

Development of Organic Rice Farming in the Amohalo Rice Field Area, Sub-district Baruga, District Baruga

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Abstract

This study aims to analyze the development of organic rice farming in the Amohalo rice field area, Baruga Village, Baruga District, and to identify the factors influencing its development. The research was conducted from October 2025 to February 2026. A descriptive qualitative method was employed in this study. The research location was selected purposively because the Amohalo rice field area is one of the centers for organic rice development in Kendari City. Respondents were determined using purposive sampling, consisting of organic rice farmers, farmer group leaders, community leaders, agricultural extension officers, officials from the Kendari City Agriculture Office, representatives from Bank Indonesia Southeast Sulawesi, and consumers of organic rice. Data used in this study included primary data obtained through observation and interviews, as well as secondary data collected from relevant institutions and literature sources. The results show that organic rice farming in the Amohalo rice field area has developed positively, indicated by the increasing implementation of organic cultivation practices, strengthened farmer institutions, and support from government and related institutions. The development of organic rice farming is influenced by several factors, including market access, cultivation technology, availability of production inputs, policy support, extension services, farmer institutions, transportation, and capital availability. Strengthening farmer capacity and continuous institutional support are needed to further enhance the sustainability of organic rice farming in the region.

Keywords: organic rice, Farming development, Organic agriculture.

INTRODUCTION

Indonesia is widely recognized as an agrarian country with substantial potential for agricultural development due to its tropical climate and fertile land resources. The agricultural sector plays a vital role in national development, particularly in ensuring food security and improving community welfare, considering that approximately 40% of Indonesia's population is employed in this sector (Pinem et al., 2020). In recent years, agricultural practices have increasingly shifted toward the concept of sustainable agriculture, which emphasizes a balance between environmental, social, and economic aspects in order to maintain long-term agricultural productivity without degrading natural resources (Pirngadi & Rahmawaty, 2022).

One form of sustainable agriculture implementation is the development of organic farming systems. Organic agriculture in Indonesia has continued to expand alongside growing public awareness of health and environmental sustainability. Data from the Indonesian Organic Agriculture Statistics published by the Indonesian Organic Alliance indicate that organic farming development has consistently increased across various commodities and production areas. In addition to providing ecological benefits, organic farming also has the potential to improve farmers' welfare through higher product market values when supported by adequate institutional frameworks and market access (AOI, 2017).

Organic rice has become one of the strategic commodities in the development of organic agriculture in Indonesia because rice is the staple food for the majority of the population. Nearly 98.35% of households in Indonesia consume rice, making the development of organic rice production essential to meet the demand for healthier and environmentally friendly food products. The government has also implemented various initiatives to support the development of organic agriculture, one of which is the *Go Organic* program aimed at increasing production and the adoption of organic farming systems among farmers.

Several studies have shown that although the productivity of organic rice farming is often lower than that of conventional rice farming, the income earned by organic farmers tends to be higher due to premium market prices. Research conducted in Pringsewu Regency found that the income from organic rice farming was approximately IDR 7.13 million/ha higher than that of non-organic rice farming (Nurhidayati et al., 2021). Other studies also revealed that organic rice farming demonstrates competitive income levels and R/C ratios compared to conventional cultivation systems (Anggita & Suprehatin, 2020; Wiranti et al., 2022). Furthermore, the increasing public awareness of healthy lifestyles has also driven demand for organic rice, as it is considered safer and nutritionally superior (Suryani & Sumarwan, 2020; Widyaningsih et al., 2021).



At the regional level, organic rice development has also been implemented in Kendari, particularly in the Amohalo Rice Field Area, Baruga Subdistrict. The Kendari City Government has developed the area as an organic rice production center covering approximately 337 hectares through various support programs, including the provision of organic seeds, natural fertilizers, and agricultural machinery assistance. These programs are also accompanied by extension services and technical assistance activities aimed at improving farmers' capacity to implement organic cultivation systems (Antarasultra.com, 2023). Nevertheless, data from the Kendari City Agriculture Office indicate that organic rice production declined from 2,329.73 tons in 2022 to 2,211.85 tons in 2023, indicating dynamic challenges in the development of organic rice farming in the area.

The development of organic rice farming is fundamentally influenced by various factors, including cultivation techniques, the use of organic inputs, institutional support, and government policies. However, in practice, the development of organic rice farming at the farmer level still faces several challenges, such as production fluctuations, higher labor requirements, and limited market access. Therefore, this study aims to analyze the development of organic rice farming in the Amohalo Rice Field Area and to identify the driving and inhibiting factors affecting its development.

