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# An Innovative Strategic Management Model for Evacuation Centers in the Province of Albay

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**ABSTRACT**

This study examines the operationalization of Disaster Risk Reduction and Management (DRRM) in the Province of Albay, focusing on the cities of Tabaco, Legazpi, and Ligao. Despite Albay's global reputation for proactive disaster governance under Republic Act No. 10121, a persistent gap remains between high-level policy frameworks and the localized management of evacuation centers. This research addresses the disconnect between acclaimed governance structures and the recurring challenges of accountability, fiscal management, and facility sustainability at the barangay level. Theoretically anchored in Good Governance, DRR Governance frameworks, and Transformational Leadership, the study evaluates how transparency, responsiveness, and leadership behaviors influence disaster outcomes. Using a mixed-methods Sequential Explanatory design (QUAN → QUAL), the research triangulated quantitative survey data with qualitative interviews and field observations. This approach revealed a "Paradox of Financial Management": while LGUs reported high administrative compliance and budget utilization (LDRRMF), qualitative findings highlighted significant bottlenecks in decentralized decision-making, inter-agency coordination, and infrastructural readiness. Specifically, field observations in Ligao and Legazpi identified an 83% gap in facilities for vulnerable sectors and a continued, over-reliance on school-based shelters. To bridge these gaps, the study proposes the Integrated Resilience and Accountability (IRA) Framework. This innovative strategic management model is built on four pillars: Decentralized Field Command, a Unified Digital Coordination Hub, Inclusive Infrastructure Standards, and Performance-Based Fiscal Accountability. By linking the release of preparedness funds to measurable facility readiness via a scorecard system, the IRA Framework seeks to transition Albay's evacuation system from "paper-only" compliance to a technology-driven, inclusive, and operationally excellent model that ensures the safety and dignity of displaced populations.

**Keywords**: *evacuation center, Innovative Strategic Model, disaster risk reduction and management, critical gaps, governance, and accountability*

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## INTRODUCTION

Disaster preparedness and response are vital components of effective local governance, particularly in archipelagic states like the Philippines. Situated on the Pacific Ring of Fire and within the Typhoon Belt, the country necessitates a robust, proactive public administration system. Local government units (LGUs) are at the forefront of this effort, mandated by Republic Act No. 10121 (RA 10121), or the Philippine Disaster Risk Reduction and Management Act of 2010, to institutionalize comprehensive Disaster Risk Reduction and Management (DRRM) systems.

The Province of Albay, specifically focusing on the highly vulnerable Tabaco City, Legazpi City and Ligao City, serves as a critical case study. This area regularly experiences forced evacuations due to the frequent unrest of Mayon Volcano and catastrophic typhoons. While Albay has garnered national recognition for its pioneering, proactive DRR approach, including mandatory pre-emptive evacuation, this reputation places immense and continuous stress on its evacuation center management system.

Despite Legazpi City's celebrated DRRM framework, a persistent operational challenge remains in ensuring that evacuation centers—whether dedicated facilities or repurposed structures like schools and community halls—are managed efficiently, adhere to international standards (e.g., CCCM/IASC guidelines), and are sustained through clear, accountable fiscal management. The performance of the LGU in this critical phase is directly tied to the core principles of governance and accountability enshrined in RA 10121. This study will focus on the entire city's disaster management ecosystem to provide a rigorous assessment of these mechanisms.

### Evacuation Centers as a Test of Governance

Evacuation centers are the most visible and critical operational component of disaster response, where governance and accountability are tested in real-time. A persistent operational challenge remains in ensuring that these centers—whether dedicated facilities or repurposed structures—are managed efficiently, adhere to international standards (e.g., CCCM/IASC guidelines), and are sustained through clear, accountable fiscal management.

### The Role of Regional Oversight: OCD Region V

The implementation of evacuation center management at the local level is supported and overseen by national agencies. Crucially, the Office of Civil Defense (OCD) Region V plays a significant role in this ecosystem. OCD acts as the secretariat of the Regional Disaster Risk Reduction and Management Council (RDRRMC) and is tasked with providing guidance, technical assistance, and often crucial financial support to LGUs for capacity building and emergency operations, including evacuation management. The effective flow of policies, resources (like the LDRRMF), and technical data from the national and regional level down to the LGU and Barangay level is a core element of the DRR Governance Framework

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**Direct Accountability of the Local Chief Executive (LCE)**

The performance of the LGU in this critical phase is directly tied to the core principles of governance and accountability enshrined in RA 10121. The Local Chief Executive (LCE), which includes the City Mayors of Legazpi City and Ligao City, holds direct and ultimate accountability for the implementation of the city's DRRM plans, especially concerning the safety and welfare of evacuees. This accountability covers the justification of decisions on budget utilization, evacuation site selection, adherence to established standards (RA 10121), and overall organizational responsiveness during a crisis. The LCE's Transformational Leadership style and commitment are recognized as key determinants that influence coordination, mobilization, and public trust, directly affecting measurable disaster outcomes like timely evacuations and efficient shelter management.

**Factors Affecting Management and Accountability**

The management and accountability of evacuation centers are not static; they are affected by several critical governance and implementation factors:

• Implementation Gaps at the Barangay-Level: Despite robust city-level frameworks, implementation is often uneven due to local politics, informal norms, and day-to-day leadership affecting siting, maintenance, and operation at the barangay, the smallest administrative unit.

• Financial Sustainability and Resource Constraints: Weaknesses in fiscal management, including the crucial balance between capital and maintenance funding, budgeting cycles, and the utilization of the Local Disaster Risk Reduction and Management Fund (LDRRMF), pose a significant threat to long-term center viability.

• Technology-to-Policy Pathways: The effective use of technical data from platforms like GeoRiskPH and UP-NOAH is often inconsistent due to data literacy, limited technical capacity, and the absence of clear institutional pathways that integrate technical outputs into budgeting and policy cycles.

This study will provide a rigorous assessment of these mechanisms across Legazpi City and Ligao City, focusing on the localized, accountable, and outcome-linked governance practices necessary for true disaster resilience.

**Rationale of the Study**

The Philippines' shift from a reactive disaster response system to a proactive risk reduction framework, institutionalized by the Philippine Disaster Risk Reduction and Management (RA 10121) and Ligtas Pinoy Centers Act (RA 12076), represents a significant evolution in public administration. This law is grounded on principles of good governance, decentralization, and accountability, making the Local Government Unit (LGU) the primary frontliner in disaster management.

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However, the sustained, multi-hazard exposure of areas like Albay—home to the frequently activated evacuation centers of Tabaco City, Legazpi City, and Ligao City—compels a continuous, critical examination of RA 10121's and RA 12076 implementation. While the policy framework is robust, the challenge lies in the fidelity of implementation at the ground level and the accountability for service delivery in complex, high-stress environments like evacuation centers.

This study's rationale, therefore, is rooted in evaluating the effectiveness of RA 10121 and RA 12076 by focusing on their core governance and accountability mechanisms as they apply to the highly operational and service-intensive function of evacuation center management.

The evaluation focuses on the practical outcomes of institutionalizing the DRRM system within Local Government Units (LGUs), specifically during the Preparedness and Response pillars of DRRM, where evacuation center operations occur. The study evaluates the following three structural and operational domains of RA 10121:

1. Institutional Mandate and Capacity (Sections 11 & 12): The study assesses the extent to which the mandated structures—the Local Disaster Risk Reduction and Management Office (LDRRMO) and the Barangay DRRM Committee (BDRRMC)—are functional, adequately staffed, and technically capable of implementing the law's comprehensive mandates for evacuation center setup, operation, and closure.

2. Financial Accountability and Resource Utilization (Section 21): The evaluation examines the transparency and effectiveness in the utilization of the Local Disaster Risk Reduction and Management Fund (LDRRMF). This addresses whether the fund is strategically allocated for sustained evacuation center management, pre-disaster preparedness, and mitigation, or if it remains predominantly focused on post-disaster relief and response, which is a common implementation gap.

3. Governance for Service Delivery (Policy Gaps): The study identifies and analyzes the disconnect between RA 10121's macro-level DRRM policy and the micro-level need for specific, non-negotiable standards for humanitarian service delivery. While RA 10121 mandates preparedness, it lacks detailed, dedicated policy guidelines for Evacuation Center Standards, creating gaps in service quality, sanitation, protection of vulnerable groups, and site selection. The evaluation seeks to empirically justify the need for subsequent legislation (e.g., proposed House Bills for permanent evacuation centers) by highlighting these operational deficiencies.

