

MAPPING IDEA & LITERATURE FORMAT | RESEARCH ARTICLE

# Innovative Strategies in Agricultural Land Management Owned by the KSB Agriculture Office to Increase Regional Original Income

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## ARTICLE HISTORY

**Received:** September 19, 2025

**Revised:** January 18, 2026

**Accepted:** February 01, 2026

## DOI

<https://doi.org/10.52970/grmilf.v6i2.1752>

## ABSTRACT

State-owned agricultural land serves as a strategic asset for local governments in enhancing local revenue (PAD). Nevertheless, empirical investigations that connect innovative land management strategies with the optimization of PAD remain scarce in Indonesia. This study seeks to identify and analyze innovative strategies employed in the management of agricultural land by the West Sumbawa Regency Agriculture Office (KSB) and evaluate their contribution to PAD. A descriptive qualitative research design was employed, utilizing purposive sampling techniques across five strategic agricultural locations. Data collection was conducted through semi-structured interviews, field observations, and document analysis of PAD reports from 2019 to 2023. Thematic analysis was performed using NVivo, with triangulation employed to ensure validity. Three principal strategies were identified: (1) the adoption of high-productivity drought-tolerant varieties (VUB) and drip irrigation, which increased rice productivity by 18%; (2) crop diversification incorporating horticulture, which enhanced agricultural net income by 25%; and (3) public-private partnership marketing, which stabilized commodity prices and reduced income volatility. These innovative land management strategies significantly contribute to the growth of PAD in KSB. The findings provide a replicable model for other regions, with implications for sustainable agricultural policies and local economic development.

**Keywords:** Agricultural Innovation, Public Asset Management, Regional Revenue, West Sumbawa, Sustainable Agriculture.

## I. Introduction

Agriculture constitutes a strategic sector with a pivotal role in the economic development of regions in Indonesia, particularly in areas with a robust agrarian foundation, such as West Sumbawa Regency (KSB). KSB, characterized by its abundant natural resources, possesses extensive and diverse agricultural land, distinguished by various soil types, cultivable commodities, and favorable agroclimatic conditions. Nevertheless, this potential has not been fully harnessed to enhance community welfare and



bolster regional fiscal autonomy through increased Regional Original Revenue (PAD). A key asset under the jurisdiction of the local government is the agricultural land directly managed by the Agriculture Office. If this land is managed with innovative strategies grounded in sustainability principles, it holds the potential to become a significant source of income and serve as an effective model for public asset management.

Local governments often face numerous obstacles when managing agricultural land. These issues include low productivity due to the use of outdated technology, difficulties in adopting modern farming techniques, a lack of variety in crops, and insufficient access to sustainable markets. Additionally, the volatility of agricultural commodity prices in both local and international markets, the effects of climate change on planting schedules, and the limited skills of management personnel further hinder efforts to optimize land use. In this scenario, innovation in agricultural land management is crucial, not only to boost production but also to ensure the economic sustainability of the region and secure local food supplies.

Previous literature shows that innovation in the agricultural sector can encompass various aspects, ranging from the application of appropriate technology, the development of new superior varieties (VUB) that are resistant to environmental stresses, the implementation of water-saving irrigation systems such as drip irrigation, to strengthening partnerships between the government, the private sector, and the farming community. Rogers (2003) in *Diffusion of Innovations* emphasizes that the adoption of innovation does not only depend on the availability of technology, but also on the organizational capacity, policy support, and socio-economic readiness of the community. Meanwhile, FAO (2017) through the concept of Sustainable Land Management emphasizes the importance of land management that considers aspects of productivity, natural resource conservation, and long-term sustainability. However, most of the existing research still focuses on the level of individual farmers or farmer groups, while studies that specifically highlight the management of agricultural public assets by local governments for the purpose of increasing PAD are still very limited. This literature gap is relevant to be filled, considering that local governments have a dual role as asset managers as well as policy makers. In the context of KSB, the Agriculture Office has the authority and responsibility to manage regionally owned agricultural land, which can theoretically be a strategic instrument in increasing PAD. However, without an innovative strategy that is planned and evidence-based, it is difficult to realize this potential optimally. Therefore, this study is directed to identify and analyze innovative strategies that can be applied in the management of agricultural land owned by the KSB Agriculture Office, as well as evaluate their contribution to increasing PAD.

The main objective of this study is to provide a comprehensive overview of innovative practices that have been or could be implemented, measure their potential impact on PAD, and formulate applicable policy recommendations. The research questions asked include: (1) what innovative strategies are most effective in managing local government-owned farmland in KSB, and (2) the extent to which these strategies can contribute to increasing PAD. By answering this question, the research is expected to make a theoretical contribution to the development of studies on public asset management in the agricultural sector, as well as provide practical benefits for local governments and related stakeholders. The scope of this research is limited to agricultural land that is administratively and legally managed by the KSB Agriculture Office, including main food commodities such as rice and corn, as well as horticultural commodities with high economic value such as chili and tomatoes. The research does not cover privately owned land or individual farmers, and does not discuss in depth aspects of the

supply chain outside the KSB area. These limits are set to ensure the focus of the analysis and the relevance of the findings to the context of regional policies.

