop yields.
Pradhan Mantri Fasal Bima Yojana (PMFBY)	2016	Offers crop insurance coverage to farmers against yield losses due to natural calamities, pests, and diseases, reducing their risk and providing financial security.
Rashtriya Krishi Vikas Yojana (RKVY)	2007	Provides financial support for agricultural projects, promoting investments in infrastructure, technology, and research to enhance farm productivity.
National Agriculture Market (e-NAM)	2016	Establishes an online trading platform, enabling farmers to sell their produce directly to buyers across the country, improving market access and reducing intermediaries.
Paramparagat Krishi Vikas Yojana (PKVY)	2015	Promotes organic farming by providing financial assistance for the adoption of organic practices, supporting sustainable agriculture.
Kisan Credit Card (KCC) Scheme	1998	Offers farmers credit for agricultural and allied activities, ensuring timely and adequate access to affordable credit.
Pradhan Mantri Krishi	2015	Focuses on enhancing irrigation facilities and water use efficiency,

Sinchai Yojana (PMKSY)		supporting water security for farmers.
National Food Security Mission (NFSM)	2007	Aims to increase the production of rice, wheat, and pulses, ensuring food security and price stabilization.
Blue Revolution	2015	Boosts the fisheries sector by promoting sustainable aquaculture, fish production, and fishery-related activities, creating employment and income opportunities for coastal communities.

#### 4. SOIL HEALTH CARD SCHEME

The Soil Health Card Scheme is a crucial government agriculture initiative in India aimed at promoting sustainable and productive farming practices. Launched in 2015, the scheme seeks to assess the nutrient status of agricultural soils and provide personalized recommendations to farmers, enabling them to make informed decisions about fertilizer application and crop selection. Under the Soil Health Card Scheme, soil samples are collected from farmers' fields and analyzed for essential nutrients like nitrogen, phosphorus, potassium, and micronutrients. Based on the soil analysis, farmers receive a Soil Health Card that provides detailed information about the nutrient content of their soil, along with customized recommendations for appropriate fertilizers and soil amendments. This helps farmers optimize fertilizer use, reduce input costs, and improve crop yields while maintaining soil health.

Several studies have evaluated the impact of the Soil Health Card Scheme on agricultural productivity and sustainability. Kumar et al. [11] in their research paper found that farmers who received soil health cards demonstrated improved nutrient management practices, leading to enhanced crop yields and reduced environmental impact. Singh and Singh [12] reported that the scheme has increased farmers' awareness about soil health and nutrient management practices. The Soil Health Card Scheme has played a crucial role in promoting sustainable agriculture and the efficient use of resources. However, challenges related to the timely distribution of soil health cards and limited awareness among farmers persist Joshi et al. [13]. Continuous evaluation and refinement of the scheme are necessary to address these issues and further enhance its effectiveness in supporting soil conservation and agricultural productivity.

#### 5. PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)

It is a significant agricultural insurance scheme launched in India in 2016. The scheme aims to

provide crop insurance coverage to farmers against yield losses caused by various factors, including natural calamities, pests, and diseases. PMFBY aims to reduce the financial burden on farmers during crop failures and provide them with a safety net to manage risk and uncertainty in agriculture. Under PMFBY, farmers pay a nominal premium, and the remaining premium is shared equally by the central and state governments. The scheme offers comprehensive coverage, including pre-sowing to post-harvest risks, and allows farmers to insure multiple crops. Claims are settled based on crop loss assessments conducted by government-appointed agencies, ensuring transparency and timely compensation.

Several research studies have examined the impact of PMFBY on farmers' resilience and income stability. Jain et al. [14] reported that PMFBY has increased farmers' confidence in adopting modern agricultural practices and has helped in reducing credit constraints faced by them. Garg and Kishore [15] highlighted that the scheme has reduced the financial vulnerability of farmers, especially during adverse climatic events.

However, some studies have also pointed out challenges in the implementation of PMFBY, such as delays in claim settlement and limited awareness among farmers [16]. Continuous monitoring and evaluation are essential to address these issues and further improve the scheme's effectiveness. PMFBY [17] has emerged as a crucial mechanism in safeguarding farmers' income and promoting sustainable agriculture. By providing a robust insurance framework, the scheme offers valuable support to farmers, encouraging them to invest in agriculture with reduced risk and increased resilience.