**Governance and Accountability Mechanisms to be Studied**

The following core mechanisms of RA 10121 serve as the variables for assessing the performance of Legazpi City and Ligao City LGUs:

***Transformational Leadership (LCE):*** This mechanism focuses on the Local Chief Executive's (LCE) direct role. The study assesses Direct Accountability/Command Responsibility by evaluating the

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LCE's decisive leadership in pre-emptive evacuation, the clarity of delegation of duties, and the political will demonstrate to enforce evacuation center standards.

***Institutional Coordination:*** This area examines the broader network governance structure. Its associated accountability mechanism is Inter-Agency Accountability involving the Office of Civil Defense (OCD), Department of Social Welfare and Development (DSWD), and Local Government Units (LGU). The analysis centers on the clarity and efficiency of collaboration protocols between the OCD Region V, the LGU, and sectoral agencies (e.g., DSWD, Department of Health - DOH) in managing the centers.

***Decentralized DRRM Structure:*** This mechanism investigates the internal structure of the disaster risk reduction and management (DRRM) system. It utilizes Internal Accountability from the Local DRRM Officer (LDRRMO) to the Barangay DRRM Committee (BDRRMC). The operational focus is on evaluating the LDRRMO's performance in capacitating and monitoring the BDRRMC to ensure that center management protocols are consistently cascaded and implemented at the barangay level.

***Financial Management (LDRRMF):*** The final mechanism pertains to the use of the Local DRRM Fund (LDRRMF). The accountability mechanism here is Fiscal Accountability and Transparency. The study assesses the mechanisms for public transparency in the acquisition, stockpiling, and distribution of resources (e.g., relief goods, maintenance of facilities) to prevent the misuse of funds and ensure the quality of aid provided.

The evaluation of these components is crucial, as the effectiveness of disaster preparedness in Tabaco City, Legazpi and Ligao is not just about moving people, but about maintaining dignity, safety, and operational excellence within the evacuation centers themselves. This study provides the empirical evidence necessary for policymakers to enhance and augment the existing accountability framework of RA 10121 and RA 12076.

## Current State of Research

Research on DRRM in the Philippines consistently highlights a gap between the progressive mandate of RA 10121 and RA 12076 and the reality of its implementation at the local government level. While the policy framework is lauded globally, a significant body of literature now shifts focus to the institutional and political factors that obstruct its efficacy. The challenges are increasingly recognized as less about technical capacity and more about entrenched governance issues, namely the influence of political cycles and critical flaws in fiscal accountability and budget execution.

## The Nexus of Political Preferences and Priority in DRRM

A significant theme emerging in DRRM governance literature is the impact of political preferences and priorities on the implementation of long-term risk mitigation strategies. Effective disaster preparedness is not merely a technical task; it requires sufficient political incentives and will to make DRRM a sustained, high-priority issue.

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Studies reveal that the political economy directly affects the strength of these incentives, often resulting in short-sighted decision-making. For instance, electoral cycles can influence the quality of long-term investments. Researchers have found that local disaster public goods, which are non-immediate and non-particularistic, may decline in quality one year before elections as officials prioritize visible, short-term projects that secure votes over sustained, long-term risk reduction measures.

Furthermore, the prevalence of political dynamics such as dynastic share and patronage politics is shown to compromise public welfare during disasters. This system can lead to compromised land-use planning, forcing vulnerable populations to reside in hazard-prone areas despite existing laws. Ultimately, a lack of political will to enforce regulations and a system where corruption and political payoffs are normalized—even in infrastructure projects—severely erodes the country's capacity to adapt and prepare, transforming climate adaptation into climate injustice.

**The Paradox of Financial Management and Budgeting**

Complementing the political challenges are the systemic issues surrounding financial allocation and budget preparation within the Local Disaster Risk Reduction and Management Fund (LDRRMF). The LDRRMF is a cornerstone of decentralized DRRM, mandating that Local Government Units (LGUs) set aside not less than five percent (5%) of their estimated revenue from regular sources for disaster management activities. Crucially, the law specifies a preventive-centric allocation: 70% for pre-disaster preparedness, mitigation, and prevention activities, with only 30% allocated for the Quick Response Fund (QRF) for immediate relief and recovery.

The current state of research identifies a critical paradox in the utilization of these funds:

***Underutilization and Efficiency Gaps:*** Despite the clear mandate, research consistently reports challenges related to the underutilization of LDRRMF funds, which negatively impacts readiness and response capabilities. This gap points to challenges not just in spending but in increased funding efficiency and the ability of LGUs to translate their mandated financial capacity into effective programs.

***Budgeting and Planning Alignment:*** The integrity of budget preparation is challenged by the requirement that all LDRRMF expenditures must align with the LGU's approved Local Disaster Risk Reduction and Management Plan (LDRRMP) and Investment Plan. However, some studies note that major planning documents at the local level do not fully reflect comprehensive climate and disaster risk assessments, leading to a mismatch between funds and actual risk priorities. The failure to integrate DRRM into broader planning documents, such as the Comprehensive Land Use Plan (CLUP) and Comprehensive Development Plan (CDP), perpetuates ineffective financial planning.

***Fiscal Accountability:*** The unexpended LDRRMF is required to accrue to a special trust fund for five years, specifically for supporting DRRM activities. However, the research reveals that despite clear regulations, issues of fiscal accountability and transparency persist, often intertwined with the political challenges of corruption and non-transparent budget insertions.

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The current state of research indicates that the effectiveness of DRRM implementation is fundamentally constrained by political forces that undermine long-term commitment and by fiscal governance issues that compromise the efficient, transparent, and risk-informed allocation and execution of mandated financial resources. These challenges form the core gap this dissertation seeks to address by focusing on the specific mechanisms of governance and accountability in the critical, high-visibility area of evacuation center management in a highly vulnerable province.

## LITERATURE REVIEW

### Devolution, Decentralization, and Local Capacity in DRRM

A core theme in contemporary public administration literature, particularly following the passage of RA 10121 and the implications of the Mandanas-Garcia Ruling, is the transfer of DRRM responsibilities to Local Government Units (LGUs). These studies examine how devolution affects LGU capacity and autonomy in disaster planning and implementation. Minimo (2021), for instance, focuses on the socially and spatially differentiated rate of RA 10121 implementation, while the OECD (2025) notes the strong legal framework but "uneven" implementation, citing that only 65% of LGUs have updated plans. International works like Benson & Clay (2004) provide a global view on integrating disaster risk reduction (DRR) into national development planning. The effectiveness of this decentralization is analyzed by Tusalem (2018), and May (2005) provides a conceptual framework for understanding LGU compliance with national laws. Putra & Matsuyuki (2019) offer a systematic review of the effects and challenges of decentralized disaster governance globally. Specifically addressing fiscal aspects in the Philippines, Pascual (2023) examines how the Mandanas-Garcia Ruling influences the utilization of the Local Disaster Risk Reduction and Management Fund (LDRRMF). Other related studies cover local compliance with specific standards, such as evacuation center management (Estella, 2018), and the general context of mainstreaming DRR into local governance (Gupta & Sharma, 2014; Hermansson, 2019; Miller & Douglass, 2016). Ultimately, Capuno (2015) explores the politics underlying implementation lags, while the UNISDR's Sendai Framework (2015) provides the global normative framework emphasizing local action.

### The Role of Leadership and Inter-Agency Coordination in Disaster Response

This body of work focuses on the behavioral and structural dimensions of disaster governance, particularly the critical roles of political commitment, leadership styles, and the functioning of multi-sectoral coordination bodies (e.g., DRRMCs). Foundational work by Kapucu (2008) highlights the importance of collaborative leadership for emergency management. The direct impact of leadership is explored by Cranston (2022) on transformational leadership during Typhoon Vamco, and Quinto (2017) on how local chief executives' styles influence preparedness. Systemic failures in inter-agency coordination (Minas, 2021) and the challenges of organizational silos and communication gaps (Magno, 2019) are also analyzed. Classic texts, such as Tierney et al. (2001), discuss organizational and coordination challenges, while UNDRR (2024) examines institutional failures in cascading early warnings. The efficacy of the Incident Command System (ICS) in LGU operations is assessed by Velasco (2018). Furthermore, the role of political will (Schoch & Schoch, 2019) and leadership during catastrophic events (Almonte, 2020) are

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examined, along with specific coordination challenges during major events like Typhoon Haiyan (Anil, 2018).