The conceptual framework of this research integrates the theory of diffusion of innovation and the principles of sustainable land management. The independent variable in this study is innovative land management strategies, which include technology dimensions, commodity diversification, and market partnerships. The dependent variable is the increase in PAD from the agricultural sector, which is measured through the contribution of income from land owned by local governments to the total PAD of KSB. Control variables include external factors such as climatic conditions, market prices, and national policies that can affect outcomes. The contribution of this research is expected to be multidimensional. Theoretically, this study expands the application of innovation theory into the context of agricultural public asset management, which has received less attention in the literature. Methodologically, this study combines a descriptive qualitative approach with triangulation of data sources, so as to provide a rich and in-depth picture of the phenomenon being studied. Practically, the results of this research can be a reference for the KSB Agriculture Office in formulating more effective land management policies and programs, as well as a model that can be replicated by other regions with similar characteristics.

The recent literature shows that the application of modern agricultural technologies, such as the use of VUB, water-saving irrigation systems, and agricultural mechanization, has been shown to increase productivity and efficiency in various regions. Commodity diversification is also recognized as an important strategy to reduce the risk of crop failure and price fluctuations, while opening up new market opportunities. Partnerships between local governments and the private sector, both in the form of sales contracts and joint investments, can strengthen market access and price stability. However, most of these studies were conducted in the context of land owned by farmers or private companies, so their relevance to the management of public assets needs to be further tested. The significance of this research lies not only in its contribution to the development of science, but also in its implications for public policy and regional development. For the scientific community, this research offers a new perspective on the role of local governments as innovators and managers of productive assets. For policymakers, the findings of this research can be the basis for designing land management programs that are more adaptive and responsive to market and environmental dynamics. For practitioners in the agricultural sector, the identified strategies can serve as inspiration to develop more sustainable and profitable business models. Thus, this introduction builds a conceptual and empirical foundation for the research to be conducted, starting from the identification of problems and gaps in the literature, the formulation of research objectives and questions, the determination of scope and limitations, to the preparation of a conceptual framework that will guide the analysis. The narrative flow presented is expected to provide readers with a clear understanding of the relevance and urgency of this research, as well as prepare for a smooth transition to the research methods section that will elaborate in detail the design, procedures, and analysis techniques used.

## II. Literature Review and Hypothesis Development

Agriculture is an important sector that makes a great contribution to regional economic development in Indonesia, especially in areas with a strong agrarian base. A number of studies confirm that innovation in the agricultural sector plays a role in increasing the productivity, efficiency, and sustainability of farming (Mrema et al., 2018; Kassie et al., 2020). In the context of local government-owned agricultural land management, innovation is not only limited to the technical aspects of

cultivation, but also includes public asset governance, commodity diversification, and strengthening partnerships between stakeholders that play a role in expanding market access and strengthening local economic stability. One of the innovative strategies that has proven effective is the adoption of appropriate technology. The use of new superior varieties (VUB) that are resistant to environmental stresses, agricultural mechanization, and the implementation of water-saving irrigation systems such as drip irrigation can increase crop yields as well as resource use efficiency (Mottaleb et al., 2016; Li et al., 2021). However, the success of technology implementation is not only determined by its availability, but also by organizational capacity, policy support, and the readiness of farmers and managers to accept change (Rogers, 2003). In addition to technology, commodity diversification is an important strategy in dealing with the risk of crop failure and price fluctuations. Studies in Southeast Asia show that farmers who implement an intercropping or crop rotation pattern obtain a more stable income compared to a monoculture system (Klasen et al., 2016). The diversification of horticultural commodities with high economic value, such as chili peppers and tomatoes, has also been proven to expand market opportunities and increase the contribution of regional income (Birthal et al., 2015). Thus, the diversification strategy not only reduces risks, but also strengthens the economic potential of the region through the optimization of agricultural land.

Furthermore, innovation in the form of partnerships between local governments, the private sector, and farmer groups also has a strategic role. Partnerships manifested in sales contracts, joint investments, and public-private partnership (PPP) schemes have been proven to strengthen farmers' access to markets, stabilize prices, and expand distribution opportunities for agricultural products (Ton et al., 2018; Reardon et al., 2019). In the context of public asset management, local governments play a role as facilitators that encourage the creation of synergistic relationships between parties, so that sustainable agriculture can develop while increasing Regional Original Income (PAD).

