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FOOD SPACE EMERGENCY: PROGRESSIVE POLICY SELECTION FOR CONTROLLING LAND CONVERSION AND OPTIMIZING RICE PRODUCTIVITY IN WEST ACEH

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Abstract

The agricultural sector is a fundamental pillar of the economy of West Aceh Regency, but it is currently facing a food space emergency. There has been a massive reduction in prime rice paddy land from 10,153 hectares to 9,822 hectares due to high pressure from commercial land conversion and climate vulnerability, resulting in stagnant rice productivity (6.30 metric tons per hectare). Ironically, amid this downturn, substitute crops such as legumes and other non-rice crops have actually experienced a surplus of up to 313.45%, triggering a shift in farmers' rationality and planting preferences. This study aims to formulate strategic policy alternatives to safeguard regional food sovereignty. Using a qualitative approach with a case study design, data were collected through document review and structured interviews. Root-cause analysis was conducted using the USG method and Fishbone Diagram, followed by strategic mapping via the SWOT Matrix (IFE: 2.20; EFE: 2.30), which placed the region in the Defensive Quadrant. Three policy options were evaluated using William Dunn's criteria. The evaluation results recommend the "Progressive Fiscal Incentive Scheme and Regional Risk Guarantee" as the best policy (Score: 27). This Policy Paper recommends the enactment of a Regent's Regulation on an integrated compensation package that combines a spatial moratorium (land lock-in of 9,822 Ha), a 100% exemption from Land and Building Tax (PBB), and coverage of Rice Farming Insurance (AUTP) premiums through the Regional Budget (APBD), in order to ensure farmers' welfare and halt land conversion in a fair and equitable manner.

Keywords: *Land-Use Conversion, Food Security, Public Policy, Fiscal Incentives, Agricultural Insurance, West Aceh Regency.*

Abstrak

Sektor pertanian merupakan pilar fundamental perekonomian Kabupaten Aceh Barat, namun saat ini tengah menghadapi krisis darurat ruang pangan. Terjadi penyusutan masif lahan baku sawah dari 10.153 Hektar menjadi 9.822 Hektar akibat tingginya tekanan alih fungsi lahan komersial dan kerentanan iklim, yang berakibat pada stagnasi produktivitas padi (6,30 Ton/Hektar). Ironisnya, di tengah keterpurukan ini, komoditas substitusi palawija justru mengalami surplus hingga 313,45%, memicu pergeseran rasionalitas dan preferensi tanam petani. Kajian ini bertujuan merumuskan alternatif kebijakan strategis guna menyelamatkan kedaulatan pangan daerah. Menggunakan pendekatan kualitatif dengan desain studi kasus, data dikumpulkan melalui telaah dokumen dan wawancara terstruktur. Analisis akar masalah dilakukan menggunakan metode USG dan Diagram Fishbone, dilanjutkan dengan pemetaan strategis melalui Matriks SWOT (IFE: 2,20; EFE: 2,30) yang menempatkan daerah pada Kuadran Defensif. Tiga opsi kebijakan dievaluasi menggunakan kriteria William Dunn. Hasil evaluasi merekomendasikan "Skema Insentif Fiskal Progresif dan Penjaminan Risiko Daerah" sebagai kebijakan terbaik (Skor: 27). Policy Paper ini merekomendasikan pengesahan Peraturan Bupati tentang paket kompensasi terpadu yang memadukan moratorium spasial (penguncian lahan 9.822 Ha), pembebasan Pajak Bumi dan Bangunan (PBB) 100%, dan penanggungan premi Asuransi Usaha Tani Padi (AUTP) melalui APBD, guna menjamin kesejahteraan petani dan menghentikan pendarahan konversi lahan secara berkeadilan.

