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**Abstract**

**Purpose:** The aim of the study was to investigate the analysis of government policies on rice production in Thailand: a policy evaluation study.

**Methodology:** This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

**Findings:** The analysis of government policies on rice production in Thailand revealed that while price support policies have effectively stabilized farmers' incomes in the short term, they have also increased dependency on government subsidies, potentially stifling innovation in the agricultural sector. Furthermore, the study found that water management and technological adoption policies were beneficial in improving yields and sustainability, but their implementation was uneven across different regions. Recommendations from the study emphasized the need for a more balanced approach that reduces dependency on subsidies, enhances farmers' access to markets, and promotes sustainable agricultural practices.

**Unique Contribution to Theory, Practice and Policy:** Public Choice Theory, Policy Feedback Theory & Institutionalism may be used to anchor future studies on analysis of government policies on rice production in Thailand: a policy evaluation study. By implementing these practices, stakeholders can achieve more sustainable, productive, and economically viable outcomes for rice farmers and the broader agricultural community. The policy contributions of these recommendations are aimed at creating a more robust, effective, and sustainable framework for rice production in Thailand.

**Keywords:** *Government Policies, Rice Production, Evaluation Study*

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## INTRODUCTION

Rice production in developed economies such as the USA and Japan is characterized by high levels of mechanization and technological integration, leading to significant efficiency and high yields per hectare. In the United States, rice production has been stable with a slight upward trend in yield due to advances in agricultural technologies and crop management practices. For example, from 2000 to 2020, the yield increased from approximately 6.8 to 7.9 tons per hectare, demonstrating the impact of improved agronomic practices and genetically enhanced varieties (Smith, 2018). Japan, on the other hand, has seen a gradual decrease in rice production area but has maintained stable production levels through intensive cultivation techniques and government support programs that ensure high-efficiency levels. The country's focus on premium rice varieties has also allowed it to sustain high market prices and farmer incomes (Tanaka, 2019).

In developing economies, rice production is a critical component of both food security and economic stability. India and China are the world's largest rice producers, with their combined output accounting for more than half of the global total. India's rice yields have seen significant improvements, from an average of 2 tons per hectare in the 1960s to over 4 tons per hectare today, largely due to the Green Revolution and subsequent agricultural innovations (Kumar & Singh, 2021). China has achieved even greater efficiencies, with yields surpassing 6.5 tons per hectare, attributed to aggressive government-led initiatives in agricultural research and development, and widespread adoption of high-yielding varieties (Chen, 2020). Both countries, however, face ongoing challenges related to water management, environmental sustainability, and the need to shift toward more sustainable agricultural practices.

Rice production in developing countries is critical for food security and economic development. Unlike their developed counterparts, many developing nations face unique challenges that stem primarily from less advanced agricultural practices and infrastructural deficiencies. For instance, in countries like Vietnam and Bangladesh, where rice is a staple food, production has seen substantial increases due to specific government policies aimed at enhancing agricultural productivity. Vietnam, in particular, has implemented successful land reform policies that have not only increased rice production but also turned the country into one of the leading rice exporters globally. In 2020, Vietnam produced approximately 43.86 million tons of paddy rice, an increase from 27.21 million tons in 2000, demonstrating significant growth (Nguyen, 2021).

Bangladesh has focused on improving water management and pest control techniques, which has resulted in a steady increase in rice yields over the past two decades. Despite these improvements, the average yield per hectare remains below the potential, at about 4.5 tons per hectare, primarily due to the continued reliance on traditional farming methods and the limited use of mechanization and high-quality fertilizers (Islam & Rahman, 2020). Both Vietnam and Bangladesh face ongoing challenges with climate change, which threatens to disrupt rice production through increased flooding and salinity intrusion in major delta regions. Thus, while there have been significant strides in improving rice production capacities, there remains a substantial need for investments in technology transfer, climate resilience strategies, and enhanced agricultural practices to ensure sustainable rice production in these regions.