Optimizing public agricultural land management has the strategic potential to strengthen PAD if it is carried out with the principles of efficiency, transparency, and innovation. Studies on public asset management show that government assets, if managed with the right approach, can be a significant source of income for the regions (Pallot, 1997; Andrews & Entwistle, 2015). However, the literature that specifically discusses the linkage between public agricultural land management innovations and their contribution to PAD is still relatively limited. Therefore, this research is expected to be able to fill this gap by highlighting innovative strategies applied to agricultural land owned by the West Sumbawa Regency Agriculture Office.

Based on a literature review, this study formulated several hypotheses. First, technological innovation in the management of public agricultural land is expected to have a positive effect on increasing the contribution of the agricultural sector to PAD (H1). Second, commodity diversification on public agricultural land is expected to increase income stability and make a significant contribution to PAD (H2). Third, partnerships between local governments, the private sector, and farmer groups are believed to have a positive effect on increasing PAD through strengthening market access and price stabilization (H3). Finally, simultaneous innovative strategies, which include technology, diversification, and partnerships, are expected to make a significant contribution to increasing the PAD of West Sumbawa Regency (H4). Thus, the conceptual framework of this study places innovative strategies of land management as an independent variable that influences the increase in PAD as a dependent variable, taking into account external factors such as climate, market prices, and national policies as control variables.

### III. Research Method

This study uses a qualitative descriptive design chosen to gain an in-depth understanding of innovative strategies in the management of agricultural land owned by the West Sumbawa Regency Agriculture Office (KSB) and its contribution to increasing Regional Original Revenue (PAD). This approach is considered appropriate because the focus of the research is to explore phenomena contextually and holistically, rather than testing quantitative hypotheses. The research population included all agricultural land administratively and legally managed by the KSB Agriculture Office, while sample selection was carried out purposively based on the criteria of land area, type of commodity cultivated, accessibility to the market, and level of involvement in agricultural innovation programs. From this population, five strategic land locations were selected that were considered representative for in-depth analysis.

Data collection was carried out through three main techniques, namely semi-structured interviews, field observations, and document analysis. Interviews were conducted with 15 informants consisting of structural officials of the Agriculture Office, field managers, partner farmers, and representatives of private parties involved in marketing partnerships. The interview guide is structured based on the conceptual framework of the research, covering the topics of technological innovation, commodity diversification, and partnership patterns. Field observations were carried out to document land management practices, technology use, and supporting infrastructure conditions such as irrigation systems and post-harvest facilities. The document analysis includes a review of the PAD report of the agricultural sector for the last five years (2019–2023), strategic planning documents of the Agriculture Office, and cooperation contracts with third parties. The research instruments used include interview guides, observation sheets, audio recording devices, digital cameras, and GPS devices for location mapping. The qualitative data obtained were analyzed using thematic analysis techniques as developed by Braun and Clarke (2006), which included the stages of data familiarization, initial coding, theme search, theme review, theme definition and naming, and report preparation. The analysis process is assisted by NVivo software to make it easier to manage data, code, and visualize relationships between themes. The validity of the data is maintained through triangulation of sources (interviews, observations, documents), triangulation of methods, and member checking of key informants to ensure the accuracy of interpretation.

To control potential bias, researchers implemented a systematically documented trail audit, maintained consistency of data collection procedures at each location, and conducted peer debriefing with experts in the fields of public administration and agricultural innovation. The ethical aspect of research is maintained by obtaining official permission from the KSB Agriculture Office, submitting an informed consent sheet to all respondents, and ensuring the confidentiality of identity and sensitive information through the anonymization process. The entire research procedure is designed to be replicated by other researchers, including instrument documentation, interview protocols, and sample selection criteria. With the design of this method, the research is expected to be able to produce credible, relevant, and useful findings for the development of agricultural public asset management policies at the regional level.

### IV. Result and Discussion



The results of this study show that the management of agricultural land owned by the West Sumbawa Regency Agriculture Office (KSB) has undergone a significant transformation through the implementation of various innovative strategies designed to increase productivity and contribute to Regional Original Revenue (PAD). From the analysis of data obtained through interviews, field observations, and document reviews, three main strategies that are the pillars of land management were identified, namely cultivation technology innovation, commodity diversification, and strengthening market partnerships. These three strategies complement each other and form a management model that is adaptive to environmental, market, and policy challenges.

The first strategy, aquaculture technology innovation, is realized through the application of new superior varieties (VUB) that are drought-resistant and have high yield potential, as well as the use of drip irrigation systems that are more efficient in water utilization. Observation data shows that the application of VUB on rice fields is able to increase productivity by an average of 18% compared to conventional varieties previously used. Drip irrigation systems, in addition to saving water use by up to 30%, also help maintain soil moisture consistently, thereby reducing the risk of crop failure in the dry season. These findings are in line with the literature that confirms that the adoption of appropriate technologies can improve the efficiency of agricultural inputs and outputs, while strengthening resilience to climate variability.

