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KALIA Scheme in Odisha: An Analysis of Agricultural Performance Using Paddy as a Proxy Indicator

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Abstract
Agriculture plays a significant role in Odisha's rural economic development. In 2018 Odisha government introduced an innovative program known as the KALIA Scheme. Providing direct income support, the scheme aims to enhance farmers' income in agricultural sector. To assess agricultural performance the study examines trends in paddy production and yield over the periods 2013-14 to 2022-23. The study based on secondary data, data collected from various sources such as the Odisha Economic Survey 2019-20, government reports, and existing literature. The discussion highlights that paddy production and yield exhibit an overall increasing trend; fluctuations persist year to year. While the scheme has contributed to increasing agricultural production, external factors such as climatic variability and structural factors affect outcomes. After implementation of the scheme, it reflects more stability in agricultural performance. The study concludes that while the KALIA Scheme has contributed to inclusive agricultural development by strengthening agricultural productivity, sustainable growth requires more development in irrigation, technological adoption, and risk mitigation strategies.

Keywords: KALIA Scheme, Paddy Production, Agricultural Productivity, Direct Benefit Transfer, Crop Yield Analysis.

Introduction

In India, agriculture plays a significant role in the country's socio-economic development. Employing 58% of the population, it provides a major source of livelihood support for a large section of population. Paddy is the principal crop, and it contributes significantly to food security and farmers' income. However, agricultural output depends on monsoon conditions. To tackle this type of problem government has initiated various welfare schemes aimed at supporting farmers. One such initiative is the KALIA (Krushak Assistance Livelihood and Income Augmentation) Scheme, which was launched by the Government of Odisha in 2018. The scheme aims to provide direct income support to small and marginalized farmers.
The components and benefits of the KALIA scheme include.

1. Support to cultivators for cultivation: 30 lakh small and marginal farmers will be provided RS 10,000/- per family as assistance for cultivation. Each family will get RS 5000/- separately in the kharif and Rabi seasons for inputs such as seeds, fertilizers, pesticides, etc.
2. Livelihood support for landless agricultural households: RS 12,500/- to ten lakh landless agricultural households for livelihood activities including goat rearing units, poultry farming, fishery kits for fishe-

rmen, mushroom cultivation, beekeeping, etc.

3. Financial assistance to vulnerable agricultural households; -Financial assistance of RS 10,000/- per family per year to those who are old, disabled, and unable to take up cultivation.
4. Life insurance for cultivators and landless agricultural households; -Life insurance of two lakhs and additional personal accident coverage of two lakhs in a very nominal premium of Rs 330/-, out of which the state government will bear 50% (Rs 165/-) to all small and marginalized farmers and landless agricultural households.
5. Free crop loan to cultivators and agricultural households; - Annual free crop loan of RS 50,000/- at zero interest.

Objective of the study

a. To examine agricultural outcomes using paddy as a representative crop.
b. To assess the role of the KALIA scheme in agricultural productivity.
c. To analses the trend of the paddy production and yield (2013-14 to 2022-23).

Literature Review

1-Ahya, Misra, Ghadai and Parida: (2019) Kalia Scheme: Contours prospects and challenges for agricultural productivity, international journal of Innovative Technology and Exploring Engineering. Nikita Ahya et al. in this article analyze how the government's Kalia scheme provides financial assistance for improving productivity in agriculture and to improve the conditions of the farmers, particularly the marginal farmers. This study demonstrates that irrigation and appropriate input can impact improved productivity. The study highlights the implication of the KALIA scheme in terms of raising the fiscal deficit and affecting the financial status of the state. In their study, they also show how the scheme was launched with a political overtone. The study indicates that irrigation and proper use of inputs can positively influence productivity. They conclude that cash transfer under the scheme ensures the acquisition of inputs for improving agricultural productivity. It is short-term relief for farmers' suffering, while a long-term solution is required for the long run.

2-Gourav (2019) Augmenting agrarian livelihood in the time of crisis: A baseline for KALIA, Nabakrushna Choudhary Centre for Development study. Sarthak Gourav, in this article, analyses the framework for the evaluation of the KALIA scheme. His research utilized comprehensive data from a situation assessment survey of agricultural households (2012-13) and the agricultural census (2015-16) to understand the patterns of operational holdings in the state and to generate a baseline of KALIA to examine the scope of the augmentation program. This study highlights that the marginal and small farmers in Odisha receive very low returns from agricultural activity. Financial assistance under the KALIA scheme, though legitimate as a temporary relief, may not be sufficient to create a sustainable livelihood impact.

3-Hoda, Gulati, Wardhan, & Rajkhowa (2021). Diverse agricultural growth in Odisha: Revitalizing Indian agriculture and boosting farmer Incomes, 247-278. Anwarul Hoda et al.in this book chapter, "Drivers of agricultural growth in Odisha" emphasizes on the importance of agriculture in Odisha. They describe the significant elements for power and agricultural development, such as irrigation and the roads' arrangement of agricultural production in Odisha, such as oilseeds, food grains, vegetables, fisheries, and livestock. In this article they study drivers of agricultural development based on environmental standards. This study conclude that crop husbandry, animal husbandry, infrastructure development, fisheries, and

processing infrastructure are important tools to entitle Odisha to achieve stable and strong agricultural growth by increasing the income of small and marginal farmers.