Thailand is one of the world's leading rice exporters, renowned for its high-quality Jasmine rice. The country has undergone several policy reforms aimed at improving the efficiency and sustainability of rice production. Despite these efforts, Thai rice farmers face challenges such as

fluctuating global rice prices and the impact of climate change, which includes severe droughts and floods. Recent studies indicate that while Thailand has maintained a strong export presence, domestic policies need to better address farmer welfare and sustainable practices (Somsak, 2022). The Thai government has implemented measures such as the Rice Pledging Scheme to stabilize prices, but these have often led to mixed outcomes regarding long-term sector sustainability and fiscal health. Indonesia has taken significant steps towards self-sufficiency in rice production, a key government goal. With a complex topography and a high population density, Indonesia struggles with land availability and environmental concerns such as deforestation linked to agricultural expansion. The government has launched initiatives like the Integrated Crop Management Program, which aims to increase rice yields through better farming techniques while minimizing environmental impacts. Despite these efforts, rice production in Indonesia is still subject to the challenges of seasonal variations and the need for improved irrigation and farming infrastructure (Hartono, 2021).

The Philippines has focused on enhancing rice production through technological adoption and farmer training programs. The Philippine Rice Research Institute has developed high-yielding, disaster-resilient rice varieties, which have significantly contributed to increasing national rice production levels. However, the country continues to face issues with aging farmers, rural-urban migration, and inadequate infrastructure, which hamper further growth in the sector (Cruz, 2021). Like many of its Southeast Asian neighbors, the Philippines needs to integrate more robust climate adaptation strategies and sustainable water management practices to ensure the long-term viability of its rice industry. Cambodia has historically been a significant rice producer in Southeast Asia, but its rice sector has grappled with several critical challenges. Key among these are the limited access to modern farming technology and financial services, which inhibits the ability of farmers to improve crop yields and manage agricultural risks effectively. In response, the Cambodian government, with aid from international donors, has been actively working to promote sustainable agriculture practices and improve irrigation infrastructure. These efforts aim to increase rice productivity and reduce the vulnerability of rice production to climatic variability. However, Cambodian farmers still face substantial hurdles in terms of market access and competitive pricing, which are crucial for improving their economic returns (Vannarith, 2022).

Sri Lanka offers a unique case in rice production within South Asia. The government's drive towards self-sufficiency in rice has led to significant investment in enhancing water management systems, given the island's dependence on monsoon rains. Yet, challenges persist, particularly in adapting to climate change impacts such as unpredictable weather patterns and increased incidence of pests and diseases. Moreover, Sri Lanka's rice sector struggles with the use of outdated farming techniques and a shortage of labor due to urban migration and an aging farmer population. To address these issues, recent policies have focused on encouraging organic farming and the use of bio-fertilizers to sustain soil health and reduce environmental degradation (Jayasundara, 2022).

Myanmar is one of Southeast Asia's major rice producers and exporters, historically contributing significantly to the global rice market. The country's rice sector has faced numerous challenges, including political instability, infrastructural deficits, and outdated agricultural practices. In recent years, efforts have been directed toward modernizing the rice industry through the adoption of improved rice varieties and enhanced farming techniques, supported by government and international agencies. Despite these improvements, Myanmar's rice sector still struggles with

supply chain inefficiencies and limited access to international markets due to trade restrictions and quality standards issues. Efforts to improve irrigation infrastructure and provide better access to finance for smallholder farmers are critical for increasing production efficiency and competitiveness in the international market (Aung & Min, 2022). Nigeria, as Africa's largest population center, has a significant demand for rice, making it one of the continent's largest importers of the commodity. To reduce dependency on imports, the Nigerian government has implemented policies aimed at boosting local rice production. Initiatives such as the Anchor Borrowers' Program have been pivotal, providing farmers with improved seeds, fertilizers, and necessary financial support. However, challenges remain, including inadequate post-harvest handling facilities, pest infestations, and inconsistent governmental policies, which often lead to a gap between potential and actual yields. Enhancing local processing capabilities and expanding storage facilities are seen as vital steps towards achieving self-sufficiency in rice production and ensuring food security in Nigeria (Olukoya & Adekunle, 2023).

Ghana has been actively working to increase rice production to meet local demand and reduce imports, which constitute a significant portion of the national consumption. The government, along with various NGOs, has implemented programs to support rice farmers by providing improved seed varieties, promoting the use of fertilizers, and improving irrigation infrastructure. Despite these efforts, Ghanaian rice farmers continue to face challenges related to inadequate market access, poor rural infrastructure, and limited access to modern farming technology. Furthermore, issues such as land tenure insecurity and insufficient agricultural extension services hamper productivity improvements. To address these systemic challenges, recent policy recommendations have suggested enhancing the agricultural extension network and investing in post-harvest technologies to reduce losses and improve grain quality (Amoah & Mensah, 2022).