The second strategy is commodity diversification, which is carried out by integrating horticultural crops with high economic value such as chili, tomatoes, and shallots into planting patterns that were previously dominated by rice and corn. This diversification has been shown to increase net land income by up to 25% per planting season, while reducing dependence on one type of commodity that is susceptible to price fluctuations. Interviews with partner farmers revealed that diversification also opens up new market opportunities, both at the local and regional levels, and encourages the development of small and medium enterprises (SMEs) based on processed agricultural products. This is consistent with the findings of Yuliana and Hidayat (2019) who stated that commodity diversification is an effective strategy to reduce farming risks and increase income stability.

The third strategy is to strengthen market partnerships through formal cooperation between the Agriculture Office, farmer cooperatives, and private business actors, including exporters. This form of partnership includes a sales contract at an agreed price, the provision of production facilities by business partners, and a guarantee to purchase crops. Analysis of contract documents shows that this mechanism is able to stabilize the selling price of commodities and reduce regional revenue volatility by up to 7% per year. In addition, these partnerships provide market certainty for farmers, thus encouraging them to invest in improving the quality of production. These findings reinforce the argument that cross-sector collaboration can be an important instrument in strengthening agricultural value chains and improving the competitiveness of local products. The implementation of these three strategies has a positive impact on KSB's PAD. Regional financial report data shows an increase in the agricultural sector's contribution to PAD by an average of 9% per year during the 2020-2023 period. This increase not only comes from the sale of crops, but also from the optimization of the use of public assets that were previously less productive. These findings support a research conceptual framework that integrates the theory of innovation diffusion (Rogers, 2003) and the principles of sustainable land management (FAO, 2017), where the success of innovation adoption is influenced by a combination of technological, institutional, and partnership factors.

The discussion of the results of this study indicates that the success of innovative strategies in the management of public agricultural land is highly dependent on the synergy between technological

innovation, business diversification, and strengthening market networks. Technological innovation provides the foundation of productivity, diversification expands sources of income and reduces risk, while market partnerships ensure economic sustainability through price stability and wider market access. This combination creates a synergistic effect that strengthens the resilience of regional agricultural systems to external shocks, both economic and environmental. However, this study also identifies some limitations that need to be considered. First, although the strategies implemented have shown positive results, their sustainability still depends on policy support and the availability of resources, including financing and skilled labor. Second, external factors such as extreme climate change and global price dynamics remain threats that are difficult to control at the regional level. Third, qualitative research designs limit the ability to quantitatively measure impact and generalize findings to a broader context.

The strength of this research lies in the triangulation approach that ensures the validity of the findings, direct involvement with various stakeholders, and a focus on public assets that have received less attention in academic studies. Compared to previous literature, these findings make a new contribution by placing local governments as the main actors in agricultural innovation, not just facilitators for farmers. This opens up opportunities for further research that can test similar models in other regions with different agroecological and socio-economic characteristics. From a policy perspective, the results of this study recommend the need to strengthen the institutional capacity of the Agriculture Office in planning and implementing innovations, increasing investment in supporting infrastructure such as irrigation and post-harvest facilities, and developing more inclusive and sustainable partnership schemes. In addition, a systematic monitoring and evaluation mechanism is needed to ensure that the strategies implemented really have a positive impact on PAD and community welfare. Thus, public agricultural land management can be a strategic instrument in encouraging sustainable and competitive regional economic development.

#### 4.1. Aquaculture Technology Innovation

Cultivation technology innovation is one of the main pillars in the agricultural land management strategy owned by the West Sumbawa Regency Agriculture Office (KSB) to increase productivity and contribute to Regional Original Revenue (PAD). In this context, innovation is not only interpreted as the application of new technology, but also as a process of adapting and optimizing technology in accordance with local agroecological conditions, human resource capacity, and market needs. The application of appropriate cultivation technology is crucial considering the challenges faced by the KSB agricultural sector, such as water limitations, degradation of soil fertility, changes in climate patterns, and fluctuations in commodity prices.

One of the prominent forms of innovation is the use of new superior varieties (VUB) that are resistant to drought stress and have high yield potential. The selected VUB takes into account not only productivity, but also resistance to pests and diseases, shorter harvest life, as well as yield quality that suits market preferences. Based on the results of interviews and observations, the application of VUB on rice fields in KSB was able to increase average productivity by 18% compared to conventional varieties. This increase not only has an impact on production volume, but also on the selling value, as the quality of the grain produced meets the premium standards that the regional market demands. In addition to VUB, another significant innovation is the application of drip irrigation systems on horticultural land. This system allows for more efficient and measurable water distribution directly to

the plant's root zone, thereby reducing water loss due to evaporation and percolation. Water use efficiency of up to 30% compared to conventional irrigation methods is very important in regions facing long dry seasons. Furthermore, drip irrigation also allows simultaneous fertilizer application through a fertigation system, which improves nutrient absorption efficiency and reduces environmental pollution due to fertilizer runoff.

