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WHY DO SOME CITIES GOVERN GREENER? MEASURING CITY-LEVEL CAPACITY FOR ENVIRONMENTAL GOVERNANCE IN MINDANAO, PHILIPPINES

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Abstract
Local governments play a pivotal role in advancing environmental sustainability, yet cities operating under similar legal mandates and ecological pressures often display markedly different governance outcomes. This study asks why some cities govern greener than others by examining how variations in administrative capacity shape environmental governance performance at the city level. Focusing on selected cities in Mindanao, Philippines, the research develops and applies a Green Governance Capacity Index (GGCI) to systematically measure local government capacity for environmental governance. Using a mixed-methods research design, the study integrates documentary analysis, administrative records, survey data, and key informant interviews to operationalize city-level capacity across three core dimensions: organizational–institutional capacity, human resource capacity, and fiscal capacity. These dimensions are translated into standardized indicators capturing institutional structure, staffing stability and specialization, and budgetary prioritization for environmental programs. The GGCI is then used to compare cities and assess how capacity differentials correspond with observed governance outcomes such as regulatory compliance, program continuity, and stakeholder engagement. Findings demonstrate that cities with higher green governance capacity scores consistently exhibit stronger environmental governance performance, including more sustained implementation of environmental programs, higher compliance with national environmental regulations, and more institutionalized mechanisms for stakeholder participation. Conversely, cities with fragmented organizational arrangements, high personnel turnover, and unstable funding display weaker and more episodic governance outcomes. The results underscore administrative capacity as a critical mediating factor between decentralization and environmental performance. The study contributes to the literature by offering a replicable measurement framework for assessing local environmental governance capacity in developing contexts. Policy implications emphasize the need for institutionalized environmental offices, professionalized staffing, and predictable fiscal support to strengthen city-level environmental governance under decentralized systems.

Keywords: environmental governance; administrative capacity; decentralization; local government; sustainability; Philippines

1. INTRODUCTION

Cities are increasingly recognized as critical arenas for environmental governance. As urbanization accelerates and environmental pressures intensify, local governments are expected to translate national sustainability mandates into concrete policies, programs, and regulatory actions. In decentralized governance systems, this responsibility is formally devolved to local government units (LGUs), granting cities significant authority over environmental management, land use, waste governance, and climate adaptation. Yet, despite operating under common legal frameworks, cities often demonstrate strikingly uneven environmental governance outcomes.

In the Philippines, decentralization has empowered cities with substantial environmental responsibilities, including the implementation of national environmental laws, enforcement of waste management regulations, and coordination of climate-related initiatives. However, empirical observations suggest that some cities consistently perform better than others in sustaining environmental programs, ensuring regulatory compliance, and engaging stakeholders. This variation raises a fundamental governance question: why do some cities govern greener than others?

Existing scholarship highlights multiple explanations for uneven local environmental performance, including political leadership, community participation, and socio-economic context. While these factors are important, growing evidence suggests that administrative capacity—the ability of local governments to organize, staff, finance, and sustain public action—plays a decisive role in shaping governance outcomes. Nevertheless, administrative capacity remains under-measured in environmental governance research, particularly in developing and decentralized contexts.

This study addresses this gap by developing a Green Governance Capacity Index (GGCI) to systematically measure city-level capacity for environmental governance. Using selected cities in Mindanao as comparative cases, the research examines how differences in administrative capacity correspond with observed environmental governance outcomes. By shifting the analytical focus from policy design to implementation capacity, the study contributes a practical and theoretically grounded explanation for variation in local environmental governance performance.

2. Literature Review

2.1 Environmental Governance and Decentralization

Environmental governance refers to the institutional arrangements, policy instruments, and processes through which societies manage environmental resources and risks. In decentralized systems, environmental governance is increasingly localized, with cities acting as key implementing agents. Decentralization theory suggests that local governments are better positioned to respond to context-specific environmental challenges due to proximity, information advantages, and accountability to local stakeholders. However, decentralization also exposes disparities in local capacity, often resulting in uneven policy implementation.

Studies in developing contexts demonstrate that decentralization alone does not guarantee improved environmental outcomes. Instead, outcomes depend on whether local governments possess the administrative capacity to exercise devolved authority effectively. Without sufficient institutional support, decentralization may exacerbate governance gaps rather than resolve them.

