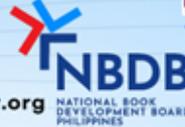




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Building a Disaster Resilient Society: Towards a Responsive Regulation and Institutional Reform in the Philippines' Disaster Risk Reduction Management

John Ray Camorongon
University of the Philippines, Diliman, Philippines
Corresponding Author email: jccamorongan@up.edu.ph

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Abstract

Aim: This study weighed into the role of regulation and institutions in building a disaster-resilient society in the Philippines, examining the challenges posed by climate change and the response of the public sector and all stakeholders.

Methodology: It employed a qualitative narrative analysis approach, guided by the New institutionalism theory and drawing from various reports and empirical studies conducted by local and international organizations in the field of Disaster Risk Reduction Management (DRRM), including the results of the Sunset review consultations mandated by Republic Act 10121.

Results: The findings underscore the need for institutional reforms and enhancing data accessibility of people to establish sustainable governmental regulations that ensure the protection and conservation of their well-being. These measures can bolster communities' resilience in the face of severe weather events and the compounding impacts of climate change.

Conclusion: The analysis shows that institutional reform, transformational leadership, and efficient access to data must be addressed to provide sustained government regulations to safeguard and preserve people's welfare.

Keywords: Disaster-resilient, Disaster risk management, New institutionalism, Institutional reform, Open data

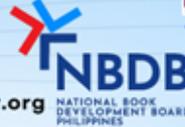
INTRODUCTION

The Philippines is vulnerable to disasters due to its geophysical location and socio-economic conditions. According to the 2022 World Risk Report, the Philippines is ranked first among the countries living in areas at risk from multiple hazards. And from 2011 to 2022, the Philippines is constantly among the top ten (10) countries in the World Risk Report since a large portion of its territory is vulnerable to extreme weather events owing to its location along the typhoon belt and Pacific Ring of Fire together with the impact of Climate change (Aleksandrova et al., 2021). Thus, the imperative presence of public institutions and their effective mechanisms to mitigate the repercussions of calamities within the country is indispensable.

It is crucial for society to strengthen its capacity to manage and mitigate risks and vulnerabilities caused by natural hazards. The role of public institutions in regulating the impact of risks on the community is becoming more crucial now than ever before. Hence, resilience becomes prominent in various sociopolitical discourse and public policy frameworks (Profiroiu, 2021; Pospisil & Kühn, 2016; Sjöstedt, 2015). Further, resilience became the litmus test of institutions and governance for several decades, especially with the exacerbation of the effects of climate change (Jovita et al., 2018). A disaster-resilient society is a social system that can efficiently and promptly anticipate, absorb, adapt to, and recover from the impacts of disasters. This is achieved while minimizing both the immediate and long-term negative consequences. The concept surpasses the simple prevention or mitigation of disasters and instead adopts a comprehensive approach to effectively addressing the various dimensions of resilience (Twigg, 2007). Resilience encompasses more than just physical infrastructure and technological progress; it also encompasses the enhancement of social, economic, and institutional capabilities that empower communities to endure and recover



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from disasters. Twigg (2007) underscores the significance of bolstering risk reduction measures, preparedness and response mechanisms, and long-term recovery and reconstruction endeavors to establish a society capable of actively managing and mitigating the effects of disasters. A disaster-resilient society is defined by its capacity to acquire knowledge from previous occurrences, adjust to evolving circumstances, and cultivate a culture of cooperation, creativity, and inclusiveness. These efforts aim to diminish vulnerabilities and improve society's overall well-being when confronted with adversity.

Effective and innovative strategies, people's behavior, and risk reduction and management measures are critical in building and achieving disaster resilience. These concepts are insufficient in form without emphasizing the role of institutions. The political institutions have direct accountability to create a platform where the whole society can contribute and actively build a resilient community, from planning to organizational capacities and coordination. Twigg (2007) formulated five (5) key areas of resiliency as shown in the table below;