The application of this cultivation technology is not carried out partially, but is integrated with sustainable soil and plant management practices. For example, the use of organic mulch to maintain soil moisture, crop rotation to break the pest cycle, and the use of organic fertilizers from agricultural waste processing. This approach is in line with the principles of Sustainable Land Management recommended by FAO (2017), where land productivity is increased without sacrificing long-term ecosystem function. The successful adoption of aquaculture technology innovations at KSB is also influenced by institutional and social factors. The Agriculture Office plays an active role in providing technical training, field assistance, and plot demonstrations (demo plots) to directly demonstrate the benefits of technology to partner farmers. This strategy is in line with the theory of Diffusion of Innovations (Rogers, 2003), which emphasizes the importance of the role of change agents in accelerating the adoption of innovation through effective communication and tangible evidence of success. From the perspective of the regional economy, aquaculture technology innovations have a double effect. First, the increase in productivity and quality of results directly has an impact on increasing income from commodity sales, some of which goes to PAD through the levy mechanism and management of public assets. Second, the efficiency of using inputs such as water and fertilizer reduces production costs, so that profit margins increase and the competitiveness of local products in regional and national markets is stronger. Thus, aquaculture technology innovation at KSB is not just a technical intervention, but an integrated strategy that combines technical, institutional, and market aspects. The success of this strategy shows that innovation-based public agricultural land management can be an effective instrument to increase PAD while strengthening food security and environmental sustainability.

#### 4.2. Commodity Diversification and Business Integration

Commodity diversification and business integration are key strategies implemented by the West Sumbawa Regency Agriculture Office (KSB) to maximize the potential of public agricultural land while reducing the risk of farming businesses. This strategy stems from the realization that dependence on one or two major commodities, such as rice and corn; makes agricultural systems vulnerable to price fluctuations, pest attacks, and climate change. By expanding the types of commodities cultivated and integrating cultivation activities with processing and marketing, local governments strive to create a more resilient, adaptive, and competitive agricultural system. In the early stages, diversification was carried out by adding horticultural commodities with high economic value such as chili, tomatoes, and shallots to the previously monoculture planting pattern. The selection of this commodity is based on market analysis which shows stable demand and relatively high prices throughout the year. In addition, horticultural commodities have a shorter harvest cycle than staple food crops, so they can provide faster cash flow for land managers and contribute to PAD through crop yield levies. Based on field data, the application of this diversification is able to increase net land income by up to 25% per planting season, while reducing the risk of losses due to crop failure in one type of commodity.

The diversification carried out is not only horizontal (addition of plant types), but also vertical through business integration. This integration includes the development of post-harvest facilities such

as drying houses, refrigerated storage warehouses, and simple processing units to produce semi-finished or ready-to-consume processed products. For example, some chili products are processed into chili powder or packaged chili sauce, while tomatoes are processed into tomato paste. This step not only increases the selling value of the product, but also extends the shelf life, thereby reducing losses due to deterioration in quality during distribution. Business integration also includes the development of small-scale agro-industry models that are jointly managed between local governments, farmer groups, and local business actors. This model allows for the creation of a more complete value chain at the regional level, from raw material production, processing, to marketing. Thus, the resulting economic benefits do not only stop at the cultivation sector, but also flow into the processing, distribution, and trade industry sectors. This is in line with the concept of value chain upgrading recommended by FAO (2017) as a strategy to increase the competitiveness of agricultural products in the domestic and export markets.

The success of diversification and business integration at KSB is also supported by institutional policies that facilitate farmers' access to capital, training, and technology. The Agriculture Office provides technical training programs in horticultural cultivation, post-harvest management, and yield processing, as well as facilitating partnerships with cooperatives and private business actors. This approach is in line with the findings of Yuliana and Hidayat (2019) who emphasized that commodity diversification requires strong institutional support so that it can be implemented sustainably. From the perspective of PAD, diversification and business integration make a dual contribution. First, increasing the volume and selling value of horticultural and processed products directly increases regional revenue from levies and management of public assets. Second, the growth of the local processing and trade industry creates a new tax base that expands regional sources of revenue. Thus, this strategy not only strengthens the economic resilience of the agricultural sector, but also expands the economic impact to other sectors in KSB. Overall, commodity diversification and business integration in KSB form a more resilient, market-oriented, and sustainable agricultural system. This strategy proves that public agricultural land management does not have to be limited to the production of raw materials, but can be expanded into the management of a complete value chain, thereby providing greater economic benefits for the region and society.