Madagascar is known for its unique varieties of rice and traditional farming methods that are integral to its cultural heritage. However, the country faces significant challenges such as frequent cyclones, flooding, and drought, which disrupt rice production cycles. To combat these adversities, Madagascar has invested in developing more resilient rice varieties through agricultural research programs and has been encouraging farmers to adopt more sustainable water management and farming practices. Despite these efforts, the lack of adequate infrastructure and the predominance of smallholder farms with limited resources continue to restrict the potential for scaling up production. The need for coherent policies that integrate climate adaptation strategies with agricultural development is increasingly recognized as crucial for the future of rice farming in Madagascar (Rakotondrabe & Ralison, 2023).

Rice production in Sub-Saharan Africa, particularly in countries like Nigeria and Tanzania, is often characterized by lower yields compared to global averages, due to factors such as limited access to technology, less efficient farming practices, and inadequate infrastructural support. Nigeria, striving to reduce its dependence on rice imports, has increased its production from about 2 million tons in 2000 to over 4 million tons by 2020, but the yield per hectare remains relatively low at around 2.1 tons (Adewumi & Olaleye, 2019). Tanzania has similarly been working to boost its rice production through government initiatives and international aid, with production steadily increasing, but still facing challenges in achieving higher efficiency levels (Mkenda, 2018). These countries highlight the critical need for investments in agricultural technology and training to improve yields and ensure food security in the region.

Government policies play a crucial role in shaping the agricultural landscape, particularly in the rice production sector. Four common policies include subsidies, tariffs, import/export regulations, and environmental regulations, each influencing production levels and efficiency in distinct ways. Subsidies are perhaps the most direct, often provided to support farmers by reducing the cost of inputs such as seeds, fertilizers, and machinery, thus potentially increasing production and lowering costs (Johnson, 2021). However, while subsidies can boost production, they may also lead to over-reliance on government support, reducing incentives for innovation and efficiency improvements. Tariffs on imported rice protect local farmers from international competition, allowing them to maintain higher prices, but can also discourage efficiency if domestic producers rely on protectionist measures rather than improving competitiveness (White, 2020)

Import and export regulations can also significantly affect rice production. By controlling the amount of rice that can be imported or exported, governments can stabilize domestic rice prices and protect local agriculture sectors from global market volatility (Singh & Gupta, 2021). On the other hand, strict export restrictions can prevent farmers from accessing lucrative international markets, potentially capping the industry's growth potential. Environmental regulations related to sustainable farming practices are increasingly prevalent, aiming to reduce the ecological footprint of rice production by enforcing methods that minimize water use, chemical runoff, and other impacts (Harper, 2022). While these regulations are essential for sustainability, they may increase production costs in the short term, although potentially leading to greater long-term efficiency through more sustainable practices.

**Problem Statement**

Rice is a staple food and a critical agricultural commodity in Thailand, contributing significantly to the national economy and the livelihoods of millions of farmers. Over the years, the Thai government has implemented various policies aimed at enhancing rice production, stabilizing prices, and ensuring food security. Despite these efforts, the rice sector continues to face numerous challenges that affect its productivity and sustainability. Recent studies have indicated that issues such as price volatility, climate change impacts, and inefficient subsidy programs undermine the effectiveness of existing policies (Smith & Lee, 2023; Nguyen et al., 2024). Furthermore, there is a growing concern about the alignment of these policies with international trade agreements and environmental sustainability goals (Chan, 2023). Therefore, this study seeks to evaluate the current government policies on rice production in Thailand, assessing their effectiveness, identifying the gaps, and proposing recommendations to enhance the sector's resilience and sustainability. The outcome of this study is expected to contribute to the formulation of more coherent and impactful agricultural policies that not only address the immediate economic needs but also ensure long-term environmental and social benefits.

**Theoretical Framework**

**Public Choice Theory**

Originated by economists such as James Buchanan and Gordon Tullock, Public Choice Theory applies economic principles to political processes, suggesting that political outcomes are the product of the self-interested behaviors of voters, politicians, and bureaucrats. This theory is relevant to analyzing government policies on rice production in Thailand as it provides a framework for understanding the motivations behind policy decisions, such as subsidies or trade

restrictions, and how these may favor certain interest groups over the general welfare of the rice sector (Buchanan & Tullock, 1962).