Table 1. Characteristics of a Disaster-resilient Community

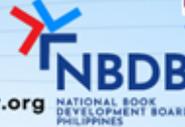
Thematic Area	Components of resilience
Governance	<ul style="list-style-type: none"> • Policy, planning, priorities and political commitment. • Legal and regulatory systems • Integration with development policies and planning • Integration with emergency response and recovery • Institutional mechanisms, capacities and structures; allocation of responsibilities • Partnerships • Accountability and community participation
Risk Assessment	<ul style="list-style-type: none"> • Hazards/risk data and assessment • Vulnerability and impact data and assessment • Scientific and technical capacities and innovation
Knowledge and Education	<ul style="list-style-type: none"> • Public awareness, knowledge and skills • Information management and sharing • Education and training • Cultures, attitudes, motivation • Learning and research
Risk management and vulnerability reduction	<ul style="list-style-type: none"> • Environmental and natural resource management • Health and well being • Sustainable livelihoods • Social protection • Financial instruments • Physical protection; structural and technical measures • Planning régimes
Disaster preparedness and response	<ul style="list-style-type: none"> • Organizational capacities and coordination • Early warning systems • Preparedness and contingency planning • Emergency resources and infrastructure • Emergency response and recovery • Participation, voluntarism, accountability

Note: Table Adapted from Twigg, J. (2007).

Effective governance requires the seamless integration of resilience considerations into development policies and planning. This involves conducting comprehensive risk assessments to analyze hazards, risks, vulnerabilities, and their potential impacts, providing a data-driven foundation for informed decision-making. Furthermore, education is vital for building resilience, as it promotes public awareness, understanding, and skills related to hazards and their consequences. Investing in educational programs that emphasize hazard awareness and preparedness empowers individuals and communities to take proactive measures (Twigg, 2007).



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Risk management and vulnerability reduction encompass various domains such as environmental management, health promotion, sustainable livelihoods, and social protection. This requires collaborative approaches and the engagement of stakeholders to collectively address risks and vulnerabilities.

Disaster preparedness and response complete the resilience framework, focusing on organizational capacities, coordination among stakeholders, early warning systems, and adequate emergency resources. Addressing these components can help policymakers and stakeholders improve a country's ability to withstand natural and human-induced disasters. This is crucial for ensuring the long-term well-being and safety of communities (Bollettino et. al., 2018)

New Institutionalism and Disaster-resilience

Institutions play a significant role in managing the risks of climate change by effectively enhancing every community's coping and adaptive capacities (Parsons et al., 2016). State institutions have great social relevance to the community as they are the primary instrument for life-and-death decision-making. An institution that creates and enforces social order, rules, monetary and fiscal policies, defense, foreign affairs, and public services is the same institution expected to know the probative value of mitigating and managing disaster risks.

The state institution does not operate in a vacuum; it transcends politics, socioeconomics, psychology, anthropology, laws, and culture. The theory of New institutionalism further broadens this concept to (1) the interdependence of what is relatively known as autonomous social and political institutions; (2) complex processes; and (3) ideas and symbols which are not mutually consistent (March & Olsen, 1984). The institutions could learn through their experiences in the past, on what March and Olsen (1984) called three (3) dimensions of experiential learning of the new institutionalism concept; (1) modification of strategy, (2) competencies, and (3) aspirations. Those 3 dimensions are important to achieving the institutional goals and performance outcomes that could directly affect strategy and institutional choices. Thus, institutions change and adapt to their immediate interests when necessary to achieve their goals.

Hall and Taylor (1996) describe these institutional changes as "Historical institutionalism," which was heavily influenced by the structural-functionalist perspective that political institutions as "an overall system of interacting parts." Hence institutions could significantly influence individuals' behavior and a factor to form "collective behavior," including "distinctive outcomes". This perspective establishes that institutions influence policy outcomes and generate people's behavior.

This concept and function of an institution are possible through the utilization of appropriate regulations. Regulation in this context refers to the institution's power to intervene, control, and influence social behavior and the activities of various sectors of society (Baldwin et al., 2012). Institution, as the primary instrument of the state, wields the inherent power of the state to impose regulation for the public interest – Police power doctrine. Institutions must maximize their regulatory authority over the activities of people they regard to be of high value (Selznick concept of regulation as cited by Baldwin et al., 2012). Thus, regulation of activities that will enhance or compromise the disaster resilience of society over disaster risks and vulnerabilities to natural hazards is necessary to protect and preserve the public's best interest.