#### 4.3. Strengthening Market Partnerships and Institutional Governance

Strengthening market partnerships and institutional governance is a strategic component that complements cultivation technology innovations and commodity diversification in the management of agricultural land owned by the West Sumbawa Regency Agriculture Office (KSB). This strategy departs from the understanding that the success of agricultural production will not be optimal without a guarantee of stable market access, competitive prices, and an institutional system that is able to manage public assets in a transparent and accountable manner. In this context, market partnerships are positioned as instruments to connect production with end consumers through efficient distribution networks, while institutional governance serves to ensure the sustainability and integrity of asset management.

The partnership model developed at KSB adopts the principle of public-private partnership (PPP), in which local governments act as asset managers and facilitators, while the private sector provides market access, capital, technology, and logistical support. This form of partnership includes sales contracts at prices that have been agreed before the planting season, the provision of production

facilities by business partners, and guarantees for the purchase of crops. The contract not only provides market certainty for land managers, but also reduces the risk of price fluctuations that are often the cause of instability in farmers' income and PAD. In addition to formal contracts, partnerships are also built through farmer cooperative mechanisms that function as crop aggregators and price negotiators with large buyers, including exporters. This cooperative, with the support of the Agriculture Office, manages the post-harvest, packaging, and distribution processes, so that the products produced meet the quality standards required by the modern market. This approach is in line with the findings of Rogers (2003) who emphasized the importance of social and institutional networks in accelerating the adoption of innovation, as well as strengthening the bargaining position of producers in the market. In terms of institutional governance, the KSB Agriculture Office applies the principles of transparency, accountability, and participation in public land management. Transparency is realized through regular reporting on land performance and its contribution to PAD, which is accessible to stakeholders. Accountability is maintained through internal and external audits, while participation is realized by involving farmer groups, business actors, and local communities in program planning and evaluation. This approach is in line with the principles of good governance recommended by FAO (2017) for public resource management.

Strengthening market partnerships and institutional governance at KSB also has an impact on improving supply chain efficiency. With a clear contract and distribution network, the lead time between harvest and sale can be cut, reducing the risk of product damage and loss of selling value. In addition, market certainty encourages land managers to invest in improving the quality of production, as they have the guarantee that products will be absorbed by the market at a favorable price. From a PAD perspective, strong market partnerships ensure that production from public lands can be optimally monetized, while good institutional governance ensures that such revenues are managed efficiently and contribute directly to the region's coffers. The combination of the two creates a positive cycle in which increased incomes allow reinvestment in agricultural infrastructure, technology, and farmer empowerment programs, which in turn increases productivity and future incomes. Thus, strengthening market partnerships and institutional governance at KSB not only supports the success of technological innovation strategies and commodity diversification, but also becomes the foundation for the sustainability of the public agricultural system oriented towards improving PAD and community welfare. This strategy can be a replication model for other regions that want to optimize agricultural public assets through synergy between the government, the private sector, and the community.

#### 4.4. Strategic Synergy and Impact on PAD

The implementation of aquaculture technology innovation strategies, commodity diversification and business integration, as well as strengthening market partnerships and institutional governance in West Sumbawa Regency (KSB) shows that the three do not run separately, but form a system that strengthens each other. This synergy is the key to the success of public agricultural land management in making a significant contribution to Regional Original Revenue (PAD). Within this framework, technological innovation serves as a foundation for improving productivity and yield quality, diversifying commodities expanding sources of income and reducing business risks, while market partnerships and institutional governance ensure marketing sustainability, price stability, and asset management accountability. From a technical perspective, technological innovations such as the use of new superior varieties (VUB) and drip irrigation systems improve crop yields and resource use efficiency.

This increase in productivity is the starting capital for commodity diversification, as the availability of stable yields allows land managers to try new commodities without sacrificing primary production. Diversification then expands the product portfolio produced, so that the risk of losses due to price fluctuations or crop failure in a single commodity can be minimized. This diversity of products also opens up partnership opportunities with various market segments, from local markets to exporters, which in turn strengthens the marketing network.

Market partnerships built through formal contracts and the support of farmer cooperatives provide certainty of prices and sales volumes, so that revenues from public land can be predicted more accurately. This certainty allows local governments to plan PAD budgets more effectively, while also providing room for reinvestment in agricultural infrastructure, human resource training, and new technology development. Transparent and accountable institutional governance ensures that the revenue generated actually goes into the regional treasury and is used for the public good, creating a positive cycle between PAD improvement and regional development. The impact of this strategy synergy on PAD can be seen from the data on the contribution of the agricultural sector which increased by an average of 9% per year during the 2020–2023 period. This increase comes not only from the sale of crops, but also from taxes and levies generated by derivative economic activities, such as the agricultural product processing industry, distribution, and trade. In other words, strategic synergy not only strengthens the agricultural sector itself, but also encourages the growth of other related sectors, thereby expanding the PAD revenue base.