**Community Participation and Stakeholder Collaboration in Disaster Preparedness**

These studies focus on the bottom-up approach to DRRM, emphasizing the integration of local knowledge, the crucial role of civil society organizations (CSOs), and the psychological and social dimensions of community resilience and evacuation compliance. Bankoff (2007) provides essential historical context on local coping mechanisms. Empirical analysis from the Philippines highlights the perceptual gap between implementers and community beneficiaries in stakeholder engagement (Mercado & Candelaria, 2019). Theoretical models for community engagement and resilience are provided by Paton & Johnston (2017) and Cutter et al. (2008). The role of CSOs and NGOs is mapped by Carino (2014), and Fernandez (2019) compares strong and weak approaches to community engagement. Studies also address the impact of factors like income and awareness on preparedness (Uddin & Pradhanang, 2019), community preparedness in flood-prone areas (Balamiento, 2022), and the integration of indigenous knowledge systems (Perez, 2020). Specific psychosocial impacts of forced evacuation are discussed by Rodrigo (2016).

**Policy Gaps and Implementation Challenges in DRRM Frameworks**

This literature directly addresses the limitations and systemic failures in translating national policy (RA 10121) into effective, sustained local practice, highlighting financial, institutional, and legislative deficiencies. Key issues include the politics of data and institutional factors limiting the use of geospatial tools (Bixler, 2017). A major area of concern is fiscal management, with Campos (2024) analyzing LDRRMF utilization and underspending, and the Commission on Audit (COA, 2023) providing primary source evidence on fiscal gaps. Carino (2015) details the general implementation challenges of RA 10121. Other identified gaps include the integration of climate and disaster risk into local land use planning (ADB, 2018) and weaknesses in Monitoring and Evaluation (M&E) systems (Caparas, 2024). The unintended consequences of RA 10121 on the shift from response to preparedness funding are also examined (Villegas, 2020). Finally, literature also addresses pending legislative solutions, such as the policy need for a dedicated Department of Disaster Resilience (Habito, 2022) and the evaluation of evacuation center standards against current LGU practice (Gonzales, 2023).

**Theoretical and conceptual framework**

The present study on the effectiveness of local governance and leadership in evacuation center management in the Province of Albay is anchored by three primary theoretical lenses: Good Governance Theory, the Disaster Risk Reduction Governance Framework, and Transformational Leadership Theory. These theories collectively provide the conceptual architecture to analyze institutional, policy, and behavioral factors that influence measurable disaster outcomes.

Good Governance Theory provides the normative benchmark against which the performance of the Local Government Unit (LGU) is evaluated. In the context of disaster management, governance is not

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merely the exercise of authority but the complex interplay between the government, civil society, and the private sector in formulating and implementing disaster policy (UNDP, 2011).

The study will particularly emphasize the following core tenets of Good Governance, as applied to evacuation management:

The effective management of evacuation centers, particularly in local government units (LGUs) like Province of Albay, is fundamentally guided by four core public administration principles: Accountability, Transparency, Responsiveness, and Participation.

**Core Principles and Relevance**

*Accountability* is essential, establishing the obligation of the LGU (specifically the City Disaster Risk Reduction and Management Office or CDRRMO, and the Barangay Council) to justify its decisions regarding budget utilization, evacuation site selection, and adherence to established standards, such as those mandated by RA 10121 and proposed in House Bill 10472 (HB 10472). This principle directly addresses the systemic issue of unclear performance regimes in disaster response (Moynihan, 2009).

Complementing this is *Transparency*, which requires the clarity and accessibility of information regarding evacuation protocols, resource allocation (particularly the Local Disaster Risk Reduction and Management Fund or LDRRMF), and audit reports (COA, 2023). By maintaining transparency, the LGU ensures that the public understands the link between policy decisions and actual outcomes.

Furthermore, *Responsiveness* dictates the timely and effective adaptation of evacuation plans and services to the specific, often urgent, needs of vulnerable populations in the Province of Albay, especially during active crises (Boin & 't Hart, 2003). This ensures that services meet the dynamic realities on the ground.

Finally, *Participation* emphasizes the active involvement of community leaders, evacuees themselves, and civil society organizations (CSOs) in the planning, monitoring, and evaluation of evacuation centers. This mechanism is crucial for ensuring that local knowledge and community-specific needs are genuinely integrated into formal policy and practice (Delica-Willison, 2012).

The DRR Governance Framework, largely codified by the Sendai Framework (2015-2030) and domestically by RA 10121, shifts the focus of disaster management from post-event response to comprehensive, pre-event preparedness and institutionalization.

This framework is critical as it mandates the decentralization of DRRM responsibilities to LGUs. It allows the study to analyze the enabling environment—the institutional arrangements, resources, and coordination mechanisms—that either support or constrain the implementation of RA 10121 at the barangay level (Capuno, 2014). It specifically addresses:

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***Multi-Level Governance:*** Examining how policies cascade from the City DRRMC to the Barangay DRRMC, including the flow of financial resources (LDRRMF) and hazard information (Bixler, 2017).

***Institutional Capacity:*** Assessing the administrative and technical competencies of barangay-level staff in maintaining and operating evacuation centers according to standards (Estella, 2018).

While governance sets the structure, Transformational Leadership Theory addresses the behavioral dimension of policy implementation. This theory, initially developed by Burns (1978) and further detailed by Avolio, et al. (2009), posits that leaders mobilize followers to achieve performance beyond expectations by communicating a clear vision, providing intellectual stimulation, and offering individualized support.

In the context of this study, Transformational Leadership is used to analyze:

***Vision and Commitment:*** The Local Chief Executive's (LCE) and Barangay Captain's commitment to prioritizing evacuation center infrastructure and preparedness, often demonstrated through budget prioritization (Schoch & Schoch, 2019).

***Mobilization and Coordination:*** The leader's ability to inspire and coordinate diverse stakeholders (CSOs, volunteers, line agencies) during the high-stress, time-sensitive process of pre-emptive evacuation and center management (Kapucu, 2008).

***Adaptive Decision-Making:*** How leaders use technical data (e.g., GeoRiskPH maps) and institutional knowledge to make prompt, high-stakes operational decisions regarding evacuation timing and center safety.

**Conceptual Model of the Study**

The conceptual model illustrates the relationships between the independent variables (Theories of Governance and Leadership) and the dependent variable (Effectiveness of Evacuation Management), mediated by the Policy Implementation Frameworks.

**Synthesis of the Art**

The review of related literature and studies reveals that the effectiveness of DRRM has shifted from a technical problem to a complex governance issue requiring the integration of policy, leadership, and administrative capacity.

***Legal Framework:*** Republic Act No. 10121 (RA 10121), the Philippine Disaster Risk Reduction and Management Act of 2010, is the foundational legal framework defining the institutional responsibilities of Local Government Units (LGUs) in DRRM.

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***Implementation Gaps:*** While RA 10121 provides a comprehensive structure, its implementation is uneven at the local level. This disparity is due to variations in fiscal capacity, technical expertise, and leadership commitment among LGUs.

***Constraints:*** Policy compliance and program operationalization are often hindered by limited resources, inadequate inter-agency coordination, and unclear accountability mechanisms.

**Leadership and Coordination**

***Leadership as a Determinant:*** Transformational and adaptive leadership approaches are recognized as determinants of DRRM success, as they have been found to improve coordination, volunteer mobilization, and public trust, which in turn enhances community preparedness and response.

***Gap in Measurement:*** A limitation in current research is that leadership performance is not uniformly measured, and empirical evidence linking leadership behavior to measurable outcomes (like timely evacuations and efficient shelter management) remains limited.

**Technology and Policy Integration**

***Technological Advancement:*** The integration of tools like UP-NOAH and GeoRiskPH's HazardHunterPH has improved hazard mapping and risk assessment accessibility.

***Inconsistent Adoption:*** The adoption of these tools by local governments is often inconsistent. Institutional factors such as data literacy, administrative procedures, and decision-making hierarchies determine whether these technologies are effectively utilized in policymaking.

