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ESCAPING THE TRAP: A STRATEGY FOR INTEGRATING HYDROMETEOROLOGICAL RESILIENCE TO ACHIEVE THE TARGETS OF NORTH ACEH'S 2025–2029 RPJMD

Muhammad Iskandar
Bappeda, North Aceh Regency
Email: *miskandar.0470@yahoo.com*

ABSTRACT

Annual hydrometeorological disasters in North Aceh Regency consistently erode agricultural sector productivity and hinder improvements in the Human Development Index (HDI). Ironically, the architecture of the Regency Revenue and Expenditure Budget (APBK) in the draft 2026 PPAS remains trapped in a reactive-curative emergency response paradigm. This qualitative case study aims to comprehensively analyze the budget structure using SWOT analysis, William Dunn's evaluation criteria, and the involvement of 50 local planning officials as key respondents. Quantitative results indicate that the region is trapped in Quadrant IV (Defensive) with an IFE score of 2.10 and an EFE score of 1.90, demonstrating the fragility of local fiscal resilience in the face of climate shocks. Therefore, this policy paper recommends the issuance of a Regent's Regulation regarding the institutionalization of Risk-Based Budgeting through an earmarking scheme allocating at least 10% of the pure discretionary budget for the development of pre-disaster mitigation infrastructure in the upper reaches of rivers. This radical shift from downstream to upstream is a crucial, human-centered step aimed at freeing rural communities from the "loss and damage trap" while ensuring the achievement of the macro targets of the 2025–2029 Regional Medium-Term Development Plan (RPJMD).

Keywords: *Risk-Based Budgeting, Hydrometeorological Disasters, Fiscal Resilience, North Aceh, Policy Paper.*

ABSTRAK

Bencana hidrometeorologi tahunan di Kabupaten Aceh Utara secara konsisten menggerus produktivitas sektor pertanian dan menghambat peningkatan Indeks Pembangunan Manusia (IPM). Ironisnya, arsitektur Anggaran Pendapatan dan Belanja Kabupaten (APBK) dalam draf PPAS 2026 masih terjebak dalam paradigma reaktif-kuratif tanggap darurat. Penelitian kualitatif dengan desain studi kasus ini bertujuan membedah komprehensif struktur anggaran tersebut menggunakan analisis SWOT, kriteria evaluasi William Dunn, serta pelibatan 50 aparatur perencana daerah sebagai responden kunci. Hasil kuantifikasi menunjukkan posisi daerah terperangkap di Kuadran IV (Defensif) dengan skor IFE 2,10 dan EFE 1,90, yang membuktikan rapuhnya ketahanan fiskal lokal menghadapi syok iklim. Oleh karena itu, naskah kebijakan ini merekomendasikan penerbitan Peraturan Bupati terkait pelembagaan Risk-Based Budgeting melalui skema earmarking (pencadangan khusus) minimal 10% anggaran diskresionari murni untuk pembangunan infrastruktur mitigasi prabencana di hulu sungai. Transformasi radikal dari hilir ke hulu ini merupakan langkah krusial yang bersifat humanis guna membebaskan masyarakat pedesaan dari jebakan kerugian abadi (loss and damage trap) sekaligus mengamankan target makro RPJMD 2025–2029.

Kata Kunci: Risk-Based Budgeting, Bencana Hidrometeorologi, Ketahanan Fiskal, Aceh Utara, Policy Paper.

INTRODUCTION

Background of the Issue

Global climate change has triggered an escalation of hydrometeorological disasters that fundamentally threaten economic stability and social cohesion across

various parts of the world. According to a 2023 assessment by the Intergovernmental Panel on Climate Change (IPCC), the intensity of extreme rainfall has increased significantly and drastically altered weather patterns over the past decade. These climate anomalies align with the World Bank's comprehensive findings in 2024, which confirmed that developing countries must swallow the bitter pill of gross domestic product losses reaching up to two percent annually solely due to the impact of natural disasters. At the national level, the National Disaster Management Agency (BNPB) recorded an alarming trend in 2025, with floods and landslides accounting for more than ninety percent of disaster incidents in Indonesia. This massive vulnerability imperatively demands a reorientation of development policies to be far more resilient to climate risks, as strategically emphasized by Bappenas in 2024 in the national macroeconomic framework document.