In addition to economic impacts, this strategy synergy also provides social and environmental benefits. Increasing regional revenues allows the government to finance social programs, such as education and health assistance, which in turn improves the quality of life of the community. From an environmental perspective, the application of water-saving technology and sustainable cultivation practices help maintain soil fertility and reduce the degradation of natural resources. This is in line with the principles of Sustainable Land Management (FAO, 2017) which emphasizes the balance between productivity, sustainability, and community welfare. Thus, the synergy between technological innovation, commodity diversification, and market partnerships supported by good institutional governance forms a productive, sustainable, and PAD-oriented public agricultural ecosystem. This model can be a reference for other regions in Indonesia that want to optimize agricultural public assets to strengthen fiscal independence and encourage inclusive regional economic development.

#### 4.5. Implementation Limitations and Challenges

Although the innovative strategy in the management of agricultural land owned by the West Sumbawa Regency Agriculture Office (KSB) has shown positive results in increasing productivity and contributing to Regional Original Revenue (PAD), its implementation is inseparable from various limitations and challenges that need to be observed. These limitations are multidimensional, encompassing technical, institutional, socio-economic, and environmental aspects, which interact with each other and affect the sustainability of the program. From a technical point of view, the main limitation lies in the availability and maintenance of supporting infrastructure, such as drip irrigation systems, post-harvest facilities, and mechanization equipment. Although technologies such as new superior varieties (VUB) and water-efficient irrigation have been adopted, their sustainability requires a consistent supply of inputs, periodic maintenance, and the technical capabilities of operators. In some locations, limited water supply during the long dry season is still a serious obstacle, so the effectiveness of irrigation technology cannot be maximized. In addition, limited access to quality seeds and fertilizers

that meet standards can also hinder the achievement of productivity targets. From an institutional perspective, challenges arise in the form of coordination between stakeholders. Although the Agriculture Office plays the role of the main manager, the success of innovative strategies requires synergy with other agencies, village governments, cooperatives, and the private sector. Differences in priorities, limited managerial capacity, and lengthy bureaucracy can slow down the decision-making process and program implementation. In addition, transparent and accountable governance mechanisms still need to be strengthened, especially in terms of performance reporting and distribution of economic benefits to the community.

Socio-economic aspects are also a limiting factor. Not all local farmers or workers have adequate skills to operate new technologies or manage agricultural processing businesses. This capacity gap can hinder the equitable adoption of innovation. On the other hand, resistance to change is still found, especially among farmers who have long been accustomed to conventional methods. Cultural factors, risk perception, and limited working capital often make some parties reluctant to fully participate in business diversification or integration programs. External challenges that are macro in nature cannot be ignored either. Climate change with increasingly erratic weather patterns increases the risk of crop failure and decreases productivity. Fluctuations in commodity prices in global markets can affect income stability, even though there is a sales contract mechanism in place. In addition, national policies related to agricultural subsidies, commodity imports, and trade regulations can have a direct impact on the competitiveness of local products and the economic viability of the strategies implemented. From a sustainability perspective, the challenge lies in the ability of local governments to sustain and develop these innovative strategies in the long term. This requires consistent political commitment, adequate budget allocation, and continuous evaluation and learning mechanisms. Without strong, adaptive policy support, the successes that have been achieved risk stagnation or even setbacks. By understanding these limitations and challenges, local governments can formulate appropriate mitigation measures, such as strengthening technical and managerial capacity, building more inclusive cross-sectoral partnerships, and developing early warning and adaptation systems to climate change. A proactive and evidence-based approach will be key to ensuring that innovative strategies in public agricultural land management not only deliver short-term results, but also contribute sustainably to PAD and the well-being of the KSB community.

#### 4.6. Policy Implications and Recommendations

The findings of this study have significant policy implications for local governments, especially in the context of managing agricultural public assets to increase Regional Original Revenue (PAD) in a sustainable manner. The innovative strategies that have been identified including aquaculture technology innovation, commodity diversification and business integration, and strengthening market partnerships and institutional governance suggest that the success of public farmland management depends not only on the technical aspects of production, but also on consistent policy support, cross-sectoral coordination, and active stakeholder participation. From a policy perspective, local governments need to integrate this innovative strategy into the regional medium-term development planning document (RPJMD) and the strategic plan of the Agriculture Office. This integration is important to ensure program sustainability, adequate budget allocation, and structured oversight. In addition, agricultural public asset management policies must be designed with the principles of good

governance, which emphasize transparency, accountability, participation, and fairness in the distribution of economic benefits.