Kata Kunci: *Alih Fungsi Lahan, Ketahanan Pangan, Kebijakan Publik, Insentif Fiskal, Asuransi Pertanian, Kabupaten Aceh Barat.*

INTRODUCTION

Background

Global food security is currently facing unprecedented structural pressures due to population surges and a prolonged climate crisis. Agricultural land which is essentially the cornerstone of a nation's sustainability and self-reliance is now increasingly squeezed by the massive pace of urbanization and industrial expansion. In the national context, ensuring the availability of rice as a staple food is a crucial indicator for measuring social stability and poverty rates. Failure to secure domestic food supplies and protect productive land can trigger systemic vulnerabilities that lead to political instability in a region. Strengthening protections for the agricultural sector is no longer merely a matter of economic fulfillment but an absolute national security priority. Productive agricultural land absolutely requires strict protection from various threats of land conversion driven by short-term commercial gains. Unfortunately, the reality on the ground reveals an alarming trend of shrinking food-producing areas across nearly the entire country. This chronic phenomenon demands a collective awareness among policymakers to prioritize land-use regulations that are farmer-friendly.

The conversion of agricultural land into residential and infrastructure areas has become one of the most devastating threats to food security in Indonesia. The massive conversion of rice paddies is directly correlated with a drastic decline in local food production capacity over the past decade. The demand for space to build physical infrastructure continues to mount, encroaching upon fertile lands that were once the mainstay of the community's food supply. The problem of accelerated land conversion is also strongly fueled by weak law enforcement and inconsistent land-use regulations across various autonomous regions. As a result, much of the prime agricultural land has been permanently transformed into concrete without any commensurate efforts to replace it with alternative land. If left unchecked without progressive government intervention, this rate of conversion will decisively threaten the food sovereignty and rights of future generations.

At the regional level, Aceh Province historically known as one of the nation's key food-producing regions at the western tip of the archipelago has not been spared from this destructive cycle of land conversion. The dynamics of regional economic growth in Aceh have created a sharp sociological dilemma between the urgent need to expand built-up areas and the moral imperative to preserve the extent of prime rice paddies. The misalignment between regional development policy documents and agrarian protection mandates in Aceh has triggered severe stagnation in the competitiveness of the food crop sector. Local farmers, who are at the forefront of production, are beginning to feel squeezed, losing access to irrigation, and losing motivation as their production spaces erode. Harmonizing regional economic growth targets with the preservation of land's ecological functions has become a key bureaucratic challenge that must be urgently addressed.

West Aceh Regency, as one of the strategic hubs on the western coast of Aceh Province, has in fact positioned the agricultural sector as the main backbone of its local economy. The agriculture, forestry, and fisheries sectors have consistently proven to be key pillars contributing to the fundamental structure of the regional economy. Given their immense significance, the growth trends and health of these sectors are crucial determinants of the well-being of the majority of residents living in rural areas. However, this vast natural potential has not yet been fully and inclusively capitalized upon due to various structural and governance dysfunctions. Land governance that is not integrated with a people-centered economic roadmap often serves as a major obstacle to boosting farmers' income at the village level.

Despite the immense potential of this economic pillar, the current reality shows that West Aceh Regency is plunging into a very real emergency crisis of shrinking food production areas. According to the official Strategic Plan (Renstra) of the West Aceh Regency Department of Food Crops and Horticulture (DPTPH) for 2025–2029, there is a deeply concerning trend of declining

rice field area plummeting from 10,153 hectares to just 9,822 hectares. The loss of more than 300 hectares of productive land in such a relatively short period serves as a danger signal for the sustainability of the region's subsistence food supply. The unchecked conversion of agricultural land left without judicial oversight will devastate the Sustainable Food Crop Farmland (LP2B) ecosystem and shatter the dream of food self-sufficiency. The structured and massive spatial shrinkage of rice paddies has a direct impact on the local government's failure to meet its Key Performance Indicators (KPIs).