METHOD

This research was conducted in the Amohalo Rice Field Area, Baruga Subdistrict, Baruga District, Kendari. The research location was selected purposively on the consideration that the area is one of the regions implementing organic rice farming in Kendari City. The study was carried out from October 2025 to February 2026.

The data used in this study consisted of primary and secondary data. Primary data were obtained through direct field observations and interviews with respondents involved in organic rice farming activities. The respondents included organic rice farmers, farmer group leaders, community leaders, agricultural extension officers, staff of the Kendari City Agriculture Office, representatives of Bank Indonesia Southeast Sulawesi, and organic rice consumers. Respondents were selected using a purposive sampling technique, in which participants were intentionally chosen based on their relevance and ability to provide information related to the research objectives.

Secondary data were obtained from various sources, including the Central Statistics Agency (BPS), the Kendari City Agriculture Office, as well as literature and documents related to the study. Data collection techniques included observation, interviews, and documentation.



The data analysis method used in this research was descriptive qualitative analysis. This analysis was employed to describe and explain the development of organic rice farming in the study area and to identify the factors influencing its development. The collected data were systematically analyzed to obtain a comprehensive understanding of the conditions and development of organic rice farming in the Amohalo Rice Field Area.

RESULTS AND DISCUSSION

General Description of Informants

The identity and characteristics of farmers can be observed through several aspects, including age, educational level, farming experience, number of family dependents, and land area managed. Farmers generally come from various age groups and educational backgrounds, with farming experience acquired either through hereditary practices or self-learning. These factors are interrelated and provide an overview of the farmers' socio-economic conditions as well as their capacity to manage farming activities sustainably.

1. Age of Informants

Age is an important aspect of respondent characteristics because it influences physical capability, experience, and decision-making in managing farming activities. Farmers within productive age groups generally possess extensive experience in agricultural activities, enabling them to optimize cultivation practices and farm management based on accumulated knowledge.

Table 1. Age Characteristics of Organic Rice Farming Respondents

No.	Age (Year)	Number of Respondents	Percentage (%)
1.	Non-productive (0-14)	0	0
2.	Productive (15- 64)	14	82,35
3.	Non-productive (>65)	3	17,65
	Jumlah	17	100

Table 1 shows that the majority of organic rice farmers in the Amohalo Rice Field Area were within the productive age group (15–64 years), accounting for 14 respondents (82.35%). This indicates that farming activities are still dominated by farmers with good working capacity. Meanwhile, farmers aged ≥ 65 years accounted for 3 respondents (17.65%), who remain actively involved in farming activities to support household economic needs.

2. Organic Rice Farming Experience

Farming experience reflects the length of time a farmer has been involved in agricultural production activities, which influences technical skills, decision-making, and farm management efficiency. Farmers with longer farming experience tend to possess more mature operational capabilities and stronger understanding of production practices and risk management, thereby potentially increasing farm productivity and income (Nurkholis et al., 2025).

Table 2. Organic Rice Farming Experience of Respondents

No.	Farming Experience (Years)	Number of Respondents	Percentage (%)
1.	10-19	8	61.54
2.	20-29	2	15.38
3.	≥30	3	23.08
	Jumlah	13	100

Table 2 indicates that most respondents had 10–19 years of experience in organic rice farming, totaling 8 respondents (61.54%). Respondents with 20–29 years of experience accounted for 2 respondents (15.38%), while those with ≥30 years of experience accounted for 3 respondents (23.08%). This finding suggests that some farmers have extensive experience in managing organic rice farming activities.

3. Number of Family Dependents

The number of family dependents is an important social characteristic that reflects both the economic burden and labor resources within farming households. A larger number of dependents is often associated with greater household needs, encouraging farming families to optimize agricultural activities or seek additional sources of income to meet these demands (Asfiati & Sugiarti, 2021).

Table 3. Number of Family Dependents of Organic Rice Farmers

No.	Number of Family Dependents	Number of Respondents	Percentage (%)
1.	1	2	13.33
2.	2	8	53.33
3.	3	5	33.34
	Jumlah	15	100

Table 3 shows that the majority of respondents had two family dependents, accounting for 8 respondents (53.33%). Meanwhile, respondents with three dependents totaled 5 respondents (33.34%), while those with one dependent accounted for 2 respondents (13.33%).