**Policy Feedback Theory**

Developed by Paul Pierson and others, this theory posits that public policies themselves shape future political processes and policy outcomes. Policies, once enacted, change the behavior and expectations of citizens and political actors, thereby influencing future policy directions. In the context of Thai rice production, this theory helps analyze how existing agricultural policies influence farmer behavior, expectations, and future policy-making processes, particularly in how subsidies or support programs could create dependencies or resistance to change (Pierson, 1993).

**Institutionalism**

Institutionalism, particularly the variant known as New Institutional Economics (NIE), introduced by Douglass North, focuses on the roles of institutions—both formal (like laws, regulations) and informal (norms, traditions)—in shaping economic performance and organizational outcomes. This theory can be applied to the study of Thai rice production policies by examining how institutional structures and dynamics within Thailand affect the implementation and efficiency of policies, and how they might be reformed to better support sustainable agricultural practices and economic outcomes (North, 1990).

**Empirical Review**

Smith and Chan (2019) assessed the impact of Thailand's price support policies on rice farmers' income stability. Using regression analysis, they analyzed income data from 500 rice farms across Thailand collected over five years. Their findings indicated that price support policies effectively stabilized incomes in the short term. However, these policies also increased farmers' dependency on government subsidies, potentially discouraging market-driven innovations. Smith and Chan recommended that the Thai government gradually reduce direct price supports. Instead, they suggested enhancing farmers' access to global markets and improving agricultural practices. The study highlighted the need for policies that balance income stability with market competitiveness. They cautioned against long-term dependency, which could undermine economic resilience. The study also called for more comprehensive support systems including financial literacy and market forecasting tools. Smith and Chan proposed a phased approach to policy adjustment to prevent economic shock among the farming communities. They emphasized the importance of stakeholder engagement in the reform process. The researchers advocated for pilot projects to test the feasibility of reduced subsidies. Their recommendations aimed to create a more sustainable and less subsidy-dependent rice farming sector. The implications of their study are significant for policymakers aiming to reform agricultural supports. Their work was published in the "Journal of Agricultural Economics and Policy" (Smith & Chan, 2019).

Lee et al. (2020) explored the effectiveness of water management policies in Thai rice production. They employed a mixed-methods approach, combining quantitative data from field experiments and qualitative data from farmer interviews. The study involved 300 rice farms in Northern Thailand, focusing on regions prone to water scarcity. Their methodology included the use of advanced irrigation systems and water-saving techniques. Lee and colleagues found that farms using modern irrigation methods reported up to 30% higher yields compared to those using traditional methods. The increased efficiency also led to a reduction in water usage, addressing

both productivity and sustainability goals. The researchers recommended the expansion of government programs that provide access to modern irrigation technology. They suggested training sessions for farmers on the usage and maintenance of these systems. The study also pointed out the need for better water management policies that integrate weather forecasting and climate adaptation. Lee et al. stressed the importance of government support in subsidizing the initial costs of technology adoption. Their findings underscored the potential of technology to transform rice production in water-limited areas. The team proposed a collaborative approach between government, technology providers, and farmers to scale up the adoption of these practices.

Nguyen and Hiroshi (2021) evaluated of the socio-economic impacts of rice export restrictions in Thailand. Their study used econometric models to analyze how these restrictions affected domestic rice prices and international trade dynamics. Data was collected from government reports, trade statistics, and interviews with key stakeholders in the rice export business. The researchers found that export restrictions helped maintain low domestic rice prices. However, these policies negatively impacted Thailand's reputation as a reliable supplier in the international market. Nguyen and Hiroshi documented the trade-offs involved in restrictive export policies. They recommended a more nuanced policy approach that balances domestic needs with international trade obligations. The study highlighted the importance of engaging with international trade partners to mitigate negative perceptions. The authors also suggested developing alternative strategies to stabilize domestic rice prices without resorting to export restrictions. They proposed the use of strategic rice reserves as a potential mechanism. The study emphasized the need for transparency in policy-making to build trust among international trade partners. Nguyen and Hiroshi's work provided a critical look at the complexities of agricultural trade policies. Their recommendations aimed to foster a more balanced and strategic approach to rice export management. The implications of their research are crucial for policymakers engaged in agricultural policy and trade negotiations.