The immediate domino effect of the loss of hundreds of hectares of rice paddies is a severe stagnation in rice productivity in West Aceh Regency. Rice productivity has stalled at 6.30 metric tons per hectare, far below the government's targeted growth projections. This structural problem is further exacerbated by a series of extreme climate anomalies that trigger hydrometeorological disasters, such as widespread drought during the dry season and flash floods at the end of the year. The resilience of rice crops is highly vulnerable to the pressures of suboptimal land conditions and drastic changes in rainfall patterns in the West Aceh region. Without the support of crop failure insurance schemes and a robust irrigation infrastructure for disaster mitigation, farmers are left to bear the unimaginable financial risks on their own.

Ironically, amid the ongoing decline in rice harvest targets, West Aceh Regency has actually recorded a striking anomaly in the performance of other commodity subsectors, creating a unique agrarian paradox. Production figures for non-rice crops unexpectedly surged sharply, reaching 313.45 percent far exceeding the set target. This explosion in non-rice crop production serves as a strong sociological indicator of a shift in farmers' rationality and preferences, as they have become increasingly apathetic toward the high risks associated with rice farming. This kind of spatial food paradox often emerges when farming communities flock to save their household economies by switching to substitute non-rice crops that are nutrient-intensive yet resilient to extreme weather. Balancing these two sides of the agricultural coin is no easy task, as it is hindered by classic problems such as the fragility of farmers' institutions and the collapse of downstream value chains. The mirage of digital disruption in various rural areas has proven ineffective in scaling up farmers' business capacity because farmers' groups still have a "beggar mentality" and are managerially fragile.

Based on the constellation of issues outlined above, the main research question in this study is the massive decline in the area of prime rice fields due to weak regulatory protection of spatial planning and high economic rent pressures from land-use conversion, which systematically undermine rice productivity targets and threaten regional food sovereignty. This problem is not merely a theoretical assumption but an empirical reality that is thwarting the achievement of the region's key performance indicators. The stagnation of rice productivity, which has remained at 6.30 metric tons per hectare, will certainly not be able to be boosted by relying solely on production assistance if the area under cultivation continues to shrink. This multidimensional crisis calls for progressive, binding, and solution-oriented policy alternatives to ensure the sustainability of the agricultural ecosystem in West Aceh Regency.

Methodology

To comprehensively analyze and address these research questions, this study is grounded in a qualitative methodology employing a *case study* design. The qualitative approach was deliberately chosen to conduct *an in-depth exploration* of the sociological phenomena, ecological determinants, and economic motivations behind the massive conversion of rice fields and the shift in farmers' crop preferences in West Aceh Regency. The case study design was applied because this urgent food security issue is a contemporary phenomenon closely tied to the specific spatial, temporal, and sociopolitical dynamics of the region; consequently, its reality cannot be measured solely through rigid quantitative statistical parameters.

To ensure the validity and triangulation of academic arguments, data collection was strictly derived from two primary sources. Primary data collection was conducted using a *Structured Interview Survey* involving 50 respondents *selected* through *purposive sampling*. This method served as the primary tool for exploring the fundamental motivations, structural grievances, and economic rationales of actors at the grassroots level aspects often overlooked by statistical data. These 50 respondents were selected to be representative, including the Chair of the Farmers' Group Association (Gapoktan), representatives of rice farmers affected by climate anomalies, farmers who have shifted to growing secondary crops, and Field Agricultural Extension Officers (PPL) assigned to key production areas with the highest rates of land loss. The interviews focused in depth on their subjective perceptions of the economic value of land, the effectiveness of existing farmer institutions, and their expectations regarding the form of protective interventions from the local government. Meanwhile, the collection of secondary data was accelerated through a literature review and *a desk review* of a series of official government reports. The document analysis focused on the 2025–2029 Strategic Plan (Renstra) of the West Aceh Regency DPTPH, the 2025 Performance Report of the Agriculture and Plantation Service (LKjIP), the 2026 Work Plan (Renja) of the DPTPH, and official publications from the Central Statistics Agency (BPS), including West Aceh Regency in Figures 2026 and the 2025 People's Welfare Indicators.