Aceh Province is one of the regions with the highest level of vulnerability to weather anomalies along the coastline of Sumatra. According to the Indonesian Disaster Risk Index analysis released by BNPB in 2024, Aceh Province consistently falls within the red zone for the threat of flash floods and widespread flooding. In line with this report, an in-depth geoscientific study by Syamsidik et al. (2023) highlights the fact that environmental degradation in upstream areas and radical changes in land use have exacerbated the destructive power of water during the peak of the rainy season. The 2025 annual disaster report from the Aceh Disaster Management Agency (BPBA) also confirms the severity of this situation, noting that losses to public infrastructure due to flooding in Aceh reach trillions of rupiah each year. This argument is further reinforced by the findings of Rahman and Hakim (2024), who state that without radical structural interventions by policymakers, this disaster cycle will continue to repeat itself and systematically erode the achievements of regional infrastructure development.

In a more specific and urgent local context, North Aceh Regency has become the epicenter of recurring hydrometeorological crises in Aceh, requiring specialized governance measures. The publication "North Aceh in Figures" by the Central Statistics Agency (BPS) of North Aceh Regency in 2026 clearly illustrates the reality that most subdistricts in this region are highly vulnerable to flooding caused by overflowing water from the Krueng Pase and Krueng Keureuto rivers. Applied spatial analysis conducted by Pratiwi and Hidayat (2025) further reveals the technical fact that the district's macro-drainage system no longer possesses sufficient capacity to accommodate annual peak water flows. A 2025 historical report by the North Aceh Regency Disaster Management Agency (BPBD) also underscores that flood frequency has not only increased in terms of frequency but that the duration of flooding in residential areas has also lengthened significantly. A comprehensive spatial planning study by Mulyadi (2024) ultimately confirms the urgent need for a holistic redesign of water management in this administrative region.

The destructive impact of these hydrometeorological disasters has directly undermined the economic foundation of North Aceh Regency, which historically and structurally remains heavily dependent on the vitality of the agricultural sector. According to the Regional Gross Domestic Product (GRDP) report published by the North Aceh Regency Statistics Agency (BPS) in 2026, the agriculture, forestry, and

fisheries sectors serve as the pillars and primary contributors to the local economy. However, a regional economic study conducted by Siregar and Nasution (2025) found that the productivity of this primary sector is extremely vulnerable and often experiences sharp contractions following floods as a result of mass crop failure (puso) and the destruction of pond ecosystems. Factual data compiled by the North Aceh Agriculture Office in 2025 recorded that thousands of hectares of productive agricultural land were submerged and severely damaged every year-end. This series of facts is fully consistent with the analysis by Susanto et al. (2024), who conclusively determined that the cumulative losses in this primary sector have become the primary factor weakening the region's economic growth rate.

This series of macroeconomic losses ultimately has a profoundly negative impact and directly hampers the acceleration of improvements in the people's welfare in North Aceh. The 2025 "Statistics on People's Welfare" publication by the North Aceh Regency Central Statistics Agency (BPS) indicates that vulnerable groups residing in rural areas are the hardest hit by the loss of livelihoods following disasters. Confirming this situation, the Human Development Index (HDI) report from the North Aceh Regency BPS (2025) reveals a stagnant trend in the quality of life, rooted in the continued erosion of people's purchasing power due to food inflation during the floods. A sociological study of disasters conducted by Fauzi and Wulandari (2024) even uncovered a grim empirical fact: families affected by the floods were forced to sacrifice their budgets for basic education and healthcare in order to cover the costs of repairing their destroyed homes. This series of findings is strongly corroborated by the World Bank (2025), which issued a warning that recurring natural disaster shocks pose a very high risk of pushing the vulnerable middle class back below the poverty line.

The North Aceh Regency government has, in principle, formulated various ambitious and measurable development targets in its regional strategic planning documents. The North Aceh Regency Medium-Term Regional Development Plan (RPJMD) for 2025–2029 has established a series of key performance indicators that are strongly focused on the agenda of enhancing the economic self-reliance of the broader community. In addition, the North Aceh Bappeda Strategic Plan (Renstra) for 2025–2029 also sets a target for the realization of a more inclusive, adaptive, and sustainable development planning system at all levels of government. However, a critical evaluation by public policy analyst Suryono (2024) sharply points out that these planning documents are still being implemented as if under normal conditions, without treating disaster mitigation as a genuine controlling variable. This critical view is strongly supported by Bappenas guidelines (2025), which remind regional planning agencies that the RPJMD's macro targets will inevitably fail if local governments neglect to develop robust fiscal buffers against natural disasters.