Another implication is the need to strengthen institutional capacity. Local governments need to develop continuous training programs for apparatus and partner farmers, including modern cultivation technical skills, farm business management, yield processing, and marketing. This capacity building will accelerate the adoption of innovations and improve the quality of land management. In addition, it is necessary to establish a special unit or task force that is tasked with facilitating public-private partnerships, managing sales contracts, and monitoring market performance. In terms of financing, local governments can consider innovative funding schemes, such as blended finance that combines public funds, private investment, and donor support. The scheme can be used to finance the development of agricultural infrastructure, such as modern irrigation, post-harvest facilities, and distribution centers. In addition, fiscal incentives such as regional tax reductions or input subsidies can be given to business partners who are committed to long-term contracts and improving the quality of production.

The next recommendation is the development of a digital-based agricultural information system that can monitor land conditions, production, market prices, and distribution in real-time. This system will improve decision-making efficiency, strengthen transparency, and facilitate coordination between stakeholders. Digitalization can also open up online marketing opportunities (e-commerce) to expand the market reach of KSB agricultural products. In addition, climate change adaptation policies need to be an integral part of land management strategies. Local governments can develop agricultural insurance programs to protect farmers from the risk of crop failure due to extreme weather, as well as encourage the implementation of environmentally friendly cultivation practices such as soil and water conservation, the use of organic fertilizers, and integrated pest control. Finally, to ensure the sustainability and replication of this model in other areas, a systematic monitoring and evaluation mechanism is needed. Local governments can set key performance indicators that include aspects of productivity, contribution to PAD, environmental sustainability, and social impact. The results of the evaluation should be published regularly to maintain accountability and encourage continuous improvement. By adopting this recommendation, the management of public agricultural land in KSB will not only be an instrument to increase PAD, but also a driving force for inclusive, sustainable, and highly competitive regional economic development. This model can be an inspiration for other regions in Indonesia to optimize agricultural public assets through synergy between technological innovation, business diversification, market partnerships, and good governance.

## V. Conclusion

This study confirms that the management of agricultural land owned by the West Sumbawa Regency Agriculture Office (KSB) based on innovative strategies is able to make a significant contribution to increasing Regional Original Revenue (PAD) while strengthening regional economic resilience. The three main pillars identified—namely cultivation technology innovation, commodity diversification and business integration, and strengthening market partnerships and institutional governance—have proven to complement each other and create synergies that result in increased productivity, resource use efficiency, price stability, and expanded market access. The application of new superior varieties (VUB) and drip irrigation systems has been proven to improve yield and input efficiency, while commodity diversification expands product portfolios and reduces business risk. Business integration through the processing of agricultural products adds selling value and expands the

PAD revenue base. Strong market partnerships, supported by transparent and accountable institutional governance, ensure marketing sustainability and optimization of public asset utilization. The synergy of these three strategies creates a double impact: increasing the contribution of the agricultural sector to PAD by an average of 9% per year and strengthening the local economic ecosystem through the growth of derivative sectors.

The study's main contribution is the presentation of an integrated model of agricultural public asset management, which can be replicated in other regions with adjustments to local conditions. Theoretically, this research expands the application of innovation diffusion theory and sustainable land management principles into the context of public asset management. In practical terms, these findings provide evidence-based guidance for local governments in designing land management policies and programs that are oriented towards improving PAD and community welfare. However, this study has limitations, including a qualitative design that limits the generalization of findings, dependence on policy support and resources, and the potential influence of external factors such as climate change and global price dynamics. Therefore, follow-up research with a quantitative or mixed methods approach is recommended to measure the long-term impact more comprehensively, including cost-benefit analysis and projected contribution to PAD. By integrating technological innovation, business diversification, market partnerships, and good governance, public agricultural land management in KSB can be a strategic instrument in encouraging regional fiscal independence, strengthening food security, and creating inclusive and sustainable economic development.

This research also shows that the readiness of human resources (HR) and organizational culture are very decisive factors in the success of system implementation. Apparatus with a good level of digital literacy tends to adapt more quickly, while resistance to change often arises from employees who are used to conventional methods. Therefore, continuous training and organizational mindset changes need to be placed as priorities for digital transformation to run effectively. In addition to the human factor, the existence of technical infrastructure and data security systems is an absolute requirement for the smooth innovation of electronic archives. Without an adequate technology network and strong security mechanisms, digital archive systems have the potential to pose new vulnerabilities, such as the risk of data leakage or operational disruption. Therefore, investment in information technology and cybersecurity policies must be integrated with digital archive management strategies.

This research contributes by filling gaps in the literature related to archive digitization in the local context, especially in local government. This study shows how technological, human, and institutional factors interact in supporting or hindering electronic archive innovation. Practically, the findings of this study can be a reference for other local governments in Indonesia to develop more effective and contextual archival digitization policies and strategies. Thus, electronic archive innovation is not only understood as the adoption of technology, but also as an institutional transformation towards more modern, accountable, and sustainable governance.

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