The set of empirical data collected was then analyzed using a multi-layered method. In the initial stage, issue screening was conducted using the USG (*Urgency, Seriousness, Growth*) matrix to validate the urgency of land degradation as *the core issue*, the root causes of which were then dissected using *a Fishbone Diagram*. The peak analysis phase was executed using the SWOT Matrix (*Strengths, Weaknesses, Opportunities, Threats*), which was elaborated into an analytical narrative. Primary and secondary data were quantified using the *Internal Factor Evaluation* (IFE) matrix to measure the strengths and weaknesses of the region's internal governance, as well as the *External Factor Evaluation* (EFE) matrix to assess the region's capacity to respond to downstream development opportunities and threats such as land conversion and climate anomalies. The cross-scores from the IFE and EFE are then projected into a TOWS *cross-impact analysis* matrix to formulate adaptive alternative policy options. In the final stage, the resulting policy alternatives are evaluated comparatively using *William Dunn's* policy evaluation criteria (which include effectiveness, efficiency, adequacy, equity, responsiveness, and appropriateness) to determine a single policy recommendation that is most implementable and equitable for farmers in West Aceh Regency.

ANALYSIS AND DISCUSSION

2.1 Theoretical Framework and Policy Gaps in the Agricultural Trade System

To unravel the complexity of the food security crisis in West Aceh Regency, this analysis is grounded in *Land Rent Theory*, which explains that land conversion occurs due to economic value disparities. Land will be rationally allocated by its owners for uses that yield the highest financial returns. In the reality of West Aceh, high price offers from the real estate and commercial sectors create an extremely high *opportunity cost* for farmers if they continue to maintain their rice fields, especially when rice productivity has stagnated at 6.30 metric tons per hectare. As an antithesis to this threat, the Concept of Sustainable Food Agricultural Land (LP2B) mandates that productive land is an ecological asset with a social function, thus requiring strict spatial protection by the state through incentive-based compensation. Furthermore, the Agricultural Disaster Risk Reduction (DRR) Concept views hydrometeorological disasters not merely as incidents, but as systemic threats.

However, this theoretical foundation clashes sharply with gaps in trade policy on the ground. The lack of post-harvest infrastructure and downstream processing ecosystems means that production surpluses such as the 313.45 percent surge in secondary crop production cannot be

capitalized on to generate tangible well-being. Although digital penetration among rural communities in West Aceh is very high, reaching 72.99 percent, this modernization has proven ineffective in scaling up business capacity because the institutional framework of farmers' groups (Gapoktan) remains managerially fragile. As a result, the commercial distribution chain remains entirely controlled by middlemen, and the absence of a downstream processing blueprint causes economic *value added* to flow out of the region.

Review of Existing Regulations and Field Dynamics

The government has, in principle, established regulations for land protection through Law No. 41 of 2009 on the Protection of LP2B Areas, which mandates the designation of LP2B zones in local regulations. Unfortunately, in West Aceh Regency, this policy has not been properly implemented because the delineation of these zones is often outpaced by the issuance of housing location permits, compounded by the lack of real fiscal incentives allocated in the Regional Budget (APBD). The West Aceh Regency Qanun on the Regional Spatial Plan (RTRW) also still leaves loopholes for exemptions in the name of economic growth, a situation exacerbated by the lack of a Detailed Spatial Plan (RDTR) with micro-level operational authority.

These regulatory weaknesses intersect with on-the-ground dynamics that are being battered by an escalation of hydrometeorological disasters. Extreme rainfall intensity triggering flash floods, as well as shifting climate cycles causing severe droughts during the dry season, have damaged micro-irrigation infrastructure. Rice fields that are routinely flooded or cracked due to drought have experienced a drastic degradation in soil fertility. Farmers who have repeatedly experienced crop failures (*puso*) without adequate insurance protection have ultimately come to view their rice fields as high-risk assets, leading to the release of land into the real estate market or a shift to other commodities.

