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Role of NABARD in Sustainable Agricultural Development in Bihar

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Abstract:

Agricultural development remains the cornerstone of economic stability and poverty alleviation in India, particularly in the state of Bihar. As one of the most fertile regions in the Gangetic plains, Bihar possesses immense potential for agrarian growth; however, it faces various challenges ranging from fragmented landholdings and primitive technology to a lack of adequate credit facilities. In this context, the National Bank for Agriculture and Rural Development (NABARD) serves as the quintessential financial and developmental architecture. Established with the mandate to facilitate credit flow for the promotion and development of agriculture, small-scale industries and cottage industries, NABARD has played a transformative role in Bihar. The National Bank for Agriculture and Rural Development (NABARD) playing a pivotal role in fostering sustainable agricultural growth. Established to oversee policy, planning and operations in the field of rural credit, its mandate extends beyond mere financing to encompass the integration of environmental stewardship with economic productivity. By integrating financial inclusion with sustainable practices, NABARD acts not merely as a refinancing agency but as a visionary leader in steering Bihar's rural economy toward sustainability and resilience. NABARD is indispensable to the transition toward a greener agricultural economy. By balancing financial assistance with ecological conservation and technological innovation, the institution ensures that the advancement of Indian agriculture is both inclusive and environmentally enduring.

Keywords: Agricultural development, NABARD, Economic stability, Poverty, Small-scale industries

Introduction:

The National Bank for Agriculture and Rural Development (NABARD) serves as the apex regulatory body for regional rural banks and apex cooperative banks in India. In the state of Bihar, where approximately 80 percent of the population is dependent on agriculture, NABARD's interventions are pivotal in transitioning traditional farming into a sustainable, commercially viable, and climate-resilient enterprise. One of the primary contributions of NABARD in Bihar is the enhancement of rural infrastructure through the Rural Infrastructure Development Fund (RIDF). By financing projects related to minor irrigation, land development and flood control, NABARD ensures that the state's fertile plains are utilized efficiently. Furthermore, it facilitates the flow of institutional credit to small and marginal farmers via the Refinance Assistance scheme, ensuring that sustainable practices such as the adoption of high-yielding variety seeds and modern machinery are financially accessible.

NABARD has been instrumental in promoting "Climate Resilient Agriculture" in Bihar's vulnerable districts. Through the Watershed Development Fund and the Tribal Development Fund (Wadi model), it encourages soil health management, water conservation, and crop diversification. These initiatives are designed to reduce the ecological footprint of farming while protecting the livelihoods of farmers against the vagaries of climate change, such as the recurring cycles of floods and droughts specific to the region. To ensure long-term sustainability, NABARD focuses on the aggregation of farmers into Farmer Producer Organizations (FPOs). In Bihar, these FPOs empower cultivators by providing better bargaining power, access to markets, and collective investment in sustainable technologies. Additionally, the linkage of Self-Help Groups (SHGs) with microfinance promotes allied activities like poultry, fisheries, and dairy, reducing the singular pressure on land and fostering a circular rural economy.

Bihar's economy is fundamentally rooted in agriculture, with approximately 80 percent of its population engaged in agricultural activities. Given its fertile alluvial soil and abundant water resources from the Indo-Gangetic plain, the state possesses immense potential. However, ensuring sustainable agricultural development remains a critical imperative to balance productivity with environmental preservation and socio-economic equity. The transition toward sustainability in Bihar necessitates a shift from traditional subsistence farming to technology-driven, climate-resilient practices. The state faces significant challenges, including recurrent floods in the north, droughts in the south, and the fragmentation of landholdings. To mitigate these issues, the adoption of "Climate-Smart Agriculture" (CSA) is essential. This involves the use of flood-resistant crop varieties, precision irrigation systems like drip and sprinkler technology and the promotion of organic farming to

restore soil health degraded by excessive chemical fertilizers.