This gap in policy formulation is most evident in the regional fiscal architecture, where the budget structure remains firmly entrenched in a reactive budgeting paradigm. An in-depth analysis of the draft Priorities and Provisional Budget Ceiling (PPAS) for North Aceh Regency for 2026 reveals a tendency for funding allocations to be predominantly directed toward sporadic social safety net provisions such as the distribution of Zakat, Infaq, and Sadaqah (ZIS) rather than focused on macro-scale

preventive infrastructure investments. An analysis of public financial management released by Halim and Kusumawati (2025) sharply criticizes the bureaucracy's excessive reliance on the Unforeseen Expenditures (BTT) line item for emergency response, arguing that this places a heavy burden on and constricts the region's fiscal space in the long term. This "budget trap" phenomenon was validated through mapping using the *Urgency, Seriousness, Growth* (USG) framework and an analysis of causal roots via a *fishbone* diagram, which demonstrated that the reactive nature of the APBK stems from a fragmented planning system and a lack of a legal framework for budget protection. Based on this series of factual arguments, the main research question in this policy study focuses on the inability of North Aceh Regency's fiscal architecture and regional planning system to shift the budgeting paradigm from a reactive phase to a proactive phase of pre-disaster mitigation, which directly threatens the failure to achieve the 2025–2029 RPJMD targets due to the persistent depletion of the APBK.

Methodology

This research was conducted using a qualitative approach, adopting an in-depth single-case study design. The qualitative approach was deliberately chosen given that the phenomena under study namely, the regional fiscal architecture and the dynamics of bureaucratic sectoral self-interest in responding to hydrometeorological disaster threats are highly dynamic, complex managerial and social entities that cannot be reduced solely to numerical measurement parameters. This case study design focuses specifically on the governance structure of the North Aceh Regency Government, particularly in overseeing the planning cycle for the 2025–2026 fiscal year. By utilizing this design, the study is not intended to generalize issues at the national level, but rather to precisely dissect the institutional anatomy of North Aceh's bureaucracy in order to formulate policy recommendations specifically designed to address real local conditions.

In an effort to develop a study grounded in the principles of evidence-based policy, the line of reasoning is constructed using a triangulation technique that rigorously combines two primary data sources. First, secondary data was collected through a document review of legally valid regulations and regional planning documents. This data was systematically extracted from the draft of the 2026 Priorities and Provisional Budget Ceiling (PPAS) for North Aceh Regency, the 2025–2029 Regional Medium-Term Development Plan (RPJMD), and the 2025–2029 Strategic Plan of the Regional Development Planning Agency (Bappeda). The ranking of policy issues was also precisely calibrated using macroeconomic data from the Central Statistics Agency (BPS), which includes the publication *North Aceh in Figures* (2026), the Human Development Index (2025), the People's Welfare Statistics (2025), and a breakdown of the Gross Regional Domestic Product (GRDP) by economic sector to measure the level of vulnerability in the agricultural sector.

Second, primary data collection was conducted through the use of an open-ended questionnaire distributed to fifty *key informants*. Sampling was carried out using *purposive sampling* to ensure a comprehensive representation of the disaster planning and management ecosystem in the region. These fifty key informants directly represent

members of the Regional Government Budget Team (TAPD), functional planning officials within the Regional Development Planning Agency (Bappeda), heads of planning subdivisions from District Government Work Units (SKPK) directly involved with infrastructure and disaster management (such as the Public Works and Public Housing Agency, the Regional Disaster Management Agency, the Agriculture Agency, and the Social Affairs Agency), as well as strategic representatives from the subdistrict level in areas with the most severe flood-affected track records. The use of an open-ended questionnaire was designed to allow respondents to honestly and objectively describe the conflicting interests, sectoral egos, and constraints of limited fiscal space that have long been the main obstacles to shifting the budget allocation toward pre-disaster mitigation investments.

The subsequent data analysis phase was implemented through a synthesis process using a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis framework specifically modified for the public policy context. Rather than being used conventionally, this analytical tool is focused on precisely assessing the institutional capacity of the North Aceh Regency Government through the Internal Factors Evaluation Matrix (IFE) and the External Factors Evaluation Matrix (EFE). The results of multiplying the weights and rankings from both matrices are then projected into the SWOT Quadrant to visualize the region's strategic position. In the final stage, the coordinates of these quadrants serve as the fundamental basis for formulating the *Threats, Opportunities, Weaknesses, Strengths* (TOWS) matrix, which proactively cross-references internal and external factors to generate alternative policy formulations that are rational, executable, and aligned with the region's fiscal capacity.

ANALYSIS AND DISCUSSION

Theoretical Framework

In an effort to comprehensively analyze the inability of the local fiscal architecture to transition from a reactive paradigm to a proactive one, this study is built upon the foundation of two interrelated conceptual analytical frameworks. The first concept is rooted in the Disaster Management Cycle Theory proposed by Carter (2008) in the global disaster management standards. This theory emphasizes that holistic disaster management essentially encompasses three crucial phases: the pre-disaster phase, which includes mitigation and preparedness; the during-disaster phase, which requires emergency response; and the post-disaster phase, which involves rehabilitation and reconstruction. Conceptually and empirically, a country or local government with strong resilience will dedicate up to seventy percent of its resources to interventions in the pre-disaster phase. Paradoxically, local entities with weak governance will consistently deplete their financial resources by becoming trapped in an endless cycle of emergency response and reconstruction.