2.2 Administrative Capacity as a Governance Determinant

Administrative capacity broadly refers to the resources, competencies, and institutional arrangements that enable governments to formulate and implement public policy. In public administration literature, capacity is commonly conceptualized across organizational, human resource, and fiscal dimensions. These dimensions are particularly relevant to environmental governance, which requires sustained technical expertise, cross-sector coordination, and long-term financial investment.

Empirical research increasingly links administrative capacity to regulatory compliance, service delivery quality, and policy sustainability. However, environmental governance studies often treat capacity implicitly or rely on proxy indicators, limiting analytical precision. There remains a need for systematic, transparent, and replicable measurement tools that capture how capacity operates at the local level.

2.3 Measuring Local Environmental Governance Capacity

Measurement efforts in environmental governance have traditionally focused on outcomes—such as pollution levels or service coverage—rather than the underlying capacity that produces these outcomes. Recent governance scholarship calls for capacity-focused metrics that can explain performance variation and inform policy reform. Index-based approaches offer a promising avenue, allowing multidimensional capacity constructs to be operationalized and compared across cases.

Building on this literature, the present study advances a capacity-based measurement framework tailored to city-level environmental governance in decentralized, resource-constrained settings.

3. Conceptual Framework

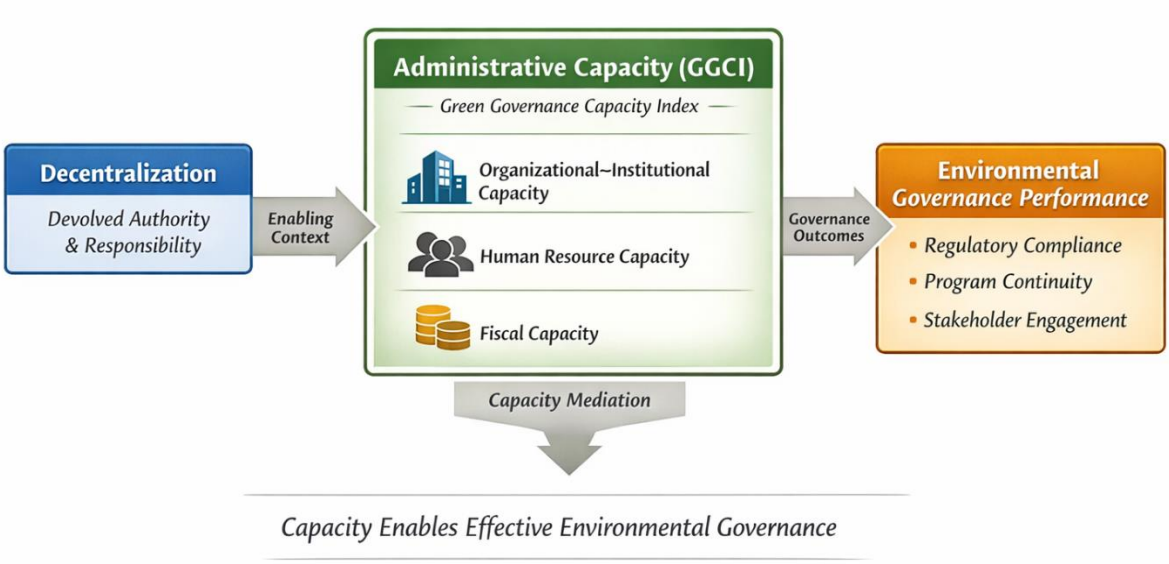
The study is anchored on the proposition that administrative capacity mediates the relationship between decentralization and environmental governance performance. Decentralization provides cities with authority and responsibility, but capacity determines whether this authority translates into effective governance.

The Green Governance Capacity Index is structured around three interrelated dimensions:

1. Organizational–Institutional Capacity
   This dimension captures the presence and stability of formal structures for environmental governance, including dedicated environmental offices, clear mandates, and coordination mechanisms within the city bureaucracy.
2. Human Resource Capacity
   This dimension assesses staffing adequacy, employment status (permanent versus contractual), technical specialization, and continuity of personnel involved in environmental functions.
3. Fiscal Capacity
   This dimension measures the extent to which cities allocate stable and sufficient financial resources to environmental programs, including budget shares, funding predictability, and investment orientation.

Higher levels of capacity across these dimensions are expected to produce stronger governance outcomes, reflected in regulatory compliance, program continuity, and stakeholder engagement.