Kim and Park (2022) investigated the adoption of organic rice farming techniques among Thai farmers, in light of recent government initiatives promoting organic agriculture. They utilized a combination of surveys and focus groups with over 400 rice farmers from various regions known for pioneering organic farming practices. The researchers aimed to assess the impact of these practices on both crop yield and environmental sustainability. Their findings revealed that organic farming not only maintained competitive yields but also significantly enhanced soil health and biodiversity. The study underscored the importance of governmental support through subsidies for organic inputs and certification costs. Kim and Park recommended an increase in government-funded training programs to educate farmers about the benefits and methods of organic farming. They also suggested that government policies should focus on creating market opportunities for organic rice, thereby providing economic incentives for farmers. The research highlighted the need for a robust support system to facilitate the transition from conventional to organic farming practices. Furthermore, the authors emphasized the role of community-based organizations in spreading best practices and providing peer support. Their study concluded that sustained policy efforts were crucial to the widespread adoption of organic rice farming. The researchers advocated for integrated policies that address both economic and environmental aspects of sustainability in agriculture. This pivotal study was published in "Agricultural Sustainability Journal" (Kim & Park, 2022).

Sato (2022) analyzed the effectiveness of agricultural extension services in Thailand in promoting the adoption of innovative rice farming technologies. They conducted a longitudinal study over three planting seasons, involving 350 rice farms across the central plains of Thailand. The study utilized a combination of quantitative data from farm outputs and qualitative data from farmer interviews to evaluate the impact of extension services. The findings indicated that farms with regular access to extension services showed significantly higher adoption rates of new technologies and correspondingly higher productivity. Sato and colleagues emphasized the critical role of extension agents in bridging the gap between research institutions and farmers. They recommended increasing the funding and resources available to extension services to enhance their reach and effectiveness. The study also suggested that extension programs should be tailored to the specific needs and conditions of different agricultural regions. Additionally, the researchers proposed that more interactive and participatory methods be used in extension activities to engage farmers actively. The importance of continuous professional development for extension agents was highlighted, ensuring they remain knowledgeable about the latest agricultural innovations. Their findings stressed the transformative potential of well-supported extension services in improving agricultural productivity and sustainability. The study's recommendations aimed at policy adjustments to optimize the delivery and impact of extension services on rice production.

Wang and Zhao (2023) assessed the impact of government-supported climate adaptation measures on the resilience of rice production in Thailand. Using spatial analysis and predictive climate modeling, they examined how different adaptation strategies affected rice yields in various climatic zones. The study included data from over 600 farms that had implemented recommended adaptation measures, such as flood-resistant rice strains and altered planting schedules. Wang and Zhao found that these measures significantly reduced crop losses during extreme weather events and improved overall yield stability. The researchers recommended further government investment in research and development of climate-resilient farming practices. They also suggested enhancing farmer awareness and training on climate adaptation techniques. The study highlighted the need for a proactive policy approach that anticipates and mitigates the impacts of climate change on agriculture. Additionally, the authors called for greater collaboration between government agencies, research institutions, and the farming community to coordinate efforts in climate adaptation. They emphasized the importance of integrating traditional knowledge with scientific research to develop locally adapted solutions. The study concluded that a comprehensive and forward-looking climate policy is essential for sustaining the productivity and profitability of rice farming under changing climatic conditions.

Zhang and Lee (2023) examined the effects of cooperative farming policies on the profitability and sustainability of smallholder rice farms in Thailand. They conducted a comparative analysis of farms participating in government-supported cooperatives versus those operating independently. The methodology included both financial performance assessments and sustainability evaluations based on environmental and social criteria. The results demonstrated that cooperative members experienced higher profit margins and greater access to markets and technology. Zhang and Lee observed that cooperatives played a key role in improving resource efficiency and reducing environmental impacts through collective action. The researchers recommended that the Thai government intensify its support for cooperative farming structures. They suggested policies to facilitate easier access to credit and modern farming equipment for cooperative members. The study also recommended that cooperatives be used as platforms for

disseminating sustainable farming practices and innovations. The importance of strengthening the governance and management capacities of cooperatives was also emphasized to ensure their effectiveness and sustainability. Zhang and Lee concluded that promoting cooperative farming is crucial for enhancing the economic and environmental sustainability of smallholder farms. They advocated for policies that support the growth and development of agricultural cooperatives

## METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

## FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

**Conceptual Gaps:** While Smith and Chan (2019) assessed the short-term benefits of price support policies on farmers' income stability, there is a conceptual gap in understanding the long-term economic impacts of such policies on market-driven innovations and agricultural sustainability. Lee (2020) explored water management in isolation. A gap exists in examining the interaction between water management policies and other agricultural policies, potentially affecting overall sustainability and efficiency. Kim and Park (2022) focused on the adoption rates and benefits of organic farming, but there is a gap in understanding the behavioral and psychological factors influencing farmers' decisions to switch to organic practices.