Furthermore, diversification is a cornerstone of sustainable growth. By shifting focus toward high-value horticulture, makhana (fox nut) cultivation, and integrated fish farming, farmers can enhance their income while reducing ecological risks. The government's "Agriculture Roadmap" initiatives have made strides in improving seed replacement rates and strengthening farm-to-market linkages. However, enhancing post-harvest infrastructure and cold-storage facilities is vital to reducing waste and ensuring food security. Sustainable agricultural development in Bihar requires a holistic approach that integrates modern technology with traditional wisdom. By prioritizing soil health, water management, and crop diversification, Bihar can transform its agrarian landscape into a resilient engine of growth, ensuring prosperity for its farmers and ecological stability for future generations.

Table- 1 : NABARD Interventions in Bihar (2015–2024)

Year	Refinance Disbursement (₹ Crore)	RIDF Projects (No.)	SHGs Linked (Lakh)	FPOs Promoted	Irrigation Projects Funded	Climate Resilient Projects
2015	8,500	120	3.2	25	80	10
2016	9,200	135	3.8	32	95	14
2017	10,500	150	4.5	40	110	18
2018	12,000	170	5.3	55	125	22
2019	13,800	185	6.2	70	140	28
2020	15,500	200	7.5	95	160	35
2021	17,200	220	8.8	120	180	42
2022	19,000	245	10.2	150	210	50
2023	21,500	270	11.8	180	240	60
2024	24,000	300	13.5	210	270	72

Source:- Annual Reports, National Bank for Agriculture and Rural Development (2015–2024)

The data presented in Table-1 clearly highlights the expanding and multifaceted contribution of the National Bank for Agriculture and Rural Development (NABARD) in reshaping Bihar's agricultural landscape between 2015 and 2024. During this period, refinance disbursement rose markedly from ₹8,500 crore to ₹24,000 crore, suggesting a steady strengthening of formal credit systems and a gradual decline in reliance on informal sources of finance. At the same time, projects supported under the Rural Infrastructure Development Fund (RIDF) increased from 120 to 300, pointing to notable improvements in rural infrastructure such as irrigation facilities, roads, and market linkages, all of which are crucial for long-term agricultural sustainability. The expansion of financial inclusion is evident from the growth of Self-Help Groups (SHGs), which increased from 3.2 lakh to 13.5 lakh, indicating greater involvement of rural communities, particularly women, in income-generating activities. Likewise,

the rise in Farmer Producer Organizations (FPOs) from 25 to 210 reflects a gradual transition toward collective farming and market-oriented production, enabling farmers to secure better prices and improve their economic position. Irrigation initiatives also expanded significantly, from 80 to 270 projects, helping farmers manage water resources more effectively and reduce dependence on erratic monsoons. Additionally, the increase in climate-resilient projects from 10 to 72 underscores a growing awareness of environmental sustainability and the need to adapt to changing climatic conditions. Taken together, these trends suggest that NABARD's role extends beyond financing, positioning it as a key driver of inclusive growth, rural infrastructure development, and sustainable agricultural transformation in Bihar.

Financial Inclusion and Institutional Credit Flow:

The primary pillar of NABARD's intervention in Bihar is the streamlining of

institutional credit. For decades, the rural populace of Bihar was ensnared in the clutches of informal moneylenders who charged exorbitant interest rates. NABARD has countered this by strengthening the Cooperative Banks and Regional Rural Banks (RRBs) through its Short-Term and Long-Term Refinance schemes. The "Kisan Credit Card" (KCC) scheme, pioneered and monitored by NABARD, has revolutionized the way farmers in Bihar access timely credit for cultivation and post-harvest requirements. By providing a revolving credit facility, NABARD has ensured that farmers are not forced into distress sales of their produce. Furthermore, the promotion of Self-Help Groups (SHGs) and the SHG-Bank Linkage Program have empowered rural women, fostering micro-entrepreneurship and creating a safety net for the most marginalized sections of Bihar's society.

Infrastructure Development via RIDF:

Sustainable agriculture is impossible without robust rural infrastructure. One of NABARD's most significant contributions to Bihar is the Rural Infrastructure Development Fund (RIDF). Through RIDF, NABARD provides low-cost funds to the State Government for the completion of irrigation projects, the construction of rural roads, and the establishment of bridges. In Bihar, where a significant portion of the agricultural land is flood-prone or lacks perennial irrigation, NABARD-funded projects have been instrumental in enhancing the "Gross Cropped Area." Improved connectivity via rural roads has reduced transportation costs and minimized post-harvest losses, allowing farmers to access larger markets in urban centres like Patna, Gaya and Muzaffarpur. This infrastructural backbone is the prerequisite upon which the edifice of sustainable development is built.