Analysis of the IFE, EFE, and SWOT Quadrant Matrices

The strategic capacity of West Aceh Regency was quantified using the *Internal Factor Evaluation* (IFE) and *External Factor Evaluation* (EFE) matrices. The IFE analysis indicates that the region possesses internal strengths in the form of agriculture's historical position as the primary contributor to the Regional Gross Domestic Product (weighted score of 0.45), farmers' high adaptability with a surplus of secondary crops (weighted score of 0.60), and rural digital penetration of 72.99 percent (weighted score of 0.30). However, these strengths are undermined by severe internal weaknesses, namely weak enforcement of land-use regulations and the absence of LP2B incentives (weighted score of 0.20), stagnation in agronomic technology (weighted score of 0.30), managerial fragility within farmers' groups (Gapoktan) (weighted score of 0.20), and the lack of a downstream processing ecosystem (weighted score of 0.15). The total IFE score obtained is 2.20, which is below the average of 2.50, demonstrating that the local government is currently in a position of internal weakness.

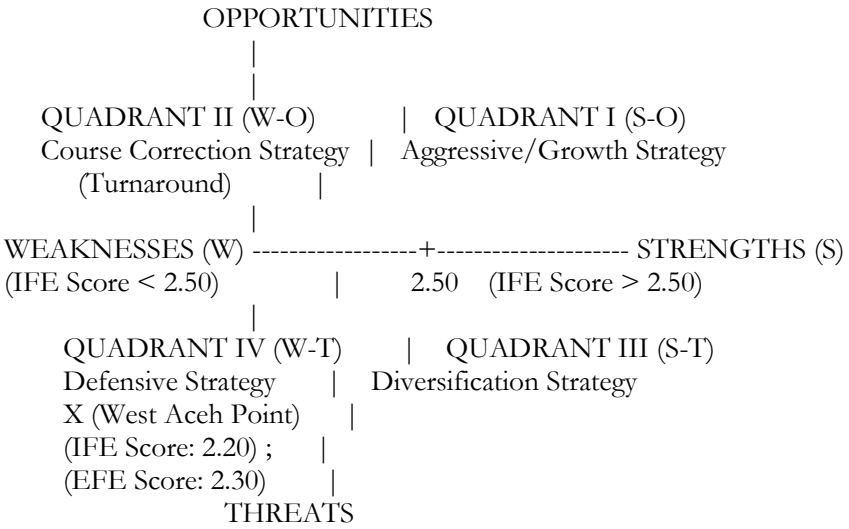
On the other hand, the EFE analysis measures responses to the external environment. The region has opportunities stemming from the upward trend in the regional market for food diversification (weighted score of 0.60), the availability of Village Fund/DAK financing instruments (weighted score of 0.45), and strategic attention from Bappenas (weighted score of 0.30). The threats faced are very serious, including the aggressive expansion of commercial housing (weighted score of 0.25), the escalation of hydrometeorological anomalies (weighted score of 0.40), and the crisis of farmer succession or *an aging farming population* (weighted score of 0.30). The total EFE score stands at 2.30, confirming that West Aceh Regency's resilience in the face of external pressures remains reactive and vulnerable.

The intersection of the total IFE score (2.20) and the total EFE score (2.30) places the agricultural sector of West Aceh Regency precisely in Quadrant IV the Defensive/Survival

quadrant on the SWOT matrix diagram. An analysis of these coordinates leads to the clear conclusion that the region is facing a crisis, where severe internal weaknesses are directly confronted by deadly external threats. Being in this quadrant confirms that expansive policies or business-as-usual approaches constitute a strategic failure, thus demanding a radical *survival strategy*.

To determine the most precise policy direction, both scores are plotted on a Cartesian SWOT Matrix Diagram. The X-axis represents the internal axis (Weaknesses vs. Strengths), and the Y-axis represents the external axis (Threats vs. Opportunities).