The second concept serving as the anchor of this analysis is *Local Fiscal Resilience*. From a public economics perspective, fiscal resilience is defined as a local government agency's ability to absorb financial shocks without compromising the stability of basic public services for its citizens. In the empirical context of North Aceh

Regency, when the local government is persistently forced to cut essential capital expenditure allocations solely to finance repairs for infrastructure damage caused by flooding, the region is, in theory, falling into the vortex of *the* "Loss and Damage Trap." An elaboration of these two concepts underscores that a reorientation toward risk-based budgeting is not merely an administrative option, but an absolute prerequisite for the region's long-term resilience.

Review of Existing Regulations and Field Dynamics

The disaster management agenda has, in principle, been mandated and firmly enshrined in the legal hierarchy of the Republic of Indonesia; however, the reality of its implementation at the regional level often suffers from a substantial dilution of its intended meaning. Law No. 24 of 2007 on Disaster Management has imperatively stipulated that disaster management is by no means merely a temporary, reactive measure, but rather requires the systematic integration of risk reduction efforts into every aspect of development programs. At the local level, the North Aceh Regency Government has, in fact, established a grand vision regarding economic recovery and the enhancement of quality of life, which is neatly outlined in the 2025–2029 Medium-Term Regional Development Plan (RPJMD) and the Bappeda Strategic Plan. Nevertheless, these planning documents still contain critical policy gaps. The RPJMD has not yet strictly and bindingly mandated the implementation of an *earmarking* mechanism or mandatory budget allocation at the SKPK level specifically designated for structural mitigation initiatives.

This gap between ideal regulations and implementation (*das sollen* and *das sein*) is strikingly evident in the draft of the 2026 Priorities and Provisional Budget Ceiling (PPAS). Rather than embodying the spirit of self-reliance enshrined in the Disaster Management Law, the regional budget architecture has proven to be highly defensive and passive in the face of circumstances. This is starkly illustrated by the bureaucracy's high level of dependence on charitable budgetary instruments, such as the allocation of ZIS funds amounting to billions of rupiah for emergency safety nets, as well as the disproportionately large share allocated to the Contingency Expenditure (BTT) line item. This policy disconnect becomes even more alarming when contrasted with the actual dynamics on the ground. The flash floods at the end of 2025, which submerged thousands of hectares of rice fields around the Krueng Pase and Krueng Keureuto River Basins (DAS), serve as evidence of the failure of protective infrastructure. This failure directly crippled the primary sector, triggering a stagnation in the welfare of the rural population and forcing the APBK funds originally earmarked for poverty alleviation to be immediately diverted to meet the emergency needs of victims in evacuation tents.

Analysis of the IFE, EFE, and SWOT Quadrant Matrices

To measure and demonstrate the actual strategic position held by the North Aceh Regency Government in addressing the recurring disaster cycle, all qualitative findings from the pre-SWOT stage were scientifically quantified using the Internal Factor Evaluation Matrix (IFE) and the External Factor Evaluation Matrix (EFE). On the internal dimension, the greatest strength of the local bureaucracy stems from the full authority of Bappeda as the director of regional planning, which holds the power to veto proposals from SKPKs, with a weighted score of 0.60. Strong legal legitimacy through

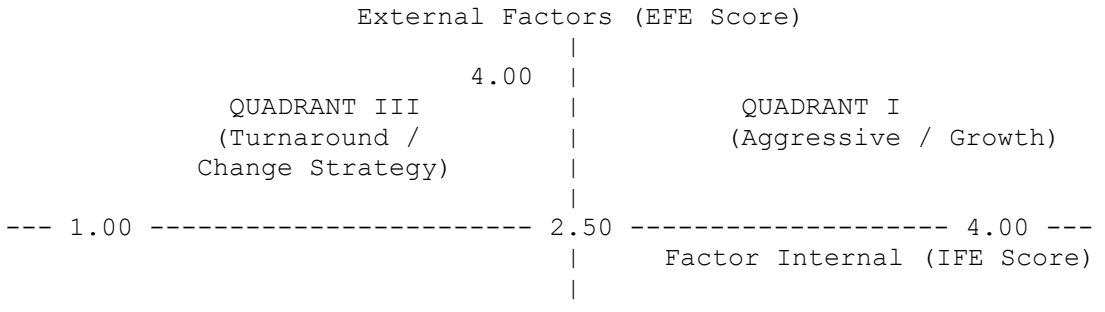
the 2025–2029 Regional Medium-Term Development Plan (RPJMD) Regulation (Qanun) and the existence of the tiered Musrenbang (Regional Development Planning Forum) mechanism for gathering public input also serve as complementary strengths, each achieving weight scores of 0.45 and 0.30, respectively. However, this array of strengths is significantly diminished by an acute structural weakness: limited fiscal space due to the high burden of mandatory expenditures, which received a high weight of 0.25 but the lowest ranking of 1, resulting in a score of only 0.25. This is exacerbated by the 2026 PPAS framework, which remains trapped in a culture of reactive budgeting, as well as the shackles of sectoral egoism among technical SKPKs. The final calculation of the North Aceh Regency IFE Matrix resulted in a total score of 2.10. This figure falls below the average midpoint of 2.50, which empirically reveals that the capacity of the local bureaucracy is currently in a very weak position to resolve the crisis from within.