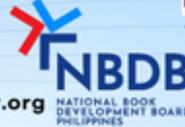
For several decades now, institutions have utilized regulatory policies and programs to reduce the vulnerabilities of the community, whether from man-made calamities or disasters due to natural hazards, through what they call social protection. There is a wide consensus that social protection is essential to social development and positively contributes to its beneficiaries, from conditional cash transfers (CCT) to universal pensions. The three basic domains and objectives of social protection are (1) poverty eradication, (2) the promotion of sustainable economic development, and (3) social justice (Midgley, 2020). These objectives are part of the components and characteristics of a disaster-resilient community. According to Twigg (2007), socioeconomic development programs and systems, including people's mutual access to basic social services, will reduce the vulnerability of one community and be recognized as one of the major characteristics of a disaster-resilient society.

In one report by Hall and Midgley (2004), in the 1960s, governments in the Global South saw an improvement in school enrolments and health conditions because governments started to augment their budget in social services. In 2000, the social protection programs such as social pension and conditional cash transfer (CCT) of Brazil, Mexico, and South Africa became a model globally as they successfully institutionalized those programs into a long-term state policy instead of a mere short-term amelioration program.

In 2012, 185 countries adopted the "Social Protection Floors Recommendation (No. 202)" of the International Labor Organization (ILO), which was also part of World Bank Goals 2030 with the main objective of eradicating poverty and bolstering shared prosperity. World Bank and ILO recognized social protection as a



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mechanism to provide individuals, particularly the disadvantaged, sustainable economic security and support (International Labor Organization, 2015).

According to the latest data from the ILO's World Social Protection Report 2020-22, 46.9 percent of the global population is effectively covered by at least one social protection benefit, excluding health and sickness benefits, such as (1) social assistance; (2) disability benefits; (3) pensions; (4) child and family benefits; (4) unemployment benefits; (5) work injury; and (6) maternity benefits. Health protection benefits are 66%, and sickness benefits are 33% worldwide. The ILO mentioned that those data is significant progress compared to the 2014-15 data, where only 30 percent of the global population in 183 countries were covered by at least one social protection.

The World Bank and ILO agreed that sufficient and comprehensive social protection systems directly impact people's resilience against socioeconomic shocks by reducing their vulnerabilities. Climate change mitigation initiatives are not succeeding quickly enough; when a socioeconomic shock occurs due to natural calamities, the poor and vulnerable cannot withstand enough. Thus, the only way to make them protected is to address and reduce their vulnerabilities before disaster strikes. In this way, all stakeholders and the community can efficiently prepare and endure any climate and disaster risks. The main objective of this study is to investigate the role of regulation in building a disaster-resilient society in the Philippines, focusing on institutional reform and access to data.

METHODS

This study employed qualitative narrative analysis to assess the disaster resilience regulatory framework of the Philippines. It aimed to infer lessons and draw recommendations from the reports and empirical studies of various agencies and international organizations to wit; (1) International Federation of Red Cross and Red Crescent Societies and the United Nations Development Programme, 2014; (2) 2022 World Risk Report conducted by Bündnis Entwicklung Hilft; (3) United Nations Office for Disaster Risk Reduction, 2019 and (4) the data and study conducted by Jovita et al., 2018. It includes the most recent **Sunset review and evaluation** of the current Disaster Risk Management (DRM) law, as mandated by Republic Act 10121 of the Philippines or the Philippine Disaster Risk Reduction and Management Act of 2010.

This paper investigates the concept of new institutionalism (March & Olsen, 1984) and the regulation (Baldwin et al., 2012) and their relationships to the development of a disaster-resilient society (Twigg, 2007). Utilizing the New institutionalism perspective helps us examine the regulatory frameworks' influence on social behavior and the implementation of measures through a multi-faceted approach. First, the existing regulations and policies related to disaster management and social protection were reviewed and analyzed. This involved an in-depth study of governmental, intergovernmental, and non-governmental initiatives, as well as relevant legal and regulatory documents. Second, empirical data and case studies were collected and examined to assess the practical implications of regulatory frameworks on social behavior and vulnerability mitigation. These data sources included surveys, interviews, and field observations, which provided valuable insights into the dynamics between regulation, social behavior, and disaster resilience. Furthermore, the study also examined the institutional capacities among stakeholders involved in disaster resilience, as well as their roles in implementing measures to protect vulnerable populations. This involved exploring the organizational structures, coordination mechanisms, and collaborative efforts among stakeholders, such as government agencies, non-profit organizations, and community groups.