#### 6. RASHTRIYA KRISHI VIKAS YOJANA (RKVY)

It is a crucial agricultural development scheme launched in India in 2007. The scheme aims to accelerate agricultural growth and enhance

farmers' income by providing financial support for various agriculture-related projects and initiatives at the state level. RKVY focuses on promoting holistic and balanced agricultural development, fostering innovations, and improving agricultural infrastructure. Under RKVY, states and union territories prepare agriculture and allied sector-specific projects based on their unique needs and priorities. These projects encompass areas like crop diversification, value addition, agri-infrastructure, technology adoption, and capacity building. The central government provides financial assistance for these projects based on the approved proposals.

Several research studies have assessed the impact of RKVY on agricultural growth and rural development. Shinde and Pawar [18] reported that RKVY has led to significant improvements in crop productivity and farmers' income. Bhasme and Jadhav [19] highlighted that RKVY has played a crucial role in supporting the adoption of innovative practices and technologies in agriculture. However, some studies have pointed out challenges in the implementation of RKVY, such as delays in project approval and resource allocation Kumar et al. [11]. Continuous monitoring and evaluation are essential to overcome these challenges and ensure effective utilization of funds. RKVY [20] has emerged as a vital instrument in supporting state-level agricultural development initiatives and promoting inclusive growth in the agricultural sector. By providing financial support for diverse projects, RKVY contributes to enhancing farm productivity, fostering sustainable practices, and improving the overall well-being of farmers.

## **7. NATIONAL AGRICULTURE MARKET (e-NAM)**

It is a transformative initiative launched in India in 2016 to create a unified national electronic trading platform for agricultural commodities. The primary objective of e-NAM is to integrate agricultural markets across the country, enabling farmers to sell their produce online to buyers from different states and regions. This platform aims to promote transparent price discovery, reduce intermediaries, and improve market access for farmers.

Under e-NAM, farmers can register on the platform and list their produce with details of quality and quantity. Traders, processors, and buyers can access this information and bid for agricultural commodities. The platform facilitates

a real-time online auction process, ensuring fair prices and enhancing farmers' income.

Several research studies have examined the impact of e-NAM on agricultural marketing and farmers' welfare. Kumar et al. (2019) reported that e-NAM has led to better price realization for farmers and reduced post-harvest losses. Singh and Tripathi (2018) highlighted that e-NAM has enhanced market efficiency, increased competition, and improved price transparency. However, some studies have also pointed out challenges in the implementation of e-NAM, such as limited awareness among farmers, connectivity issues in remote areas, and resistance from traditional intermediaries Mishra et al. [10]. Continuous evaluation and refinements are necessary to address these challenges and maximize the benefits of the platform. e-NAM has emerged as a game-changer in agricultural marketing, facilitating seamless and efficient trade between farmers and buyers. By providing a transparent and technology-driven platform, e-NAM contributes to reducing market inefficiencies and empowering farmers in the marketing of their produce.

## **8. PARAMPARAGAT KRISHI VIKAS YOJANA (PKVY)**

It is a government agriculture scheme launched in India in 2015. The scheme aims to promote organic farming practices among farmers and enhance soil fertility, biodiversity, and environmental sustainability. PKVY encourages the adoption of traditional and indigenous methods of farming, reducing the dependence on synthetic fertilizers and pesticides.

Under PKVY, farmers are provided financial assistance for the adoption of organic farming practices over three years. The scheme encourages the formation of farmer clusters or groups to collectively implement organic farming methods, share knowledge, and access training and technical support. Several research studies have examined the impact of PKVY on agricultural productivity, soil health, and environmental conservation. Kumar et al. [21] reported that PKVY has resulted in improved soil health, reduced input costs, and increased crop yields. Kumar and Sharma [22] highlighted that the scheme has led to a decline in the usage of chemical fertilizers and pesticides, contributing to ecological balance.

However, some studies have pointed out challenges in the implementation of PKVY, such

as limited awareness among farmers about organic farming practices and the need for continued support and training Verma et al. [23]. Continuous evaluation and capacity building are necessary to overcome these challenges and ensure the long-term success of the scheme.