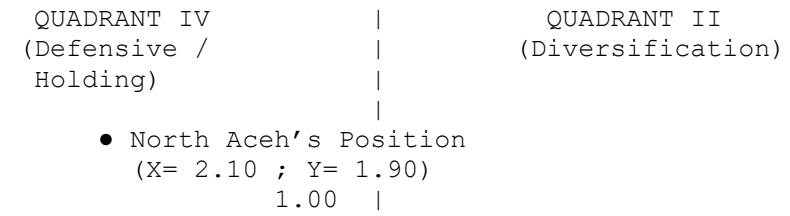
At the same time, the EFE Matrix is designed to measure the responsiveness of the local fiscal policy architecture to various environmental shocks. The greatest opportunity actually lies in national policy support to facilitate the transition toward *Risk-Based Budgeting*, which received a significant weighted score of 0.60. The potential to leverage upstream mitigation funding through the Village Fund and CSR initiatives, coupled with the involvement of academic institutions as partners in hydrological research, also offers promising room for maneuver. However, these potential opportunities are severely undermined by an extraordinary threat in the form of escalating global extreme weather events, which were assigned a maximum threat weight of 0.25 but received the worst response rating of 1, resulting in a score of 0.25. Accompanying threats including the brutal degradation of the watershed's upstream environment and regional inflationary pressures that are choking the purchasing power of the agricultural sector further worsen the external assessment performance. The final result of the EFE Matrix stands at a deeply concerning figure of 1.90, indicating an absolute failure of the existing budgeting strategy to manage threats or capitalize on external opportunities.

Based on the quantification results from the IFE Matrix (Total Score: 2.10) and the EFE Matrix (Total Score: 1.90), the next analytical step is to plot these two coordinate points onto the SWOT Quadrant Matrix (Internal-External Matrix).

The X-axis (horizontal) represents the Internal axis (IFE), while the Y-axis (vertical) represents the External axis (EFE). The midpoint of this matrix is at a value of 2.50, which is the standard threshold for an institution's strategic viability.

Figure 2.1. Visualization of the Government's SWOT Quadrant Matrix North Aceh Regency (Disaster Context)





The intersection of these two mathematical coordinate points (X= 2.10 ; Y= 1.90) within the SWOT Quadrant Matrix visualization unequivocally places the North Aceh Regency government's budget management in Quadrant IV, which corresponds to the label "Defensive" or "Survival." This critical position provides an unequivocal diagnosis that the local government is under massive attack from external threats, while its internal defenses are extremely fragile. This diagnosis simultaneously signals the end of *"business as usual"* operational strategies. Given this cornered position, every rupiah allocated from the Regency Budget (APBK) must be managed through *a retrenchment* strategy to prioritize safeguarding the region's capital assets from the devastation of budget shortfalls at the end of the fiscal year.

Synthesis of Policy Strategies through the TOWS Matrix

Based on the projections in Quadrant IV, which mandate a defensive strategy, *actionable* alternative policy formulations are developed through analytical cross-referencing using the TOWS Matrix. The epicenter of all strategic pillars in this matrix is focused on the agenda of budget rationalization, the elimination of inefficient practices, and the enforcement of collaboration that breaks down cross-sectoral barriers. Various strategic quadrants ranging from the S-O Strategy, which relies on the institutionalization of integrated *earmarking*; the W-O Strategy, which initiates a blended financing scheme; to the S-T Strategy, which promotes a moratorium on development in flood-prone "red zones" have been carefully considered.