4-Amarjothi (2024) Assessing the Impact of PM-KISAN on Agricultural Households in Tamil Nadu. Zibaldone Estudios Italianos. This study investigates the impact of the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme on agricultural households in Tamil Nadu. The scheme was introduced to provide financial support to the small and marginal farmers in Tamil Nadu. It aims to alleviate poverty and increase rural livelihoods. This study highlights the importance of the PM-KISAN scheme for rural development and particularly its important steps for improving the social and financial well-being of farmers.

5- Anuradha & Goud (2023), Assessment of the Farmer Support Initiative Program in Telengana State - A Case of Mission Kakatiya and Rythu Bandhu, Advances in Geographical and Environmental Sciences. T Anuradha et al. In this book they describe the positive impact of these schemes. Mission Kakatiya is focusing on soil fertility, crop productivity, and groundwater level. This scheme has contributed to employment generation. In the Rythu Bandhu scheme, a significant percentage of farmers benefit, and it is designed to support the investment of farmers. Mission Kakatiya has led to a better improvement in agricultural conditions, such as better soil fertility and better water availability. The Rythu Bandhu scheme helps a huge number of farmers, ensuring direct financial support for agricultural investment.

Methodology

This study adopts a descriptive research method. Using secondary data, this study demonstrated the agricultural performance. Data have been collected from:

Directorate of Agriculture and Food Production, Odisha. A major source of information is the Economic Survey of Odisha 2023–24. With descriptive analysis, the study evaluates growth rates and absolute changes in paddy production and yield (2013-14 to 2022-23). Paddy used as a proxy indicator due to its dominance in cropping pattern.

Result and Discussion

1- Year to year growth of paddy production in Odisha (2013-14 to 2022-23)

Year	Production	Absolute change Lakh MT	Growth Rate (%)
2013-14	115.35	-	-
2014-15	149.16	33.81	29.30
2015-16	89.02	-60.14	-40.30
2016-17	148.40	59.38	66.70
2017-18	99.26	-49.14	-33.10
2018-19	117.18	17.92	18.05
2019-20	147.80	30.62	26.13
2020-21	166.65	18.85	12.75
2021-22	140.77	-25.88	-15.53
2022-23	180.80	40.03	28.44

Source-Directorate of Agriculture &Food Production, Odisha, Economic Survey Reports

Table-2
Year to year Growth of Paddy Yield in Odisha (2013-14 to 2022-23)

Year	Yield(kg/ha)	Absolute Change (kg/ha)	Growth Rate (%)
2013-14	1,955	-	-
2014-15	2,397	442	22.6%
2015-16	1,464	-933	-38.93
2016-17	2,372	908	62.02
2017-18	1,589	-783	-33.01
2018-19	1,805	216	13.59
2019-20	2,253	448	24.82
2020-21	2492	239	10.61
2021-22	2,116	-376	-15.08
2022-23	2,724	608	28.73

Source -Directorate of Agriculture &Food Production, Odisha, Economic Survey Reports

Discussion

The analysis reveals that paddy production increased from 115.35 lakh matric tone in 2013-14 to 180.80 lakh metric tonnes in 2022-23. Similarly yield increased from 1,955kg/ha to 2,724kg/ha, which reflects the improvement in productivity. The similarity in production and yield indicates that productivity plays a significant role in output changes. It shows overall growth in paddy production and yield, which indicates a positive trend in agricultural productivity, however it highlights instability by showing fluctuations across years. The fluctuation shows the agricultural growth remains sensitive to external factors such as climate variability and technological adoption.

Following the implementation of KALIA Scheme by Odisha Government in 2018, relatively stable growth is observed in subsequent years, it suggests a positive role and financial help to support in agricultural activities. From 2018-19 to 2020-21 shows positive growth in both production and yield. After suggesting the scheme may have enabled the farmer to invest in agriculture more effectively. This indicates the supportive role of the KALIA scheme in agricultural productivity.

Though, decline observe in 2021-22, which demonstrate that financial support alone is not sufficient for sustainable growth, it needs complementary measures such as improved irrigation system and developed risk management.

In broader sense, agricultural performance improvement is associated with increased rural livelihood security, rural households can positively contribute towards national economic growth.

Over all the findings shows that the KALIA scheme plays a supportive role in improving agricultural growth and achieving long-term stability, though poverty is not directly measured, improvement in agricultural productivity enhance farmers' incomes and livelihood security. This observed improvement in production and yield shows a positive contribution to rural economic well-being.

Conclusion

To conclude the study highlights that agricultural productivity has improved over years, although instability remains. By using paddy as a representative crop, the study indicates that the KALIA Scheme has played a significant role in enhancing productivity and increasing farmers' income. However

sustainable agricultural development requires more development in irrigation, climate resilient practices and infrastructure improvement. Policy interventions must focus on stability in agricultural income despite only on increasing outputs.

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