Figure 1. Visualization of the Agricultural Sector Strategy Quadrant Diagram West Aceh Regency



Synthesis of Policy Strategies through the TOWS Matrix

To address this defensive position, alternative policy formulations were derived using the TOWS Matrix, resulting in four strategic quadrants. The *Strengths-Opportunities* (S-O) strategy focuses on the corporatization of integrated digital agriculture, leveraging farmers' adaptability and internet penetration to capitalize on market opportunities for secondary crops through the Village Fund. The *Weaknesses-Opportunities* (W-O) strategy focuses on developing an agro-industrial downstream ecosystem by designing strategic proposals for the central government to build modern drying and milling facilities to address the lack of post-harvest infrastructure. Furthermore, the *Strengths-Threats* (S-T) Strategy promotes climate-adaptive commodity zoning, shifting from reactive cropping patterns to spatial mapping that aligns crop varieties with the region's hydrometeorological vulnerabilities.

As the cornerstone of this document, the *Weaknesses-Threats* (W-T) Strategy is established as an absolute priority, namely progressive spatial protection and incentive-based compensation. This defensive strategy is designed to minimize regulatory loopholes while curbing the aggressiveness of commercial developers. The main policy direction is to impose a moratorium on land-use conversion permits for the remaining 9,822 hectares of prime rice fields through a Regent's Regulation, accompanied by a cross-subsidy scheme consisting of an exemption from Land and Building Tax (PBB) and full coverage of Rice Farming Insurance (AUTP) premiums funded by the Regional Budget (APBD). This synthesis of the TOWS strategy ensures that safeguarding West Aceh's food sovereignty does not rely solely on legal prohibitions but also comprehensively addresses the economic viability of its farmers.

POLICY OPTIONS

Description of Policy Alternatives

The formulation of policy alternatives is a crucial and strategically significant stage in this study to address the food security crisis in West Aceh Regency. Based on the results of the quadrant diagnosis and the TOWS matrix from the previous analysis, three progressive policy alternatives have been formulated, each designed with different philosophical foundations and intervention instruments.

The first policy alternative is a moratorium on land-use conversion through rigid spatial regulations, employing a legal-regime approach. This policy focuses on strengthening legal-formal aspects to immediately halt the conversion of prime rice fields by issuing a Regent's Regulation (Perbup) on the Detailed Spatial Plan (RDTR). This policy establishes absolute zoning for Sustainable Food Agricultural Land (LP2B) for the remaining 9,822 hectares of land by imposing strict administrative sanctions, including the suspension of building permits for commercial housing developers whose projects encroach on agricultural green zones.

The second policy alternative offers a progressive fiscal incentive scheme and risk guarantees for local rice farming businesses through a compensation regime approach. This option employs a humanistic economic approach to curb farmers' willingness to relinquish their land due to external land rent pressures. Under this scheme, the local government provides tangible compensation in the form of a 100 percent exemption from Land and Building Tax (PBB) specifically for owners of rice paddy fields included within the LP2B delineation. To mitigate farmers' frustration caused by stagnant productivity at 6.30 metric tons per hectare and the threat of hydrometeorological disasters such as floods and droughts, this option mandates the allocation of the Regional Revenue and Expenditure Budget (APBD) to fully fund premiums for Rice Farming Insurance (AUTP).

The third policy alternative is the transformation of farmer corporations based on a digital downstream agro-industrial ecosystem that employs a market-based approach. This option addresses structural weaknesses in the agricultural value chain from upstream to downstream by leveraging external capital and digital infrastructure. Given that rural internet penetration in West Aceh is very high reaching 72.99 percent this option promotes the consolidation of traditional Farmers' Group Unions (Gapoktan) into modern cooperative-based farmer corporations. This policy mandates the collective use of Village Fund Allocations (ADD) to build post-harvest downstream infrastructure, such as modern milling facilities and grain dryers, while integrating the marketing system for secondary crops which have a surplus of up to 313.45 percent through digital platforms to break the stranglehold of middlemen.