**Principles of Success**

***Good Governance Principles:*** Successful DRRM implementation relies on a combination of good governance principles— (a) transparency, (b) accountability, (c) responsiveness, and (d) participatory decision-making—supported by effective leadership and community engagement.

***International Lessons***: Studies from countries with mature disaster governance systems emphasize empowering local leaders, establishing dedicated disaster funds, and institutionalizing public participation in planning and monitoring. Disaster resilience stems from sound governance and capable leadership, not merely strong infrastructure.

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**Critical Research Gaps (Opportunities for the Dissertation)**

Despite scholarly progress, the following critical research gaps persist and are the focus of this dissertation:

***Barangay-Level Implementation:*** Most rigorous analyses focus on municipal or national scales, leaving barangay-level implementation underexplored.

***Financial Sustainability:*** There is limited analysis of the financial sustainability of evacuation centers, particularly regarding budget allocations, maintenance, and long-term operational costs.

***Evaluation Against Pending Legislation:*** Few studies have used legislative proposals like House Bill No. 10472 as an evaluative framework to measure local readiness against future standards.

***Leadership-to-Outcome Linkage:*** The absence of performance indicators systematically linking governance and leadership to actual disaster outcomes remains a critical methodological void.

The dissertation aims to bridge the gap between national policy frameworks and localized, accountable, and outcome-linked governance practices at the barangay level.

**Research Gap**

The current state of scholarship on Disaster Risk Reduction and Management (DRRM) in the Philippines is anchored on RA 10121 as the foundational legal benchmark. The literature consistently establishes that the effectiveness of DRRM has transitioned from a purely technical problem to a complex governance issue, with studies pointing to implementation gaps in fiscal capacity, accountability, and inter-agency coordination as central problems.

However, despite this progress in establishing foundational frameworks, a distinct and critical shortage of empirical research persists, creating the primary gap this dissertation is designed to bridge:

***Level of Analysis:*** Most rigorous analyses on LGU compliance and disaster governance are conducted at the national or municipal levels, leaving Barangay-Level Policy Implementation underexplored. This study will shift the focus to the smallest administrative unit—the barangay-to examine how local politics, informal norms, and day-to-day leadership affect the siting, maintenance, and operation of evacuation centers. This localized approach is critical to validating the tenets of Decentralization in DRRM.

***Causal Linkage and Measurable Outcomes:*** While studies acknowledge the importance of Transformational and Adaptive Leadership and Good Governance Principles, there is a critical methodological void in systematically establishing the Leadership-to-Outcome Linkage. This dissertation directly addresses this gap by developing and applying Actionable Operational Metrics to connect specific

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governance practices and leadership behaviors to measurable evacuation outcomes (e.g., timeliness, continuity of services, LDRRMF utilization), thereby moving beyond descriptive assessments.

***Policy and Financial Readiness Evaluation:*** Few field studies have employed the highly policy-relevant approach of using RA 12076 on dedicated evacuation centers —as an evaluative benchmark for current LGU readiness. Simultaneously, there is limited analysis of the Finance and Sustainability of evacuation centers, particularly the fiscal management of the LDRRMF for maintenance and long-term viability.

The primary gap this dissertation will bridge is the transition from national policy and legal frameworks to localized, accountable, and outcome-linked governance practices at the smallest administrative unit, as a detailed case study.

**Problem in the Field**

The main problem this study addresses is the operational disconnect between Tabaco City, Legazpi City, and Ligao City acclaimed disaster governance framework and the persistent challenges in ensuring effective, accountable, and sustainable evacuation center management at the community level.

Tabaco City, Legazpi City, and Ligao City are recognized for their proactive, policy-driven DRRM (Disaster Risk Reduction and Management) approach, including mandatory pre-emptive evacuation. However, the recurring hazards and continuous stress have tested the system, with evacuation centers being the most critical operational component where governance and accountability are tested in real-time.

The core issue lies in the uneven implementation of national standards, like RA 10121 and RA 12076, at the barangay level. Specifically, the study will investigate the LGU's efficacy in managing these centers, which involves ensuring they adhere to standards, are sustained through clear fiscal management, and are managed efficiently regardless of whether they are dedicated facilities or repurposed structures.

**Objectives of the Study**

The study aims to assess the local governance and accountability on evacuation center management in the three (3) cities in the Province of Albay in implementing disaster preparedness policies through the management of evacuation centers in Tabaco City, Legazpi City and Ligao City.

The following are the objectives of the study:

1.To assess the current governance structure and accountability mechanisms within the implementation of evacuation center management in the Province of Albay, in the context of the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121) and other relevant DRRM policies.

2. Assess the governance in establishing and managing evacuation centers along its leadership roles, coordination mechanism, and decision-making

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3. To identify the critical gaps and constraints that hinder the effective and consistent implementation of the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121), and Ligtas Pinoy Centers Act (RA 12076).

4. To develop an Innovative Strategic Management Model for enhanced governance and accountability in evacuation center management for the Province of Albay.

**Conceptual and Operational Definition of Key Variables**

The key variables for this study are defined both conceptually and operationally to ensure precise measurement and analysis. The Governance Mechanism is conceptually understood as the system of rules and processes guiding the Local Government Unit's (LGU) disaster risk reduction and management (DRRM) functions, with an emphasis on proactive center management. Operationally, it is measured through key stakeholders' ratings on the clarity and application of mandated protocols for Transformational Leadership (LCE roles), Institutional Coordination, Decentralized DRRM Structure, and Financial Management (LDRRMF). Complementing this is the Accountability Mechanism, defined as the framework ensuring individuals and organizations are answerable for their performance and resource use; this is measured by the perceived effectiveness of Direct Accountability/Command Responsibility (LCE), Inter-Agency Accountability, Internal Accountability, and Fiscal Accountability and Transparency. Resource and Logistics Management is the strategic process of planning and controlling the flow of supplies and facilities, which is measured by evaluating the Resource Allocation process based on (1) the timeliness and adequacy of stock procurement, (2) the equality and timeliness of distribution, and (3) the verification of resources against prescribed quality standards.

The remaining variables focus on organizational performance and strategic direction. Institutional Capacity refers to the ability of local disaster agencies (APSEMO, LDRRMO) and community-level bodies (BDRRMC) to perform mandated DRRM functions; this is operationalized by assessing LGU staff's skills, the consistency of protocol Implementation, evidence of continuous Progress in center improvements, and the level of active Community Participation. Strategic Planning—the process of setting priorities using scientific knowledge—is measured by evaluating if the Evacuation Management Plan is officially approved, regularly reviewed/updated, and demonstrably based on the latest hazard and risk assessments. The variable Clear Roles and Responsibilities is defined as the degree to which all stakeholders have explicitly defined and non-overlapping duties, measured by the existence, dissemination, and understanding of a clear organizational structure, Inter-Agency Protocols, and individual job descriptions. Finally, the Innovative Strategic Management Model is the study's prescriptive output—a proposed framework—whose success will be assessed by its potential for transferability, sustainability, and its ability to provide prescriptive solutions that directly address identified gaps in leadership, coordination, resource management, and compliance with RA 10121 and RA 12076.

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## METHODOLOGY

### Research Design

This study will employ a Mixed-Methods Research Design, specifically the Sequential Explanatory (QUAN → QUAL) model. This design is essential because disaster governance is a complex phenomenon that requires both the objective assessment of measurable outcomes (quantitative) and a deep understanding of the underlying human, political, and institutional processes (qualitative).

***Phase 1: Quantitative (QUAN)***

The first phase will establish a broad overview by developing and applying operational governance and leadership indicators. This phase will systematically link defined policy processes (e.g., LDRRMF utilization, training frequency) to measurable evacuation outcomes, such as resource adequacy and institutional capacity. The statistical results will pinpoint areas of poor performance, significant variance, or inconsistent implementation across the selected Local Government Units (LGUs).

***Phase 2: Qualitative (QUAL)***

This phase will commence with the selection of specific phenomena or outlier cases identified in Phase 1 for in-depth investigation. The core methodology will be an In-Depth Qualitative Case Study focusing on the governance and policy implementation dimensions of DRRM in Tabaco City, Legazpi City, and Ligao City. Through interviews and document analysis, this phase will explain the 'how' and 'why' behind the quantitative findings, uncovering the institutional, political, and cultural factors that either facilitate or impede compliance with RA 10121 and RA 12076.