Figure 1
The Role of Administrative Capacity in Environmental Governance



observed environmental governance performance. The design follows a structured case comparison logic: because the cities operate under the same national decentralization and environmental mandates, differences in governance outcomes are examined as systematic capacity-related variation, rather than differences in legal frameworks.

4.2 Data Sources

Multiple sources were used to increase validity and minimize self-report bias:

- Legal–institutional records: city ordinances, executive issuances, administrative orders
- Organizational evidence: organizational charts, office mandates, staffing complements (e.g., CENRO or equivalent)
- Fiscal records: annual budgets, AIP/appropriations, expenditure and utilization reports
- Program and compliance documentation: plans, implementation reports, compliance submissions, enforcement/monitoring outputs (where available)
- Perceptual and experiential evidence: surveys of city officials, key informant interviews (KIIs), and focus group discussions (FGDs) with administrators and stakeholders
- Documentary and fiscal records served as the primary verification base, while KIIs/FGDs were used for interpretation, context, and validation.

4.3 Index Construction (GGCI)

The GGCI operationalizes administrative capacity through three dimensions: (1) organizational–institutional capacity, (2) human resource capacity, and (3) fiscal capacity. For each dimension, indicators were extracted from documentary and administrative sources and converted into comparable metrics. Indicators were standardized to a common scoring scale and aggregated into dimension scores, then combined into a composite GGCI score. The index applies equal weighting across the three dimensions to reflect their complementary roles in implementation; sensitivity checks may be reported by testing alternative weighting schemes.
Qualitative evidence (KIIs/FGDs) was used to verify whether index scores reflected actual implementation conditions (e.g., coordination bottlenecks, staffing turnover, budget execution constraints).

4.4 Analytical Strategy

Analysis proceeds in two steps. First, the study compares GGCI scores across cities to establish a capacity gradient. Second, it examines how GGCI patterns correspond with environmental governance outcomes: regulatory compliance, program continuity, and stakeholder engagement. The study does not claim strict causal identification; rather, it reports consistent cross-case associations and uses qualitative validation to support a capacity-mediated explanation of performance differences.

5. RESULTS

5.1 Cross-city variation in Green Governance Capacity (GGCI)

Results indicate clear and systematic variation in green governance capacity across the cities studied. The composite Green Governance Capacity Index (GGCI) reveals a consistent capacity gradient, with Zamboanga City registering the highest overall capacity, followed by Pagadian City at a moderate level, and Dipolog City exhibiting comparatively lower capacity. Differences across cases are driven by variation in the institutionalization of environmental governance structures, staffing stability and technical adequacy, and fiscal prioritization for environmental programs.

Table 1
Green Governance Capacity Index (GGCI) Scores by City (0–100)

City	Organizational–Institutional Capacity	Human Resource Capacity	Fiscal Capacity	GGCI Composite	Rank
Zamboanga City	85	78	82	81.7	1

Pagadian City	65	60	58	61.0	2
Dipolog City	48	42	40	43.3	3

Note. Dimension scores are standardized to a 0–100 scale and aggregated using equal weights.

Cities with higher GGCI scores demonstrate stronger administrative foundations for environmental governance, while lower scores reflect structural, personnel, and fiscal constraints that limit implementation capacity.

5.2 Organizational–institutional capacity: institutionalization and coordination architecture

Substantial differences are observed in the degree of institutionalization of environmental governance. Zamboanga City exhibits a more formalized governance architecture, including a dedicated environmental office with clear mandates, standing coordination mechanisms, and documented routines for inter-office collaboration. Pagadian City shows partial institutionalization, with several mechanisms in place but less consistency in coordination practices. Dipolog City demonstrates weaker organizational embedding, with environmental functions more dispersed and coordination relying on ad hoc arrangements.

Table 2
Organizational–Institutional Capacity Indicators (Document-Verified)

Indicator	Zamboanga City	Pagadian City	Dipolog City
Dedicated environmental office (e.g., CENRO/equivalent)	2	2	1
Mandate formalized through ordinance/EO/office charter	2	1	1
Standing coordination body (e.g., SWM Board/TWG)	2	1	0
Documented routine for inter-office coordination	2	1	0
Approved local environmental/SWM/climate plan	2	2	1
Documented monitoring and reporting routine	2	1	1

Coding. 0 = absent; 1 = present/partial; 2 = present/active.

Higher organizational–institutional capacity corresponds with clearer accountability structures and reduced coordination friction, supporting more consistent implementation of environmental programs.