These three policy options share a single vision: to save what remains of West Aceh Regency's food production capacity from extinction, improve farmers' well-being at the grassroots level, and close the gap in achieving the region's key performance indicators. The fundamental differences lie in the intervention instruments and the focus of budgetary allocation. The first option relies on a top-down law enforcement approach with minimal financial costs but carries a high risk of political and social conflict. The second option relies on upstream intervention through direct financial stimulus that draws on the region's local budget (APBD) to mitigate economic volatility among farmers. Meanwhile, the third option shifts the intervention to the downstream market sector through the restructuring of independent institutions that rely on the synergy between the Village Fund and digitalization.

Methodology for Evaluating and Selecting the Best Policy Alternative

To determine which option is the most feasible and rational to recommend, these three alternatives were evaluated comparatively using William Dunn's policy analysis method. The

evaluation was based on six standard criteria covering effectiveness, efficiency, adequacy, equity, responsiveness, and appropriateness.

In terms of effectiveness, the second option received the highest score because crop failure insurance and tax exemptions directly address farmers' deepest motivations for refusing to sell their land, thereby giving them the security to retain their rice fields even in the face of climate-related disasters. The first option is considered effective on paper, but risks triggering under-the-table violations because it does not address farmers' economic pressures. In terms of efficiency, the first option received a perfect score because the legal instrument a Regent's Regulation does not drain the regional budget on a massive scale. Conversely, the second option received the lowest score on this criterion because it requires a significant and sustained commitment to reallocating fiscal space within the Regional Budget (APBD). Under the adequacy criterion, the second option is deemed the most appropriate because it resolves two issues simultaneously: halting voluntary land conversion and mitigating financial losses resulting from hydrometeorological disasters.

Under the fairness criterion, the second option is clearly superior because it provides tangible welfare compensation to farmers whose economic rights are restricted by the LP2B lockdown regulations. Conversely, the first option is deemed less fair because it forces farmers to retain unprofitable rice fields without compensation. In terms of responsiveness, the second option is highly responsive because it directly addresses West Aceh farmers' primary fear of the high risk of hydrometeorological anomalies. Finally, under the accuracy criterion, the third option scores the highest because it aligns with West Aceh's demographic profile, which already features high rural internet penetration to support the modernization of agricultural trade systems.

Based on the aggregated scores in the William Dunn evaluation matrix, the second policy option which offers a progressive fiscal incentive scheme and risk guarantees for local rice farming emerges as the best choice with the highest total score of 27, surpassing the third option, which scored 24, and the first option, which scored 21. The second option proved to have an absolute advantage in the criteria of effectiveness, adequacy, equity, and responsiveness, as it directly addresses farmers' most critical challenges. However, to achieve optimal results, this study establishes an integrated strategy formula in which the second policy option is designated as the main policy pillar, while borrowing the instruments of the first policy option to serve as the legal framework for regional lockdowns.

RECOMMENDATIONS AND CONCLUSIONS

Policy Recommendations

To address the urgent food security crisis, the single, comprehensive, and structural policy recommendation submitted to the West Aceh Regency Government is the enactment of the "Regent's Regulation on the Fiscal Incentive Policy Package for the Protection of Sustainable Food Agricultural Land and Integrated Agricultural Disaster Risk Insurance with a Spatial Moratorium."

This recommendation is directly addressed to the Regent of West Aceh as the holder of the highest regulatory authority, with the mandate for sectoral technical implementation delegated to the Head of the Regional Development Planning Agency (Bappeda), the Head of the Food Crops and Horticulture Service (DPTPH), and the Head of the Regional Financial Management Agency (BPKD). Legally, the substance of this regulation will mandate a concrete intervention in the form of an absolute moratorium on all new land-use conversion permits issued on the remaining 9,822 hectares of delineated prime rice paddy land. In addition, this policy automatically grants a 100 percent exemption from Land and Building Tax (PBB) to all farmers who own rice paddy plots within the moratorium zone, and mandates the allocation of the Regional Budget (APBD) to fully cover the premiums for Rice Farming Insurance (AUTP) for protected land. This recommendation

fundamentally shifts the burden of conservation from farmers to local fiscal responsibility, encouraging farmers to voluntarily resist incentives for commercial land conversion.