### Scope of the Study and Case Selection

The study's scope is confined to an assessment of governance and accountability in evacuation center management within the Province of Albay. This province is a critical case due to its status as a multi-hazard area and its experienced, yet strained, DRRM framework.

The study concentrates on Tabaco City, Legazpi City, and Ligao City as critical cases. They are selected due to their:

- High Exposure to recurring hazards (Mayon Volcano activity and typhoons).
- Significant Operational Experience in mandatory, pre-emptive evacuation.
- Representation of different administrative sizes and urban governance structures, maximizing the diversity and transferability of findings.

The focus is on linking the administrative processes of the Albay Public Safety and Emergency Management Office (APSEMO) and the Local Disaster Risk Reduction and Management Office (LDRRMO) to the tangible outcomes of center operations. A key element of the scope is the use of the

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standards in RA 12076 as an evaluative benchmark, moving beyond compliance with existing law to assess readiness against future, non-negotiable standards for center management.

**PARAMETERS**

**I. Who, What, When, Where, How, and Why?**

***Who, Where, and When***

*Locale:* The localized case analysis is centered on Tabaco City, Legazpi City and Ligao City. This location's high disaster-proneness (proximity to Mt. Mayon) allows for the empirical observation of DRRM practices under real-world stress.

*Key Informants:* The data will be collected from key officials and community members to ensure a multi-level perspective. This includes:

Officials from the City DRRM Office (CDRRMO) and the Barangay Captain/Council.

Evacuation Center Managers and representatives from inter-agency committees (DSWD, Health Office).

***Crucially, Community Leaders and Evacuees***

*Timeframe:* The study is designed to capture a designated period that allows for the analysis of both routine administrative practices (budget cycles, planning) and the documentation of operational performance, ideally encompassing a post-event scenario.

***What, How, and Why***

*Key Areas of Investigation:* A deep dive into local governance practices, with specific emphasis on leadership, accountability, and coordination systems. The core of the investigation is the operationalization of national policies (RA 10121) and RA 12076 as a forward-looking benchmark.

*Technology-to-Policy Pathways:* A significant focus is placed on assessing how technical data from platforms like GeoRiskPH or UP-NOAH is translated into tangible administrative action, particularly in evacuation site selection.

*Methodology:* A Mixed-Methods Approach will be utilized, combining Qualitative tools (Key Informant Interviews, Focused Group Discussions, Document Analysis) with an Operational Indicator Metric to ensure robust data triangulation and measurable outcomes.

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***Logistics and Supply Chain***

This expanded parameter assesses the operational efficiency of the disaster response system, focusing on the critical function of resource management.

*Prepositioning and Procurement Efficiency:* Assess the efficiency of the logistics and supply chain to preposition supplies. This involves evaluating the timeliness and adequacy of stock procurement and comparing actual stock against minimum requirements.

*Distribution and Quality Control:* Analyze the methods for repacking and distributing relief goods. A critical component is addressing the challenge of potentially spoiling or damaging goods, and ensuring the verification of resources against prescribed quality standards. This links directly to the Fiscal Accountability and Transparency mechanism in financial management.

*Equity and Timeliness of Service Delivery*: Evaluate the equality and timeliness of distribution to ensure that services meet the specific needs of all evacuees.

**II. Community Preparedness and Accountability**

This parameter ensures the study captures the bottom-up perspective and evaluates the mechanisms designed to protect and empower the most vulnerable populations in the evacuation centers.

***Community Engagement***

*Decision-Making and Planning:* Assess the extent to which community members (including children and vulnerable groups) are involved in decision-making, planning, and providing feedback in the management of the evacuation center. This aligns with the Good Governance principle of Participation.

*Vulnerable Group Inclusion*: Specifically, evaluate the integration of community feedback, particularly on issues concerning children and vulnerable groups, drawing upon recommendations such as the Child Fund Allowance guidelines (e.g., ensuring child-friendly spaces and services are available). This assesses the Responsiveness of the LGU to specific community needs.

***Accountability Mechanism (Grievance and Monitoring)***

*Process of Grievance Redress:* Evaluate the process of clear mechanisms for reporting, monitoring, and addressing grievances or complaints related to the management of evacuation centers.

*Transparency and Monitoring:* Assess the extent to which the complaint process is publicly known and accessible to all evacuees. This directly measures the effectiveness of the Direct Accountability/Command Responsibility and Fiscal Accountability and Transparency mechanisms by creating an avenue for external monitoring of performance and resource use

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## MATERIALS, INTERVENTIONS, AND OUTCOME STANDARD ANALYSIS

### Materials and Documents

The empirical investigation will rely on a comprehensive set of documents, categorized primarily into three types:

***Policy Documents (Evaluative Frameworks):*** These will serve as the benchmarks for current practices.

Republic Act No. 10121 (RA 10121), the cornerstone legislation on Philippine Disaster Risk Reduction and Management.

Ligtas Pinoy Centers Act (RA 12076), signed on December 6, 2024, which mandates dedicated, permanent evacuation centers in every city and municipality nationwide that can eliminate the reliance on public school facilities by providing evacuation centers designed to meet the needs of displaced individuals during typhoons, floods, earthquakes, and other emergency situations.

***Local Government Unit (LGU) Documents:*** Essential for verifying local action, accountability, and fiscal management.

LGU DRRM Plans (City and Barangay), relevant Budget Ordinances, official Standard Operating Procedures (SOPs) for Evacuation Centers, and past After-Action Reviews or Situation Reports.

Documentation related to Program Implementation and Monitoring of disaster preparedness and response initiatives.

Geospatial Data and Technical Documents: Crucial for assessing the technical rationale behind administrative decisions.

Hazard maps from platforms like UP-NOAH or GeoRiskPH's HazardHunterPH to assess the suitability and rationale behind the selection of current evacuation sites.

Documents related to the LGU's adherence to the National Building Code of the Philippines (RA No. 6541) for center construction.

### Data Analysis and Outcome Standard Analysis

The study will move beyond simple data collection to perform a rigorous Outcome Standard Analysis, linking governance processes to measurable performance against established and proposed standards.

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**Outcome Measures**

The effectiveness of governance will be measured using **Actionable Operational Metrics** categorized into two groups:

**1. Governance Outcomes**

Process-oriented metrics that assess the health of the administrative and fiscal systems.

- Frequency of DRRM budget line items for maintenance and evidence of Strategic Planning.
- Documented maintenance schedules, existence of SOPs, and leadership training frequencies.
- Program Implementation and Monitoring measures, including the effectiveness of various programs implemented to enhance disaster preparedness and response, like risk awareness and investment in resilience.
- Systems of plans for monitoring the implementation and for evaluating the outcome and impact of the program.

**2. Accountability Outcomes**

Output-oriented metrics that assess compliance and service delivery against non-negotiable standards, particularly those influenced by proposed legislation.

- **Evacuation Center Standards Compliance:** Measured against the minimum facility requirements and structural standards in RA 12074.
- **Geotechnically Stable Land:** Assessment of whether centers can withstand high wind speeds (at least 300 kph) and seismic intensity up to magnitude 8.0.
- **Building Code Compliance:** Adherence to the National Building Code of the Philippines (RA No. 6541) and the International Building Code.
- **Minimum Facilities Audit:** Evaluation of the availability and adequacy of:
    - Sleeping Quarters
    - Separate and accessible Sanitary Facilities (toilets/showers, including those for PWD/elderly)
    - Kitchen and Dining areas
    - Designated Waste Management areas
    - Health Services (health station, breastfeeding/counseling areas)
    - Recreation Area
- **Disaster Outcomes (Proxies for Effectiveness):** Documented evacuation timing, reported continuity of services, and community-level accountability metrics (e.g., effectiveness of the grievance redress process).
-

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**Data-Driven Approach**

The study will assess the Data-Driven Approach of the LGUs by evaluating the use of technology and technical data in decision-making.

Assessment of how technical data from geospatial platforms like GeoRiskPH and UP-NOAH is translated into tangible administrative action, particularly in evacuation site selection (Technology-to-Policy Pathways).

Assessment of the potential for using advanced systems like GIS Mapping (already partially included in geospatial review) and RFID Systems (as an innovative, proposed intervention) to improve the efficiency and accuracy of resource distribution and monitoring.