However, the most absolute and unavoidable priority falls on the W-T Strategy quadrant, which is specifically designed as a last-resort rescue strategy to save the APBK from hidden bankruptcy. The formulation of this strategy introduces a radical *"Refocusing* of the 2026 APBK" policy, which instructs the Local Government Budget Team to drastically cut non-urgent bureaucratic capital expenditure allocations and reduce the share of highly consumptive charitable funds. These drastic efficiency measures are then fully reallocated toward resilient infrastructure capital expenditures in the upper river basin. Furthermore, this W-T strategy mandates the formation of an *ad-hoc* cross-agency intervention task force under the command of Bappeda, tasked with consolidating budget funds from the Public Works and Spatial Planning Agency (PUPR), the Agriculture Agency, and the Regional Disaster Management Agency (BPBD) into a single, systematic *joint-budgeting* scheme. This strategy is believed to be the most rational approach to breaking down sectoral silos and injecting fiscal resilience amid the prevailing vulnerabilities.

POLICY OPTIONS

3.1 Criteria for Evaluating Public Policy Based on Spatial Justice

In formulating alternative solutions to the fiscal impasse in North Aceh Regency, this study does not rely solely on bureaucratic intuition but employs measurable scientific parameters. The analytical framework employed draws on six criteria for evaluating public policy proposed by William Dunn (2018), which, in the context of this study, are further elaborated through the lens of *spatial justice*. Spatial justice is crucial given that the epicenter of hydrometeorological disasters (river flooding) consistently strikes agrarian rural areas downstream, while the centers of budgetary decision-making are located in urban centers.

Dunn's six criteria are contextualized as follows: First, Effectiveness, which refers to the extent to which an alternative is able to address the root causes of the problem and tangibly shift the budgeting paradigm from a reactive to a proactive phase. Second, Efficiency, which measures the ratio between the resource burden borne by local governments under *fiscal* stress and the resulting protective benefits. Third, Adequacy, which refers to the extent to which the funding volume of the alternative is sufficient to empirically mitigate macroeconomic losses caused by flooding. Fourth, Equity, which assesses the fairness of the distribution of policy protections so that they are not solely focused on urban physical infrastructure but also reach the lifeblood of the agrarian economy in rural areas. Fifth, Responsiveness, which measures the speed of the alternative's implementation in responding to the imminent threat of extreme weather in the 2026 cycle. Sixth, Appropriateness, which examines the political feasibility and legal validity of these alternatives for immediate implementation within the scope of authority of the Regional Development Planning Agency (Bappeda) and the Regional Government Budget Team (TAPD).

3.2 Description and Comparative Analysis of Policy Alternatives

Based on the results of the TOWS Matrix analysis, which places the North Aceh Regency Government in the Defensive Quadrant, three policy alternatives have been formulated that focus on budget rationalization and the safeguarding of regional assets.

The first alternative is *a Radical Redesign and Refocusing of the 2026 Regency Budget (APBK)*. This alternative operates through internal optimization, in which Bappeda and TAPD intervene directly in the draft PPAS. This step requires political courage to cut non-urgent bureaucratic operational expenditure items such as the procurement of official vehicles, building renovations, or official travel while simultaneously reducing the portion of post-disaster charitable funds, such as Unforeseen Assistance (BTT). The funds accumulated from these cuts *are* then *earmarked* (mandatorily set aside) exclusively to finance capital expenditures for upstream river mitigation infrastructure, such as the reinforcement of the Krueng Pase embankment.

The second alternative proposes *the synchronization of earmarking in the Regency Budget (APBK) and Village Budget (APBDes) for integrated mitigation*. This option represents a form of vertical collaboration designed to distribute the regency's fiscal burden down to the grassroots level. The Regency Government will issue a Regent's Regulation that mandatorily requires all villages located in flood-prone "red zones" to set aside a certain percentage (e.g., 10–15 percent) of their Village Budget (APBDes) specifically for micro-scale pre-disaster mitigation, such as the maintenance

of local drainage systems. Through this scheme, the regency's APBK can be stretched further and focused solely on funding macro-scale water control infrastructure.

The third alternative seeks to overcome regional budget constraints through *the Blended Finance Initiative*. This external expansion strategy aims to mobilize funding sources outside the regency budget framework (extra-budgetary). The Regency Government will draft a special regulatory framework to attract, consolidate, and manage Corporate Social Responsibility (CSR) funds from major corporations in North Aceh, along with grant funds from international donor agencies, into a single "Disaster Mitigation Trust Account." This collective fund will be managed independently outside the APBK's bureaucratic cycle to accelerate the physical construction of flood prevention infrastructure.

When analyzed comparatively, these three alternatives share a common thread: a strong push to shift the governance focus from emergency response toward preventive investment. However, the fundamental difference lies in control over resources. The first alternative relies entirely on the resolve to reallocate the APBK's own funds; the second alternative is heavily dependent on the delegation of fiscal authority to the village government level; while the third alternative places the burden on negotiations with the private sector. In terms of leverage, the first alternative has the greatest disruptive potential against the bureaucracy's *historical budgeting* culture; the second alternative ensures sustainability but has only a micro-level impact; and the third alternative offers budgetary flexibility but is plagued by uncertainty regarding the disbursement of funds, which lies beyond the local government's control.