PKVY [24] has emerged as a significant initiative in promoting sustainable agriculture and environmental conservation. By encouraging organic farming practices, PKVY contributes to enhancing soil health, reducing the environmental impact of agriculture, and supporting the well-being of farmers.

### **9. KISAN CREDIT CARD (KCC)**

Kisan Credit Card (KCC) is a government financial scheme launched in India in 1998 to provide farmers with timely and adequate credit for agricultural and allied activities. The scheme aims to meet the credit needs of farmers during various agricultural operations, ensuring they have access to funds for inputs like seeds, fertilizers, pesticides, and machinery, as well as for meeting their post-harvest expenses.

Under KCC, eligible farmers are issued credit cards by financial institutions like banks, which are linked to their savings or current accounts. The credit limit on these cards is based on the farmer's landholding, crop cultivation, and repayment capacity. The scheme offers short-term and long-term credit options to cater to different agricultural requirements.

Several research studies have examined the impact of the Kisan Credit Card on agricultural productivity and rural development. Kumar and Mittal (2019) reported that KCC has led to an increase in agricultural investment and crop yields. Dey and Majumder (2021) highlighted that KCC has improved farmers' access to formal credit and reduced their dependency on informal money lenders. However, some studies have also pointed out challenges in the implementation of KCC, such as limited coverage of small and marginal farmers, delayed credit disbursement, and the need for better financial literacy among farmers Joshi et al. [13]. Continuous efforts are necessary to address these challenges and ensure that the benefits of KCC reach all eligible farmers. Kisan Credit Card has emerged as a vital tool in empowering farmers with easy and affordable access to credit. By providing financial support for agricultural activities, KCC contributes to

enhancing farm productivity, income stability, and overall rural development.

### **10. PRADHAN MANTRI KRISHI SINCHAI YOJANA (PMKSY)**

It is a significant government scheme in India launched in 2015 to improve water use efficiency and expand irrigation coverage in the agricultural sector. The primary objective of PMKSY is to achieve convergence of investments in irrigation infrastructure and ensure the integrated development of water resources for agricultural purposes.

PMKSY is implemented through various components, including the Accelerated Irrigation Benefit Programme (AIBP), Har Khet Ko Pani (HKKP), Per Drop More Crop (PDMC), and Watershed Development. The scheme focuses on increasing the area under irrigation, promoting precision irrigation techniques, and enhancing the productivity of water through efficient water management practices. Several research studies have evaluated the impact of PMKSY on agricultural productivity, water availability, and rural development. Jain and Sharma [25] reported that PMKSY has led to an expansion of irrigation facilities, resulting in increased crop production and reduced vulnerability to climate-related risks. Mukherjee and Bhowmick [26] highlighted that PMKSY has contributed to increased agricultural income and improved livelihoods of farmers.

However, some studies have also pointed out challenges in the implementation of PMKSY, such as delays in project execution, inadequate monitoring mechanisms, and the need for better inter-agency coordination Ravichandran et al. [27]. Continuous evaluation and improvements are necessary to ensure the efficient utilization of resources and maximize the benefits of the scheme. Pradhan Mantri Krishi Sinchai Yojana has emerged as a vital initiative in promoting sustainable agricultural development and water conservation. By focusing on irrigation infrastructure and water use efficiency, PMKSY [28] contributes to enhancing agricultural productivity, ensuring water availability, and supporting the overall welfare of farmers.

### **11. NATIONAL FOOD SECURITY MISSION (NFSM)**

It is a critical government initiative launched in India in 2007 to increase the production of rice,

wheat, and pulses and ensure food security and price stabilization. The primary goal of NFSM is to enhance agricultural productivity and improve the availability of essential food grains for the country's population. NFSM operates through separate missions for rice, wheat, and pulses, with each mission focusing on targeted interventions to address specific challenges in these crops. The scheme provides support to farmers through the distribution of high-yielding seeds, improved technologies, and the adoption of best agricultural practices. It also emphasizes water management and soil health to achieve sustainable and inclusive growth in food grain production. Several research studies have evaluated the impact of NFSM on agricultural productivity, food security, and farmer welfare. Kumar and Singh [29] reported that NFSM has led to increased yields and production of rice, wheat, and pulses. Kumar and Jha [30] highlighted that NFSM has contributed to reducing the country's dependence on food grain imports and improving the availability of essential food items in the market.