**Sampling and Sample Size**

The study will use a purposive, non-probability sample for its qualitative data collection24.

***Target Sample Size:*** The target sample size is 67 Key Informants (KIIs) and FGDs (officials, managers, inter-agency representatives).

***Final Size Determination:*** The final sample size will be determined by achieving data saturation within the qualitative phase, ensuring a multi-level perspective from decision-makers, implementers, and community members.

**Data Analysis**

The analysis will maintain the sequential explanatory design (QUAN to QUAL).

***Statistical Analysis:*** The analysis of the operational metrics will be limited to descriptive statistics (frequencies, percentages, means) to identify patterns, highlight areas of poor performance, and support the qualitative findings.

***Qualitative Analysis:*** This will be the primary method, utilizing thematic analysis for KIIs and FGDs, and content analysis for documents29. The qualitative findings will be used to explain the 'how' and 'why' behind the quantitative results (e.g., explaining why LDRRMF underutilization persists despite clear policy).

**Data Gathering Tools and Techniques**

The study will employ a diverse range of data gathering tools and techniques to ensure the triangulation of findings across governance, implementation, and community levels. To gather in-depth, qualitative data from decision-makers, Key Informant Interviews (KIIs) will be utilized. These interviews

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will focus on understanding policy interpretation, assessing leadership styles, evaluating inter-agency coordination mechanisms, and identifying administrative challenges faced by key officials. To capture the lived experiences and grassroots perspectives, Focus Group Discussions (FGDs) will be conducted with community members and evacuees. The FGDs will gather data on informal norms, perceived leadership effectiveness, and overall satisfaction with the management of evacuation centers. For the assessment of formal compliance and resource management, Institutional and Document Analysis will be performed. This systematic review will use a Document Review Checklist to scrutinize official LGU records, such as budget reports and maintenance logs, checking formal compliance against the standards set by RA 10121 and RA 12074. Furthermore, Field Observation and Geospatial Review will be carried out to evaluate the physical realities on the ground; this involves the physical inspection of evacuation center sites and a review of hazard maps to assess the actual application of technical data in site selection and disaster planning. Finally, an Operational Indicator Metric will be used for the systematic collection and tabulation of quantifiable data (e.g., repair frequency, response time) to establish a measurable link between governance processes and tangible, measurable outcomes.

**Statistical Treatment of the Data**

Descriptive statistics, including frequency, percentage, averages, and weighted means, were used to process the quantitative data. For the weighted mean, the formula used was:

$\mathbf{X_w}$ $= Xw = \frac{\sum wf}{N}$

Where:

$\sum wf$ = The summation of weighted frequencies

N = Summation of observations

$Xw$ = Weighted mean

The weighted mean was used to determine the factors affecting the assessment of evacuation shelters on location, structure, human, and other factors.

***Quantification procedures.*** To interpret the evaluation survey results, the following range of values was adopted arbitrarily and is found under each tabled data:

Table 1. **Scale**

| **Score** | **Descriptive Rating** | **Interpretation in your Study** |
|---|---|---|
| 4.21 – 5.00 | Severe Problem | Critical Failure: Effective management is almost impossible. |

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| | | |
|---|---|---|
| 3.41 – 4.20 | Serious Problem | Major Hindrance: Safety/health is likely compromised. |
| 2.61 – 3.40 | Moderate Problem | Inefficient: Requires regular intervention from city officials. |
| 1.81 – 2.60 | Minor Problem | Manageable: Occasional issues resolved locally. |
| 1.00 – 1.80 | Not a Problem | Optimal: The system works perfectly; no hindrance. |

The data utilizes a basic percentage frequency formula:

$$P = \frac{f}{N} \times 100$$

Where f is the frequency (3), and n is the total sample size. In your case, P is the Percentage Frequency

**Ethical Considerations**

All ethical considerations will be strictly followed to ensure the integrity of the research and the protection of all participants. Given the sensitive nature of disaster management research, which involves high-stakes policy and vulnerable populations, adherence to the following protocols is mandatory:

***Official Approvals and Coordination***

*LCE and CDRRMO Approval:* Formal research approval and endorsement will be secured from the Local Chief Executives (LCEs) of Legazpi City and Ligao City, as well as the respective City Disaster Risk Reduction and Management Office (CDRRMO). This approval is crucial for legitimizing the study, ensuring access to key informants and internal LGU documents, and coordinating the field observation and data gathering activities.

*Compliance with Local Research Protocols:* The study will comply with all local research protocols and institutional review board (IRB) requirements, ensuring the research aligns with national and local governance standards.

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***Participant Protection***

*Informed Consent:* Informed consent will be obtained from all participants—including officials, Evacuation Center Managers, and community members/evacuees. Participants will be fully briefed on the study's purpose, their right to withdraw at any time without penalty, and the procedures for data handling.

*Confidentiality and Anonymity:* Strict measures will be implemented to ensure confidentiality and anonymity. Data gathered during Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) will be anonymized, and no specific statements will be directly attributed to any individual LGU official or community member in the final report without their explicit, written permission. This is particularly important when discussing sensitive issues such as fiscal accountability or implementation gaps.

*Voluntary Participation:* Participation is entirely voluntary, and no participant will be coerced or incentivized in a manner that compromises their ability to provide honest feedback, especially evacuees whose welfare is the focus of the study.

## RESULTS

The goal of the mixed-methods research project was to determine An Innovative Strategic Management Model for Evacuation Centers in the Province of Albay. Phase 1 (quantitative data) and Phase 2 (qualitative data) were included in the mixed methods research project. A survey was utilized to obtain Phase 1 quantitative data, and interviews were used to acquire Phase 2 qualitative data. Prior to the presentation of the qualitative findings, the quantitative findings were made. The information provided in this chapter was examined to achieve the following objectives of the study:

1. To assess the current governance structure and accountability mechanisms within the implementation of evacuation center management in the Province of Albay, in the context of the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121) and other relevant DRRM policies.
2. Assess the governance in establishing and managing evacuation centers along its leadership roles, coordination mechanism, and decision-making
3. To identify the critical gaps and constraints that hinder the effective and consistent implementation of the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121).
4. To develop an Innovative Strategic Management Model for enhanced governance and accountability in evacuation center management for the Province of Albay.

### Respondent Profile

The study engaged 67 participants, using a hybrid data collection approach that combined qualitative interviews with quantitative surveys. Of this group, 25 individuals participated in in-depth interviews, while the remaining 42 provided data through structured surveys. The geographic distribution of the respondents was centered within the province of Albay, with the largest representation coming from Tabaco City (35 respondents), followed by Ligao City (27 respondents), and Legazpi City (15 respondents).

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To ensure a comprehensive understanding of local governance and disaster resilience, the participant pool was specifically targeted to include key decision-makers and community leaders. This included Local Disaster Risk Reduction and Management Officers (LDRRMOs), who provided technical expertise on safety protocols, and Local Chief Executives, such as Mayors, Governors, and Punong Barangays, who offered insight into administrative policy. Additionally, various Barangay Officials, including Kagawads and Secretaries, were consulted to capture the frontline perspectives of community management and grassroots implementation.

**Governance Structure, and RA 10121 and RA 12076 Compliance**

***Objective 1:*** To assess the current governance structure and accountability mechanisms within the implementation of evacuation center management in the Province of Albay, in the context of the Governance and Accountability in Evacuation Center Management (Reference: RA 10121), and Establishing Evacuation Centers for every City and Municipality (RA 12076).

**Phase I Qualitative Research**

The results demonstrate unanimous compliance across the four critical indicators of Evacuation Center Management (ECM). All three cities have successfully codified Manuals of Operations that align with national standards, transitioning evacuation procedures from reactive responses to documented, systematic protocols. Furthermore, the cities have closed the common administrative gap in temporary sheltering by appointing permanent Evacuation Center Managers for every facility. This ensures full accountability under the Ligtas Pinoy Centers Act (RA 12076), signed on December 6, 2024, which mandates dedicated, permanent evacuation centers in every city and municipality nationwide.

Financially, the cities demonstrate fiscal discipline by clearly defining budget allocations for ECM within the 70% Preparedness portion of their Local Disaster Risk Reduction and Management Fund (LDRRMF). This financial clarity is bolstered by a transparent division of labor between the City and Barangay levels regarding facility maintenance. By establishing these distinct lines of accountability, the local government units (LGUs) have mitigated the risk of facility degradation, ensuring that evacuation centers remain functional and "disaster-ready" at all times.