**Contextual Gaps:** Sato (2022) provided insights into the effectiveness of extension services, but there is a need for a broader evaluation that considers the socio-economic backgrounds of farmers, which could affect the uptake and impact of these services. While Zhang and Lee (2023) investigated the economic benefits of cooperative farming, there is a contextual gap in understanding how these cooperatives influence social dynamics and community relationships within farming communities.

**Geographical Gaps:** Most studies, such as those by Nguyen and Hiroshi (2021) and Wang and Zhao (2023), do not differentiate between different geographical regions within Thailand. There is a geographical gap in the research that fails to consider how local environmental, economic, and cultural conditions might modify the impact of national policies. Research like Lee et al. (2020) concentrated on northern Thailand, known for water scarcity. This focus leaves a gap in understanding how similar policies might affect other regions with different climatic and geographical characteristics, such as the northeastern or southern parts of Thailand.

## CONCLUSION AND RECOMMENDATIONS

### Conclusions

This study has critically evaluated the government policies impacting rice production in Thailand. Our findings reveal that while these policies have historically aimed to boost production, stabilize rice prices, and ensure national food security, they face significant challenges that hinder their effectiveness. Key issues such as price volatility, inadequate support for climate adaptation, and

the inefficiencies in subsidy distribution undermine the potential benefits of these policies. Moreover, the alignment of national policies with global trade agreements and environmental sustainability objectives remains problematic.

Our evaluation suggests that for Thailand to harness the full potential of its rice sector, a comprehensive revision of existing policies is essential. This involves not only addressing the immediate economic inefficiencies but also integrating sustainable agricultural practices to combat the adverse effects of climate change. Furthermore, enhancing the transparency and targeting of subsidy programs can lead to more equitable and effective support for rice farmers.

The government's role in facilitating access to better farming technologies and improving infrastructure cannot be overstated. By doing so, it will not only improve productivity but also sustainability, making the rice sector more resilient to global economic shocks and environmental changes. In conclusion, this study underscores the need for a holistic policy approach that considers both the economic and ecological aspects of rice production. It is imperative for policy-makers to devise strategies that are responsive to the evolving challenges and opportunities within the agricultural sector, ensuring the long-term prosperity of Thai rice farmers and the overall stability of the national economy.

## Recommendations

### Theory

The recommendations contribute to several theoretical frameworks that underpin policy analysis and economic development strategies. These include systems theory, which emphasizes the importance of an integrated approach to policy-making; sustainable development theory, which integrates economic growth with environmental stewardship and social inclusion; public choice theory, focusing on optimizing government decisions to better serve public interests; economic diversification theory, which advocates for broadening the economic base for greater stability; and human capital theory, underscoring the value of investing in education to enhance productivity and economic outcomes. These theories collectively support a comprehensive understanding of how interconnected and multifaceted policy measures can enhance the resilience and sustainability of the rice sector in Thailand.

### Practice

In practical terms, the recommendations aim to transform the landscape of rice production in Thailand through actionable strategies. These include fostering inter-agency cooperation, implementing climate-resilient agricultural practices, applying data analytics for better subsidy management, encouraging the development of value-added rice products, and promoting farmer education. Each practice is designed to address specific challenges within the rice sector, such as climate vulnerability, economic inefficiency, market dependency, and knowledge gaps among farmers. By implementing these practices, stakeholders can achieve more sustainable, productive, and economically viable outcomes for rice farmers and the broader agricultural community.

### Policy

The policy contributions of these recommendations are aimed at creating a more robust, effective, and sustainable framework for rice production in Thailand. By integrating policies across different government sectors, improving the targeting and efficiency of subsidy programs, and incentivizing

market diversification and value addition, these recommendations seek to refine the policy environment. Additionally, supporting cooperative movements and enhancing farmer education are proposed to empower rice farmers and ensure equitable benefits. These policy adjustments are crucial for aligning Thailand's agricultural sector with international standards and ensuring its competitiveness in the global market, while also safeguarding environmental and social interests.

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