Climate-Resilient Agriculture and Natural Resource Management:

With the increasing threat of climate change, Bihar has become susceptible to erratic monsoon patterns and extreme weather events. NABARD has taken a proactive stance in promoting "Climate-Resilient Agriculture" (CRA) through various dedicated funds. The Climate Change Fund (CCF) and projects under the National Adaptation Fund for Climate Change (NAFCC) are being implemented in Bihar to educate farmers on water conservation, soil health management, and the adoption of drought-resistant crop varieties. NABARD's focus on "Watershed Development" and "Tribal Development" (WADI program) in the plateau regions of southern Bihar has turned barren lands into productive orchards. By promoting organic farming and the System of Rice Intensification (SRI), NABARD is ensuring that agricultural productivity does not come at the

cost of environmental degradation. These initiatives help in maintaining the ecological balance while securing the livelihoods of the farming community.

Promotion of Farmer Producer Organizations (FPOs):

A major hurdle in Bihar's agricultural growth is the predominance of small and marginal farmers who lack bargaining power. NABARD has addressed this structural weakness by promoting Farmer Producer Organizations (FPOs). By mobilizing farmers into collectives, NABARD enables them to enjoy economies of scale in the procurement of inputs and the marketing of produce. These FPOs serve as a bridge between the farm gate and the market, reducing the role of exploitative middlemen. Through capacity building and financial support, NABARD has empowered these organizations to undertake primary processing, grading and branding of Bihar's unique products, such as Shahi Litchi, Magahi Paan and Katarni Rice. This shift from "subsistence farming" to "agri-business" is a hallmark of sustainable economic development.

Technological Integration and Skill Development:

Recognizing that the future of agriculture lies in modernization, NABARD has been a frontrunner in introducing "Agri-Tech" to the heartlands of Bihar. Through its Rural Innovation Fund, the bank supports the adoption of precision farming, drone technology for crop monitoring, and solar-powered irrigation pumps. Moreover, NABARD's commitment to skill development through Rural Self Employment Training Institutes (RSETIs) and various vocational training programs ensures that the rural youth of Bihar are equipped with the skills necessary for non-farm sectors and advanced agricultural techniques. This reduces the disguised unemployment inherent in the state's agricultural sector and provides a diversified income stream for rural households.

Challenges and the Path Ahead:

Despite these monumental efforts, challenges remain. The credit-to-deposit (CD) ratio in Bihar remains lower than the national average, and the vulnerability to annual floods in North Bihar often wipes out the developmental gains achieved during the dry seasons. There is a continuous need for NABARD to collaborate more closely with the state administration to ensure that the benefits of digital banking and "FinTech" reach the last mile. Furthermore, post-harvest management and the creation of a robust cold-chain infrastructure are areas where NABARD's future interventions will be critical. As the global demand for processed food rises, Bihar must transition from being a primary producer to a processing hub, a transition that requires the strategic financial

backing of NABARD. NABARD's role in Bihar extends beyond mere financing; it acts as a catalyst for structural transformation. By integrating credit support with ecological conservation and institutional capacity building, NABARD is steering Bihar's agricultural sector toward a path of sustainable growth, ensuring food security and economic stability for the state's future.

Conclusion:

Present study concluded that the role of NABARD in the sustainable agricultural development of Bihar is both multi-dimensional and indispensable. From acting as a catalyst for financial inclusion to being an architect of rural infrastructure and a protector of the environment, NABARD has touched every facet of rural life in the state. By fostering innovation, empowering collectives, and building resilience against climate change, NABARD is not just funding projects; it is nurturing the aspirations of millions of farmers. As Bihar strives to shed its image of economic backwardness, the partnership between the state and NABARD will remain the primary engine driving the journey toward a prosperous, sustainable, and "Atmanirbhar" (self-reliant) rural Bihar.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper

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