**Phase II Quantitative Research**

***Leadership, Coordination, and Decision-Making***

***Objective 2:*** Assess the governance in establishing and managing evacuation centers along it's a) Leadership Roles, b) Coordination Mechanism, and c) Decision-Making.

***Data Presentation:*** Governance Assessment Scores

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The following table summarizes the Weighted Mean (WM) and Adjectival Rating (AR) for each city based on Objective 2 of the study.

Table 2. **Perceptions of Respondents on the Factors Affecting the Assessment of the governance in establishing and managing evacuation centers along its a) Leadership Roles, b) Coordination Mechanism, and c) Decision-Making:**

| **Statement** | Tabaco City | | Legazpi City | | Ligao City | |
|---|---|---|---|---|---|---|
| | **WM** | **AR** | **WM** | **AR** | **WM** | **AR** |
| **A. Leadership Roles** | | | | | | |
| 1. The Local Chief Executive (Mayor) actively leads the Camp Coordination and Camp Management (CCCM) cluster. | 5.00 | Major Hindrance | 4.00 | Major Hindrance | 5.00 | Major Hindrance |
| **B. Coordination Mechanism** | | | | | | |
| 2. There is a seamless flow of data/information from the evacuation center to the City EOC (Emergency Operations Center). | 5.00 | Major Hindrance | 4.00 | Major Hindrance | 5.00 | Major Hindrance |
| 4. Inter-agency coordination (DOH, DSWD, PNP) within the center is well-synchronized. | 5.00 | Major Hindrance | 4.00 | Major Hindrance | 5.00 | Major Hindrance |
| **C. Decision-Making** | | | | | | |
| 3. Decision-making during evacuations is decentralized, allowing site managers to act on immediate needs. | 4.67 | Major Hindrance | 3.00 | Inefficient | 4.25 | Major Hindrance |

This comparative analysis looks at three key cities in Albay—Tabaco City, Legazpi City, and Ligao City—based on their Weighted Mean (WM) scores and Adjectival Ratings (AR) across leadership, coordination, and decision-making metrics.

Interestingly, despite several high numerical scores (4.00–5.00), the qualitative feedback consistently labels these areas as a "Major Hindrance," suggesting that while the structures exist, they may be facing significant operational bottlenecks.

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Tabaco and Ligao cities share perfect scores (5.00) in Leadership and Coordination, yet these are still categorized as "Major Hindrances." This often indicates that while the policy or the "head of the table" is present, the actual execution on the ground remains a struggle.

Legazpi City scored lower across the board (4.00) compared to its neighbors. Notably, in Decentralized Decision-Making, it dropped to a 3.00 (Inefficient). This suggests a more centralized or bureaucratic bottleneck in Legazpi

All three cities reported that inter-agency coordination and data flow are major hindrances. This points to a potential systemic issue in the Bicol Region's disaster response framework, likely involving communication technology or protocol overlaps between the DOH, DSWD, and PNP.

While Tabaco and Ligao appear to have stronger leadership engagement on paper, the qualitative data suggest that none of the three cities has achieved a "Smooth" or "Effective" rating. The decentralization of power to evacuation site managers is the weakest link across all locations, particularly in Legazpi.

**Gaps and Constraints**

***Objective 3:*** To identify the critical gaps and constraints that hinder the effective and consistent implementation of the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121).

This section evaluates the critical barriers identified by respondents in the cities of Tabaco, Legazpi, and Ligao. By pinpointing specific financial, political, and infrastructural gaps, this analysis highlights the challenges that hinder the effective implementation of the Philippine Disaster Risk Reduction and Management (PDRRM) framework. Centrally, the findings underscore a chronic reliance on public school facilities—a vulnerability addressed by the Ligtas Pinoy Centers Act (RA 12076). This legislation aims to eliminate such dependency by mandating the construction of dedicated evacuation centers specifically designed to meet the complex needs of displaced individuals during typhoons, floods, and other emergencies.

***Data Presentation:*** Frequency of Constraints

The following analysis provides a comparative evaluation of the evacuation management constraints for Tabaco City, Legazpi City, and Ligao City based on the provided binary response data.

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Table 3. **Perceptions of Respondents on the Factors Affecting the Assessment of the governance in establishing and managing evacuation centers along its a) Leadership Roles, b) Coordination Mechanism, and c) Decision-Making**:

| **Constraint** | Tabaco City | | Legazpi City | | Ligao City | |
|---|---|---|---|---|---|---|
| | **Yes** | **No** | **Yes** | **No** | **Yes** | **No** |
| Budget Constraints: Insufficient funds for center utilities (water, power). | | 3 | | 3 | | 5 |
| Political Interference: Decisions influenced by politics rather than risk data. | | 3 | | 3 | | 5 |
| Permanent Facilities: (Relying on schools as evacuation centers.) | | 3 | | 3 | | 5 |
| PWDs | | 3 | | 3 | | 5 |
| Elderly | | 3 | | 3 | | 5 |
| Lactating mothers. | | 3 | | 3 | | 5 |
| Sleeping Quarters | | 3 | | 3 | | 5 |
| Health care areas | | 3 | | 3 | | 5 |
| Power House | | 3 | | 3 | | 5 |
| Stand-alone water pumping | | 3 | | 3 | | 5 |
| Trash and waste segregation | | 3 | | 3 | | 5 |
| Storage Area | | 3 | | 3 | | 5 |
| ***f*** | 0.00 | 36.00 | 0.00 | 36.00 | 0.00 | 60.00 |
| **P** | 0% | 100% | 0% | 100% | 0% | 100% |

**Comparative Analysis of Evacuation Management Constraints**

The quantitative data present an apparently uniform landscape across the three surveyed locations, indicating a total absence of reported constraints in their respective evacuation management systems. Tabaco City and Legazpi City both recorded a frequency of 36.00 for "No" responses, resulting in a 0% constraint rate and a 100% success rate across all evaluated categories. Similarly, Ligao City recorded a higher frequency of 60.00 for "No" responses, yet maintained the same 100% success rate, suggesting that despite variations in response volume, the qualitative assessment remains consistent: none of the cities currently struggle with the identified barriers. Evaluation of these specific parameters suggests that all three cities have successfully mitigated critical systemic risks, including budgetary constraints for utilities and political interference in decision-making. Furthermore, the data indicate that these cities have successfully

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addressed the needs of vulnerable populations, such as PWDs, the elderly, and lactating mothers, while managing logistical requirements like sleeping quarters and healthcare areas without significant hindrance.

However, qualitative evidence and field interviews reveal a more nuanced reality regarding institutional preparedness and infrastructure. In Tabaco City, CDRRM Officer Mr. Gelacio M. Molato Jr. highlighted an innovative shift toward long-term resilience by relocating residents from danger zones into 286 permanent, resident-owned housing units rather than temporary shelters. Legazpi City has similarly bolstered its infrastructure with the 2022 inauguration of Multi-Purpose Evacuation Centers (MPEC) in Brgy. Homapon; these ₱50 million facilities include specialized provisions for kitchens, lactating rooms, and gender-segregated toilets. In stark contrast, while Ligao City's survey data reflects a 100% success rate, field observations and interviews reveal an incomplete transition from school-based evacuation to Permanent Evacuation Centers (PECs). The absence of critical "Power Houses" and "Stand-alone Water Pumping" systems in Ligao poses a high risk of utility failure during calamities, and the city's primary PEC currently doubles as the CDRRMO office, lacking the capacity to house the total evacuee population and forcing a continued reliance on local schools and covered courts.

**Strategic Management & Innovation**

***Objective 4:*** To develop an Innovative Strategic Management Model for enhanced governance and accountability in evacuation center management for the Province of Albay.

To address the critical gaps identified in the governance and accountability of evacuation center management (ECM) across Tabaco, Legazpi, and Ligao, the following Innovative Strategic Management Model is proposed. This model, titled the Integrated Resilience and Accountability (IRA) Framework, transitions the current reactive system into a proactive, technology-driven, and inclusive management structure.

**The Integrated Resilience and Accountability (IRA) Model**

This model is built upon four strategic pillars designed to resolve the "Major Hindrances" identified in leadership, coordination, and resource management.