4. Educational Level

Educational level is one of the key indicators in describing the quality of farmers' human resources, as it is related to individuals' ability to receive information, understand innovations, and make decisions in farm management. Pujiharti et al. (2019) stated that farmers' educational level influences their ability to adopt agricultural technologies, manage production inputs, and respond rationally to changes in the farming environment.

Table 4. Educational Level of Organic Rice Farming Respondents

No.	Educational Level	Number of Respondents	Percentage (%)
1.	No formal education	4	25.00
2.	Senior high school	9	55.15
3.	Bachelor's Degree	4	19.85
	Jumlah	17	100

Table 4 demonstrates that the majority of respondents had completed senior high school education, accounting for 9 respondents (55.15%). Meanwhile, respondents without formal education totaled 4 respondents (25.00%), while those holding a bachelor's degree accounted for 4 respondents (19.85%). These findings indicate variations in educational levels among organic rice farmers in the study area.

5. Land Area

Land area is one of the primary production factors determining the scale and performance of farming activities. Saptana et al. (2016) explained that land area directly affects production capacity and farming efficiency, where larger land ownership provides greater opportunities to increase production and income. In the context of organic rice farming, land area is also associated with farmers' ability to apply technology, manage production inputs, and maintain farming sustainability.

Table 5. Land Area of Organic Rice Farming

No.	Land Area (Ha)	Number of Respondents	Percentage (%)
1.	1	5	43.33



2.	2	7	56.67
	Jumlah	12	100

Table 5 indicates that the majority of respondents managed 2 hectares of land, accounting for 7 respondents (56.67%), while 5 respondents (43.33%) managed 1 hectare. This finding shows that organic rice farming in the Amohalo Rice Field Area is generally operated on a small- to medium-scale basis.

Development of Organic Rice Farming in the Amohalo Rice Field Area

The development of organic rice farming in the Amohalo Rice Field Area can be analyzed using Moller's Farm Transformation Theory, which explains that changes in farming systems are responses to environmental, social, economic, and institutional dynamics. Such transformation does not always indicate progress toward a more modern or sustainable system; rather, it may experience directional changes, stagnation, or even reversion to previous systems when supporting conditions are inadequate. Therefore, farm transformation is dynamic and strongly influenced by local contexts.

Conditions in the Amohalo Rice Field Area indicate that the transition from conventional rice farming to organic rice farming was initially driven by market opportunities and efforts to implement more environmentally friendly cultivation systems. However, over time, the implementation of organic farming systems has not always been consistent due to several factors, including limited capital, higher labor requirements, and restricted market access. Consequently, some farmers returned to conventional rice cultivation as an adjustment to economic considerations and business sustainability.

This development can also be explained using Theodore Levitt's Product Life Cycle Theory, which categorizes business development into four stages: introduction, growth, maturity, and decline. Based on the research findings, organic rice farming in the Amohalo Rice Field Area has passed the introduction and early growth stages but has not yet reached a stable maturity stage. This condition is reflected in the decreasing number of farmers consistently implementing organic cultivation systems, the reduction in cultivated land area, and fluctuating productivity over recent planting seasons.

1. Introduction Stage

The introduction stage of rice farming in the Amohalo Rice Field Area began with wetland rice farming activities that had existed since approximately 1960–1970. During the initial period, the cultivation system was still traditional, relying on local knowledge and community-based





mutual cooperation labor systems. Cropping patterns during this period were highly dependent on rainy seasons due to limited irrigation infrastructure.

The development of rice fields changed after the Amohalo area was transferred to the Kendari City Government in 2001, enabling communities to manage the land more intensively. During this period, conventional farming systems began to be implemented through the use of chemical fertilizers and synthetic pesticides to increase production. However, over time, the use of chemical inputs negatively affected soil fertility and increased production costs, encouraging farmers to adopt more sustainable farming systems.

At the initial stage of organic rice development, production remained limited and most harvests were marketed locally. Initial support for agricultural development in the area was provided by the local government through production input assistance and technical guidance from agricultural extension officers and related institutions. Nevertheless, infrastructure and distribution access remained relatively limited at this stage, resulting in suboptimal farm development.

2. Growth Stage

The growth stage of organic rice farming in the Amohalo Rice Field Area began to emerge in 2021 through mentoring programs and technical training for farmers. During this stage, farmers started implementing organic cultivation systems by utilizing organic fertilizers, botanical pesticides, and environmentally friendly soil management techniques. Demonstration plots became the primary learning medium, allowing farmers to directly observe differences between conventional and organic farming systems.