3.3 Methodology for Evaluating and Selecting the Best Policy Alternative

To arrive at the most precise final policy, the three alternatives were evaluated and quantified using William Dunn's criteria-based weighting method. The results of the analytical synthesis show that Alternative 1 (Radical *Refocusing* of the APBK) emerges as the most superior option, achieving the highest total score (28 points). This alternative outperforms Alternative 2 (Synchronization of the APBDes), which scored 23 points, as well as Alternative 3 (*Blended Finance* Scheme), which ranks last with 19 points.

Alternative 1's decisive victory was supported by irrefutable academic and tactical arguments. In the criteria *of Effectiveness*, *Adequacy*, *Responsiveness*, and *Accuracy*, Alternative 1 swept all maximum scores (5 points). The decision to overhaul the 2026 PPAS draft from within is the most *appropriate* step in terms of authority, as Bappeda and TAPD possess absolute formal legal authority to manage the APBK without being held hostage by external bureaucracy. Its level of responsiveness is also exceptionally high, given that the threat of La Niña and the peak of the 2026 rainfall cycle are just around the corner. Cutting bureaucratic operational costs immediately to redirect funds toward levee construction is the fastest measure whose impact can directly safeguard the agricultural sector.

On the other hand, Alternative 2 (Score 23) achieved the maximum score for the criteria of efficiency and equity because it significantly conserves the regency's cash reserves and distributes funds proportionally at the village level. However, the *adequacy* of village funds is far too meager to contain inter-district river overflows,

thus failing to serve as the primary solution. Meanwhile, Alternative 3 (Score 19) must be eliminated from the priority options because it has very low responsiveness and political appropriateness (score 2). Relying on private CSR funds which must await approval at a General Shareholders' Meeting (GSM) for mitigation efforts is a fatal gamble given the region's status in the Defensive Quadrant. Therefore, Alternative 1 is officially confirmed as the primary policy recommendation, while Alternative 2 is positioned as *a complementary strategy*.

POLICY RECOMMENDATIONS AND CONCLUSIONS

Policy Recommendations (*Call for Action*)

To dismantle the trap of structural vulnerability that has long placed North Aceh Regency in the Defensive Quadrant, interventions can no longer be reduced to mere sectoral technical recommendations. Based on the problem formulation regarding the highly orthodox and reactive architecture of the Regency Budget (APBK), and referring to the validation of Alternative 1's success in the William Dunn criteria test, the proposed policy recommendation (*Call for Action*) is: **"The issuance of a North Aceh Regent Regulation (Perbup) on the Implementation of Disaster Risk-Based Budgeting and the Institutionalization of an Independent *Earmarking* Scheme for Hydrometeorological Mitigation within the KUA-PPAS Preparation Cycle."**

This recommendation is specifically formulated as a *regulatory policy* instrument addressed directly to the Regent of North Aceh as the holder of authority over regional financial management (PKPKD), with the Head of Bappeda and the TAPD serving as the architects of its implementation. This policy requires three concrete actions that must be implemented immediately. First, the imposition of a moratorium (temporary suspension) on increases to the budget ceiling for non-priority bureaucratic operating expenses in the draft 2026 PPAS. Second, the enforcement *of mandatory earmarking*, whereby at least 10 percent of total regional discretionary spending must be strictly allocated to fund pre-disaster flood control infrastructure capital expenditures within the relevant technical agencies (the Public Works and Public Housing Agency and the Agriculture Agency). Third, the integration of climate risk parameters into the Local Government Information System (SIPD-RI), so that any proposal for a physical project in a red zone that does not include components to mitigate ecological impacts will be automatically rejected by the system. These recommendations represent concrete actions to safeguard the agrarian economy and prevent a decline in the purchasing power of rural communities.

Five-Year Roadmap for Implementing Policy Recommendations

To ensure this Regent's Regulation does not become a dead letter, its implementation must be guided by *a* five-year tactical roadmap (2026–2030), divided into five phases of bureaucratic transformation:

Phase I (2026): Emergency Fiscal Correction and Regulatory Ratification. In this opening phase, the main activities will focus on the discussion and legalization of the Regent's Regulation *on Risk-Based Budgeting* by the Regent. Concurrently, the TAPD will execute *a* radical *refocusing* of the 2026 PPAS draft, shifting operational

expenditure funds to pre-disaster capital expenditure for the reinforcement of critical levees. Responsibility for this phase lies with the Regent of North Aceh, together with Bappeda and the Legal Division. The success indicators are the issuance of the Regent's Regulation and the actual allocation of at least 10% of the budget for upstream mitigation within the 2026 APBK Qanun.