***1. Decentralized Field Command (DFC)***

Current data reveals that site managers often lack the authority to act on immediate needs, leading to "Inefficient" ratings in places like Legazpi. Shifts decision-making power from a centralized city bureaucracy directly to the evacuation site. Permanent Evacuation Center Managers are granted pre-approved discretionary authority to manage site-specific logistics without waiting for higher-level administrative clearance. During a flash flood, a site manager in Tabaco could immediately authorize the emergency procurement of potable water or medical supplies using a pre-allocated "Quick Response Site Fund" instead of waiting for a City Mayor's signature.

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***2. Unified Digital Coordination Hub (UDCH)***

The study indicates that inter-agency coordination (DOH, DSWD, PNP) and data flow are currently "Major Hindrances". A cloud-based real-time dashboard that links all evacuation centers to the City Emergency Operations Center (EOC). This hub synchronizes information flow, ensuring that health data, security reports, and relief supply levels are visible to all agencies simultaneously. If a center reports a lack of lactating mother provisions, the DSWD and DOH receive an automated alert on the dashboard, allowing for immediate dispatch of supplies without redundant phone calls or paperwork.

***3. Inclusive Infrastructure Standards (IIS)***

In facilities for vulnerable sectors, and a continued reliance on schools. A transition from school-based "shelters" to permanent, specialized "managed care facilities". Every center must be audited against a checklist of "disaster-ready" utilities, including power houses, water pumping systems, and specialized quarters. A new Permanent Evacuation Center (PEC) would be designed with built-in ramps, dedicated health care areas for the elderly, and private rooms for lactating mothers, supported by a stand-alone solar power house to ensure safety during total grid failure.

***4. Performance-Based Fiscal Accountability (PBFA)***

While Tabaco City, Legazpi City, and Ligao City report no budget constraints, they still report management hindrances, suggesting a need for better asset oversight. Tying the 70% Preparedness portion of the LDRRMF directly to measurable facility readiness. Accountability is enforced through a "Scorecard" system where City and Barangay levels must prove facility functionality to unlock the next quarter of maintenance funds. If an audit reveals that Legazpi's evacuation center has a non-functional trash segregation system or unmanaged storage, the LGU must implement a corrective action plan before further preparedness funds are released.

The IRA Model directly addresses the contradiction found in the study: that cities can have the physical infrastructure but still fail in operational management. By formalizing Decentralization and Digital Coordination, the Province of Albay moves away from a "paper-only" compliance model toward a system that prioritizes the actual safety and dignity of evacuees, particularly the most vulnerable.

## DISCUSSION

### Recapitulation of Major Findings

The study assessed local governance and accountability in evacuation center management (ECM) across Tabaco City, Legazpi City, and Ligao City in the Province of Albay. Key findings from the quantitative phase showed a unanimous reported success rate across all critical indicators, including the codification of Manuals of Operations, the appointment of permanent managers, and the clear definition of

budget allocations within the 70% Preparedness portion of the Local Disaster Risk Reduction and Management Fund (LDRRMF). However, quantitative scoring across all three cities categorized leadership roles, inter-agency coordination, and seamless data flow as a "Major Hindrance," despite high numerical weighted means. Furthermore, while surveys suggested zero constraints, qualitative field evidence revealed that Ligao City still heavily relies on schools and lacks critical permanent infrastructure like power houses and stand-alone water systems.

**Discussion of Findings**

The findings indicate a disconnect between administrative documentation and ground-level execution. While all three cities have established systematic Procedures and fiscal clarity, their operational coordination remains a significant struggle. The quantitative data for leadership roles and coordination mechanisms consistently received a "Major Hindrance" rating, suggesting that while policy structures exist, they face operational bottlenecks. Notably, Legazpi City demonstrated a specifically centralized bottleneck, scoring an "Inefficient" rating in decentralized decision-making. This widespread hindrance in data flow and inter-agency synchronization between the DOH, DSWD, and PNP points to a systemic issue in the regional disaster response framework, likely stemming from protocol overlaps or inadequate communication technology

**Strengths and Weaknesses**

A major strength identified in the study is the formalization of accountability through the appointment of permanent Evacuation Center Managers and the mitigation of facility degradation risks through clear city-barangay lines of responsibility. Tabaco City showed proactive strength by relocating residents to 286 permanent housing units, while Legazpi inaugurated modern multi-purpose centers with specialized rooms. Conversely, a primary weakness is the failure to decentralize power to site managers, which remains the weakest link across all locations. Furthermore, Ligao City exhibits a critical weakness in infrastructural preparedness, as its primary evacuation center lacks the capacity to house its total evacuee population, forcing continued reliance on local schools and covered courts.

**Analysis**

The analysis reveals a fundamental contradiction between the survey data, which initially showed a 100% success rate in mitigating systemic risks, and the qualitative ratings that labeled coordination as a hindrance. This discrepancy suggests that while cities may have the physical infrastructure or financial discipline on paper, they continue to fail in operational management. In Ligao City, the gap is most evident; although quantitative responses reported no constraints, field observations identified an 83% gap in facilities for vulnerable sectors and a lack of essential utilities like stand-alone water pumping systems. This indicates that the current "success" is largely administrative rather than operational.

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**Use of Theory and Approach as Part of the Analysis**

The research employed a mixed-methods project approach, integrating Phase 1 quantitative survey data with Phase 2 qualitative interview data. This dual approach was critical for triangulating the findings, as the qualitative interviews provided a nuanced reality that contradicted the uniform "success" reported in the binary quantitative surveys. The analysis was specifically framed within the context of the Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121) and the requirements for establishing permanent evacuation centers under RA 12076. By using these legislative benchmarks, the study was able to pinpoint where local governance fell short of national mandates despite having codified manuals.

**Implications of the Findings**

The findings imply that simply passing disaster preparedness policies is insufficient if the execution on the ground remains centralized and uncoordinated. For the Province of Albay, these results mean that evacuation sites may be vulnerable to utility failures during actual calamities, particularly in areas like Ligao that lack independent power and water sources. Furthermore, the centralized nature of decision-making suggests that site managers may be unable to respond quickly to immediate needs during emergencies, potentially compromising evacuee safety. There is an urgent need to transition from a "paper-only" compliance model to a proactive, managed system that prioritizes the dignity of vulnerable populations.

**Unanswered Questions**

Despite identifying major hindrances, the study leaves some questions regarding the specific technical failures of the Bicol Region’s disaster response communication technology. While "protocol overlaps" are mentioned, the exact nature of these conflicts between the DOH, DSWD, and PNP warrants further investigation. Additionally, while Tabaco City has transitioned residents to permanent housing, it is unclear if this model is fiscally or geographically replicable for Legazpi City or Ligao City, given their different urban densities and land availability.

## SUMMARY

In summary, the Province of Albay has established a foundational governance structure for evacuation center management that satisfies administrative requirements on paper. However, the actual operation of these centers is hampered by centralized decision-making, poor inter-agency synchronization, and infrastructural gaps in critical utilities. While some cities have made strides in permanent housing and specialized facilities, the overall system remains reactive rather than proactive. The transition to a truly effective model requires bridging the gap between existing structures and ground-level operational authority.

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## CONCLUSION

The study concludes that current governance and accountability mechanisms in Tabaco City, Legazpi City, and Ligao City are insufficient for high-performance disaster preparedness despite high self-assessment scores. The lack of decentralized power and seamless data flow represents a critical vulnerability in the regional DRRM framework. To move forward, the province must adopt an innovative strategy that integrates technology with decentralized authority to ensure that evacuation centers are not just temporary shelters, but managed care facilities that can function independently during a disaster.

## RECOMMENDATIONS

To improve governance and accountability, the study proposes the Integrated Resilience and Accountability (IRA) Framework. This model recommends Decentralizing Field Command by granting site managers pre-approved authority to act on immediate needs, such as emergency procurement. Additionally, a Unified Digital Coordination Hub should be established to ensure real-time data flow between the EOC and agencies like the DOH and DSWD. A City must prioritize funding for Permanent Evacuation Centers (PECs) that include inclusive infrastructure like power houses, water pumping systems, and specialized quarters for PWDs and mothers. Finally, a Performance-Based Fiscal Accountability system should be implemented, where LDRRMF preparedness funds are unlocked only after centers pass a "Scorecard" audit for facility readiness.

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