5.3 Human resource capacity: staffing continuity and technical adequacy

Human resource capacity differs markedly across the cases. Zamboanga City maintains a larger and more stable staffing complement, with a higher proportion of permanent personnel and access to technical expertise relevant to environmental governance. Pagadian City demonstrates moderate staffing levels but greater reliance on non-permanent personnel. Dipolog City shows the lowest staffing capacity, characterized by limited headcount, high dependence on contractual arrangements, and reduced continuity in key technical roles.

Table 3
Human Resource Capacity Indicators

Indicator	Zamboanga City	Pagadian City	Dipolog City
Total environmental office staff (headcount)	38	22	14
% permanent/plantilla personnel	72%	48%	35%
Presence of technical specialist roles	Yes	Partial	Limited
Continuity proxy (key posts stable over multiple years)	High	Moderate	Low

Cities with stronger human resource capacity benefit from greater institutional memory and enforcement credibility, while lower-capacity settings experience implementation vulnerability due to staff turnover and limited technical specialization.

5.4 Fiscal capacity: budget prioritization and implementation feasibility

Fiscal commitment to environmental governance also varies significantly. Zamboanga City allocates a larger and more stable share of its annual budget to environmental programs, enabling both operational continuity and investment-oriented activities. Pagadian City demonstrates moderate fiscal prioritization but with some year-to-year variability. Dipolog City allocates a comparatively smaller budget share, limiting the feasibility of sustained implementation and infrastructure-dependent compliance.

Table 4
Fiscal Capacity Indicators (2019–2023)

Indicator	Zamboanga City	Pagadian City	Dipolog City
Mean annual environmental budget (PHP, millions)	185	72	38
Mean % share of total city budget	4.6%	2.8%	1.9%
Budget stability (ordinal)	High	Moderate	Low
Evidence of capital investment orientation	Yes	Partial	Minimal
Budget utilization/execution rate	91%	83%	76%

Lower fiscal capacity constrains the ability of cities to move beyond minimal compliance toward sustained program delivery, particularly for infrastructure-intensive mandates.

5.5 Capacity–performance alignment: governance outcomes associated with GGCI gradients

Observed governance outcomes align closely with GGCI patterns. Zamboanga City demonstrates stronger regulatory compliance, sustained implementation of environmental initiatives, and more institutionalized stakeholder engagement mechanisms. Pagadian City shows moderate performance, with continuity dependent on specific programs and leadership cycles. Dipolog City exhibits more episodic implementation, reliance on short-term personnel and partnerships, and weaker institutionalization of engagement platforms.

Table 5
Environmental Governance Performance Outcomes (Comparative Summary)

Outcome Domain	Zamboanga City	Pagadian City	Dipolog City
Regulatory compliance	High	Moderate	Low–Moderate
Program continuity	High	Moderate	Low
Stakeholder engagement	Structured	Semi-structured	Ad hoc

While the study does not assert strict causality, the consistency of capacity gradients across organizational, human resource, and fiscal dimensions—and their alignment with governance outcomes—supports a capacity-mediated explanation of why some cities govern greener than others under similar decentralization and policy mandates.

6. DISCUSSION

The findings reinforce the argument that administrative capacity is a critical determinant of local environmental governance performance. Decentralization provides opportunity, but capacity determines execution. The GGCI illustrates how organizational design, human resources, and fiscal commitment interact to produce governance outcomes.

Importantly, the study demonstrates that capacity deficits are not merely financial. Organizational fragmentation and personnel instability can undermine governance even where legal mandates exist. This insight challenges policy approaches that focus narrowly on funding without addressing institutional and human capital dimensions.

7. POLICY IMPLICATIONS

The results suggest several policy directions:

- Institutionalize dedicated environmental offices within city governments
- Professionalize and stabilize environmental staffing
- Establish predictable funding mechanisms for environmental programs
- Strengthen national–local coordination to support capacity development
- These reforms can enhance the ability of cities to govern greener under decentralized systems.

8. CONCLUSION

Why do some cities govern greener than others? Evidence from Mindanao suggests that the answer lies not primarily in policy design or political intent, but in administrative capacity. By developing and applying a Green Governance Capacity Index, this study demonstrates how capacity differences shape environmental governance outcomes at the city level.

The GGCI offers a replicable tool for scholars and policymakers seeking to diagnose governance gaps and design targeted capacity-building interventions. Strengthening city-level administrative capacity is essential for translating sustainability mandates into durable environmental outcomes in decentralized contexts.

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