Phase II (2027): Institutionalization and System Synchronization. The focus shifts to integrating regulations into a digital system and expanding the scope of collaboration. Activities include implementing risk-weighting instruments within the SIPD-RI, issuing a Regent's Instruction to synchronize Village Budgets (APBDes) in red zones, and developing a Macro Drainage Master Plan. This phase is led by the Head of Bappeda and the Head of the Community and Village Empowerment Agency (DPMG). The success of this phase is measured by 100% of villages in flood-prone zones having properly allocated their mitigation funds, as well as the creation of an integrated Master Plan document.

Phase III (2028): Structural Implementation and Strengthening of the Basic Sectors. This is the year of construction. Large-scale physical development for river and reservoir normalization is fully implemented. At the same time, the Agriculture Department initiates a Regional Agricultural Insurance program, in which premiums are shared between the APBK and the community to protect rice fields. The Head of the PUPR Department and the Head of the Agriculture Department are designated as the responsible parties. The success indicators are clearly measurable: the completion of construction at key flood-prone sites and a drastic reduction in the area of rice fields experiencing crop failure.

Phase IV (2029): Mid-Term Evaluation and External Consolidation. Entering the fourth year, the Regional Development Planning Agency (Bappeda) conducts *a Mid-Term Review* to assess the effectiveness of the Regent's Regulation in driving growth in the Regional Gross Domestic Product (PDRB) and Human Development Index (IPM) achievements. Concurrent with this evaluation, the "Mixed Financing Trust Account" initiative is launched to facilitate the legal and transparent channeling of corporate CSR funds toward the development of *green infrastructure*. Success indicators include the successful attraction of non-APBK funding and a surge in the region's EFE Matrix score, exceeding the midpoint for strategic viability (>2.50).

Phase V (2030): Regional Resilience and Self-Sufficiency, and Final Outcomes. In this final phase, this proactive budget architecture is permanently integrated into the Long-Term Development Plan (RPJP) document for the subsequent period. The Regency Government also begins to solidify a pure fiscal incentive scheme for subdistricts that successfully achieve *"Zero-Flood Damage"* on their regional assets. The ultimate indicator of success is the achievement of the macroeconomic and Human Development Index (HDI) targets in the 2025–2029 Medium-Term Regional Development Plan (RPJMD) without any adjustments whatsoever due to disasters, signifying that North Aceh Regency has freed itself from the trap of hydrometeorological vulnerability.

Conclusion

The lengthy narrative of this study culminates in one fundamental conclusion: North Aceh Regency's chronic vulnerability to hydrometeorological disasters can no longer be dismissed as mere ecological fate, but rather represents a structural impasse in the architecture of regional planning and financial management. The phenomenon of annual flooding, which paralyzes the economic lifeline of coastal and rural areas, has proven to be the strongest corrective factor undermining the productivity of the agricultural sector the main pillar of the Regional Gross Domestic Product (PDRB) while simultaneously triggering stagnation in the Human Development Index due to the collapse of grassroots purchasing power. This bitter reality lays bare the vast gap between the progressive vision outlined in the 2025–2029 Regional Medium-Term Development Plan (RPJMD) and the reality of the 2026 Draft Regional Budget Allocation (PPAS), which was constructed with an extremely defensive mindset.

Analytical validation through the quantification of the Internal (IFE) and External (EFE) Matrices which places the region in the Defensive Quadrant serves as a stark warning to the bureaucratic planning elite. This evaluation logically demonstrates that the culture of *historical budgeting*, the pressure *of fiscal stress*, and acute sectoral egoism among regional government agencies have sabotaged the region's capacity to counter the escalating climate threat. Relying on a reactive approach through the exploitation of Contingency Funds (BTT) or post-disaster charitable social programs has proven to be an unsustainable measure, one that slowly but surely drags the region into an abyss of endless, recurring budget waste.

Based on William Dunn's assessment matrix, breaking this systemic deadlock cannot be delegated to external instruments such as unreliable private-sector CSR initiatives, nor can it be placed on the shoulders of financially vulnerable village governments. The only viable solution one that is rational, highly responsive, and grounded in absolute legitimacy is to implement fiscal restructuring through a radical *refocusing* of the Regency Budget (APBK). A paradigm shift in budgeting through the implementation of *Risk-Based Budgeting* and Independent *Earmarking* regulations represents a bold political and fiscal gamble. This step is not merely a matter of complying with administrative rules, but rather an intellectual manifesto to protect citizens' right to economic security and to ensure that North Aceh Regency's development goals are truly grounded in a foundation of self-reliance that can no longer be easily swept away by the onslaught of disasters.

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