However, challenges have been identified in the implementation of NFSM, including the need for better targeting of beneficiaries and efficient distribution of inputs [31]. Continuous evaluation and improvements are necessary to ensure that the benefits of NFSM reach the intended beneficiaries and contribute to the country's overall food security goals. National Food Security Mission has emerged as a crucial instrument in boosting food grain production and ensuring food availability for India's population. By providing support to farmers and promoting sustainable agricultural practices, NFSM [32] contributes to food self-sufficiency and the welfare of millions of citizens.

## 12. BLUE REVOLUTION

The Blue Revolution is a transformative government initiative launched in India to harness the potential of its vast aquatic resources and promote sustainable development in the fisheries and aquaculture sector. This revolution aims to address the growing demand for fish and fishery products, generate employment opportunities, enhance fish production, and boost the income of fisherfolk and farmers engaged in aquaculture. The Blue Revolution focuses on various components, including the development of fisheries infrastructure, adoption of modern fishing practices, expansion of aquaculture activities,

and promotion of fish seed production and technology transfer. The scheme also emphasizes the conservation and sustainable management of aquatic ecosystems to ensure the long-term viability of the sector.

Several research studies have assessed the impact of the Blue Revolution on fisheries development and rural livelihoods. Ghosh et al. [33] reported that the Blue Revolution has led to increased fish production and income of fisherfolk. Patro et al. [34] highlighted that the scheme has contributed to the expansion of aquaculture and improved resource management practices. However, some studies have also pointed out challenges in the implementation of the Blue Revolution, such as inadequate credit availability, lack of technical knowledge, and environmental concerns related to aquaculture Sarkar et al. [35]. Continuous evaluation and capacity building are necessary to address these challenges and ensure the sustainable growth of the fisheries and aquaculture sector. The Blue Revolution has emerged as a vital instrument in promoting fisheries development, sustainable aquaculture practices, and the economic well-being of fishing communities. By investing in modern technologies and sustainable management approaches, the Blue Revolution [36] contributes to meeting the growing demand for fish and enhancing the sector's contribution to India's food and nutritional security [37-42].

## 13. CONCLUSION

Government agriculture schemes in India have played a crucial role in transforming the agricultural sector, empowering farmers, and ensuring food security for the nation. These schemes have been designed to address various challenges faced by farmers, such as inadequate access to credit, technology, irrigation facilities, and market linkages. Over the years, these initiatives have evolved to encompass a wide range of programs, each with specific objectives and interventions. The Green Revolution, launched in the 1960s, laid the foundation for modern agricultural practices, introducing high-yielding crop varieties and modern inputs that significantly increased agricultural productivity. Subsequent schemes like the Blue Revolution, focused on fisheries and aquaculture, and the Paramparagat Krishi Vikas Yojana (PKVY), promoting organic farming, have brought attention to other important areas of agriculture and sustainable practices. The Pradhan Mantri Fasal Bima Yojana (PMFBY) and Kisan Credit

Card (KCC) have been instrumental in providing financial security and risk management tools for farmers. The e-NAM (National Agriculture Market) has facilitated better price realization and market access for farmers, while the Soil Health Card Scheme has emphasized soil fertility and sustainable land management. The government's efforts to improve irrigation infrastructure through the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) have contributed to enhancing water use efficiency and expanding irrigation coverage. Moreover, the National Food Security Mission (NFSM) has been instrumental in increasing food grain production and ensuring food availability for the growing population.

Despite the significant progress achieved through these schemes, challenges persist, including targeting the most vulnerable farmers, ensuring timely and effective implementation, and addressing environmental concerns. Continuous monitoring, evaluation, and adaptive management are essential to optimize the impact of these initiatives. In the context of India's diverse agricultural landscape, these government schemes must be designed with a holistic and region-specific approach, considering the varied needs and challenges faced by farmers across different states and agro-climatic zones. Overall, the government agriculture schemes in India have been instrumental in driving agricultural growth, enhancing farmers' livelihoods, and ensuring food security. With continuous improvements and innovations, these schemes can contribute further to sustainable and inclusive agricultural development, ultimately transforming the lives of millions of farmers and rural communities in the country.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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