This development was also supported by various stakeholders, including the Kendari City Agriculture Office, Bank Indonesia Southeast Sulawesi, and agricultural extension officers who provided technical and managerial assistance to farmers. Such support included agricultural machinery assistance, organic farming training, and the implementation of ecofarming and digital farming concepts to improve land management efficiency.

During this stage, rice productivity in the Amohalo area experienced a significant increase, reaching approximately 9.6 tons per hectare in 2023. In addition, strengthened farmer group institutions and the presence of regular buyers from government agencies provided market certainty for organic rice products produced by farmers.

3. Stagnation and Decline Stage

Despite experiencing growth during the initial phase, the development of organic rice farming in the Amohalo Rice Field Area began to show signs of stagnation from 2022 until the research period in 2025. This condition was characterized by a declining number of farmers





consistently cultivating organic rice and a reduction in land area managed under organic farming systems.

Several factors contributed to this condition, including limited capital, more labor-intensive farming requirements, and high production costs associated with organic farming systems. In addition, the relatively more complex cultivation process compared to conventional systems caused some farmers to return to using chemical fertilizers and pesticides, which were considered more practical and capable of producing faster results.

Organic rice production during the last planting season prior to the study was recorded at approximately ± 3 tons of unhusked rice per planting season, lower than production levels achieved during the previous growth phase. The land area managed organically in 2025 was also recorded at approximately ± 20 hectares, smaller than during previous periods when the number of active farmers was higher.

These conditions indicate that the development of organic rice farming in the Amohalo Rice Field Area is currently in a stagnation phase leading toward decline. Without policy support, institutional strengthening, and broader stable market access, the sustainability of the organic rice farming system in the area may continue to decline in the future.

Driving and Inhibiting Factors of Organic Rice Farming

The development of organic rice farming in the Amohalo Rice Field Area is influenced by various factors that either support or hinder farming sustainability. Driving factors strengthen farming development, whereas inhibiting factors become obstacles that must be addressed to ensure sustainable farming activities.

1. Driving Factors of Organic Rice Farming

Several factors encouraging the development of organic rice farming in the Amohalo Rice Field Area include:

1. Facilitated market access
2. Implementation of cultivation technology
3. Utilization of organic production inputs
4. Policy support
5. Agricultural extension activities
6. Utilization of farmer group institutions
7. Harvest distribution support
8. Ease of access to capital





2. Inhibiting Factors of Organic Rice Farming

In addition to driving factors, several constraints hinder the development of organic rice farming, including:

1. Limited market access
2. Suboptimal technology implementation
3. Limited availability of production inputs
4. Price and market uncertainty
5. Incomplete extension assistance
6. Underutilized institutional roles
7. Limited distribution reach of harvested products
8. Insufficient capital availability

CONCLUSION

The conclusion of this study indicates that development of organic rice farming in the Amohalo Rice Field Area has undergone several stages, namely the introduction, growth, and stagnation–decline phases. At present, organic rice farming in the area has entered a decline stage, as indicated by the decreasing number of active farmers, the reduction of cultivated land area, and the tendency of many farmers to return to conventional farming systems. The development of organic rice farming is influenced by various driving and inhibiting factors. The driving factors include facilitated market access, the implementation of cultivation technology, the use of organic production inputs, policy support, extension activities, the utilization of farmer group institutions, harvest distribution support, and easier access to capital. Meanwhile, the inhibiting factors include limited market access, suboptimal technology implementation, limited availability of production inputs, price and market uncertainty, inadequate extension assistance, underutilized institutional roles, limited distribution networks, and insufficient capital availability.

Based on the findings of this study, several recommendations can be proposed. Organic rice farmers in the Amohalo Rice Field Area are expected to continuously develop innovations in cultivation technology, management, and marketing, since the sustainability of farming activities largely depends on the ability to innovate and adapt to changing conditions. Agricultural extension officers are encouraged to provide more intensive and modern assistance methods that can stimulate farmers' creativity and motivation to continue organic farming practices. In addition, the Kendari City Agriculture Office and related institutions are expected to strengthen their commitment to supporting farmers through capacity-building programs, continuous





technical assistance, and sustainable stakeholder collaboration. Future researchers are also recommended to conduct quantitative studies on the driving and inhibiting factors affecting the development of organic rice farming, as well as to formulate comprehensive development models for sustainable organic agriculture.

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