Roadmap for Implementing Policy Recommendations

To ensure these strategic policy recommendations can be implemented in a measurable manner, a five-year implementation *roadmap* has been developed that binds various local government entities.

- **First Year (2026): Legalization and Absolute Spatial Delineation Phase.**
  Key activities include the formulation and ratification of a Regent's Regulation on a moratorium on land conversion and land incentives, as well as *ground checks* to lock in the coordinates of remaining prime rice fields based on names and addresses. The main actors involved are the Regent, the Regional Development Planning Agency (Bappeda), the Legal Affairs Division, and the Land Office. Success indicators include the official issuance of the Regent's Regulation and the availability of a digital delineation map of protected rice fields.
- **Year Two (2027): Fiscal Integration and Digital Insurance Registration Phase.**
  The focus shifts to implementing property tax (PBB) exemptions for rice fields through the local tax system, accompanied by the mass registration of farmers into the AUTP program, for which premiums are paid by the local government. The responsible actors are the Head of the Regional Finance Office (BPKD) and the Head of the Regional Agriculture and Food Security Agency (DPTPH), assisted by Field Agricultural Extension Officers (PPL). Success is measured by the issuance of tax exemption decisions and the achievement of a 100 percent insurance registration rate for farmers in disaster-prone zones.
- **Year Three (2028): Implementation Phase for Protection and Enforcement of Spatial Planning Laws.**
  The local permitting system is configured to automatically reject all building permit applications on LP2B land. Spatial monitoring patrols by the Satpol PP-WH are intensified, alongside a mechanism for direct disbursement of insurance claims to farmers' bank accounts in the event of crop failure. The expected success indicator is the halting of the rate of rice field area loss to zero percent in the protection zone.
- **Year Four (2029): Production Intensification and Downstream Synergy Phase.**
  Local governments will distribute packages of agronomic technology and high-precision early-maturing seeds exclusively to locked-in land. Farmer groups are encouraged to utilize the Village Fund Allocation to build rice processing centers and manage surplus secondary crops. The success indicator is a sustained increase in rice productivity beyond the stagnation threshold from 6.30 metric tons per hectare to 6.80 metric tons per hectare.
- **Year Five (2030): Macro-Institutional Consolidation and Evaluation Phase.**
  This phase includes a comprehensive audit of the effectiveness of regional incentives in increasing the Farmers' Terms of Trade (NTP). Additionally, it is proposed to elevate the regulatory status from a Regent Regulation (Perbup) to a Regency Qanun to ensure that land protection policies remain permanent across leadership transitions. Achievements will be measured by the permanent preservation of 9,822 hectares of food production areas and the attainment of stable regional food self-sufficiency.

Conclusion

The crisis of shrinking prime rice field land in West Aceh Regency from 10,153 hectares to 9,822 hectares is not merely a matter of losing green spaces, but rather a structural dysfunction that undermines the rice productivity target of 6.30 metric tons per hectare. The results of the quadratic diagnosis indicate that the region is in a defensive position (Quadrant IV), where weaknesses in internal regulatory governance are vulnerable to exploitation by the aggressive rent-seeking of the

non-agricultural sector and are exacerbated by the trauma of crop failures caused by hydrometeorological disasters. Resolving this issue can no longer rely solely on routine technical approaches. A policy leap is needed that integrates legally mandated land-use restrictions with the provision of fair economic compensation for farmers at the grassroots level. The enactment of progressive fiscal incentive policies and insurance guarantees tied to a land-use moratorium represents the most rational and humane course of action to ensure food sovereignty and the well-being of farmers in West Aceh Regency.

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