RESULTS and DISCUSSION

I. The Philippine Disaster Risk Reduction Management Institutional Framework

From the institutionalism perspective, it is important to lead the discussion on how the Philippine institutions reshape and builds their resilience to disasters from natural hazards. There are two important milestones in the history of the Philippine disaster risk reduction management, which the author called: (1) the disaster and response-focused framework and (2) the prevention and mitigation-focused framework. The response-focused framework was adopted under the 1978 law called Presidential Decree 1566 or the Philippine disaster control act. The institutional framework is greatly based on the impacts of a disaster. Thus, rescue and relief operations are the primary strategy of the institution to respond to calamities. The institutional arrangements and hierarchy were concentrated in the Philippine bureaucracy, from National Defense Department to the Local Government Units, on which the operation is highly centralized (P.D. 1566).

This old framework recognized the need to establish programs and measures for prevention and mitigation, preparedness, response and recovery, and rehabilitation, or what we could refer to as the four (4) pillars of disaster resilience. However, in analyzing the law (PD 1566), we could infer that it viewed disasters as inevitable events.

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Hence it failed to identify and mitigate the root cause of the risks before they could be attributed to a disaster. Experts and scientists believe there could be no disaster if people or the community could cope or adapt to the impact of risks or natural hazards. Hence, disasters are attributed based on the capacities of the community and not by the magnitude of risks.

The Philippine government re-strategized its disaster risk management in dealing with various calamities from typhoons, floods, volcanic eruptions, earthquakes, landslides, and fires by establishing the "prevention and mitigation-focused" framework. The Republic Act 10121, or the Philippine Disaster Risk Reduction Management Act of 2010, transforms the country's disaster management towards a proactive and responsive institution in addressing disaster risks. It has the following key features; (1) it recognizes and strengthens the roles and capacities of the local communities; (2) it Encourages and ensures greater participation of Civil society, private sectors, and the community; and (3) it addresses the root causes of disasters through enhance risk assessment of the most vulnerable communities from the natural hazards up to their capacities or their preparedness on socioeconomic, psycho-social, and physical capacities. We could summarize these into one figure found below or the paradigm shift of the Philippine Disaster Risk Reduction Management (DRRM);

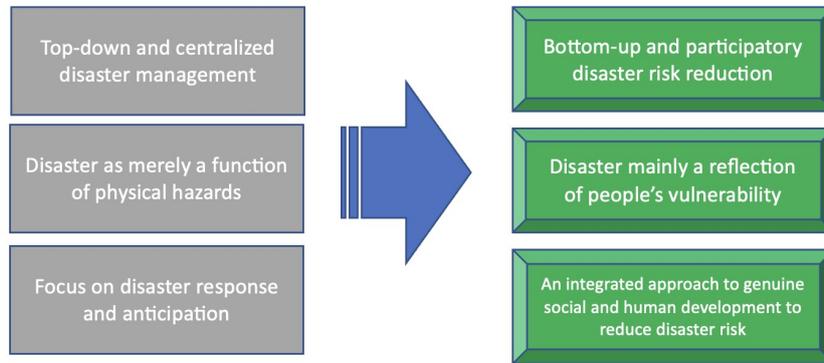


Figure 1. Disaster Risk Reduction Network Philippines. (2010). Primer on the Disaster Risk Reduction and Management (DRRM) Act of 2010. DRRNetPhils.

<http://www.downloads.caraga.dilg.gov.ph/Disaster%20Preparedness/DRRM%20Act%20Primer.pdf>

The new law, promulgated in 2010, is consistent with the social development concept in providing measures for improving the capacities of people and their communities against disaster risks or natural hazards. It is now focused on prevention and mitigation and creating a platform for the community to bolster their coping and adaptive capacities. The current framework adopted by the government shown below (Figure 3) is also coherent with the United Nations Sustainable Development Goals 2030 (SDGs);

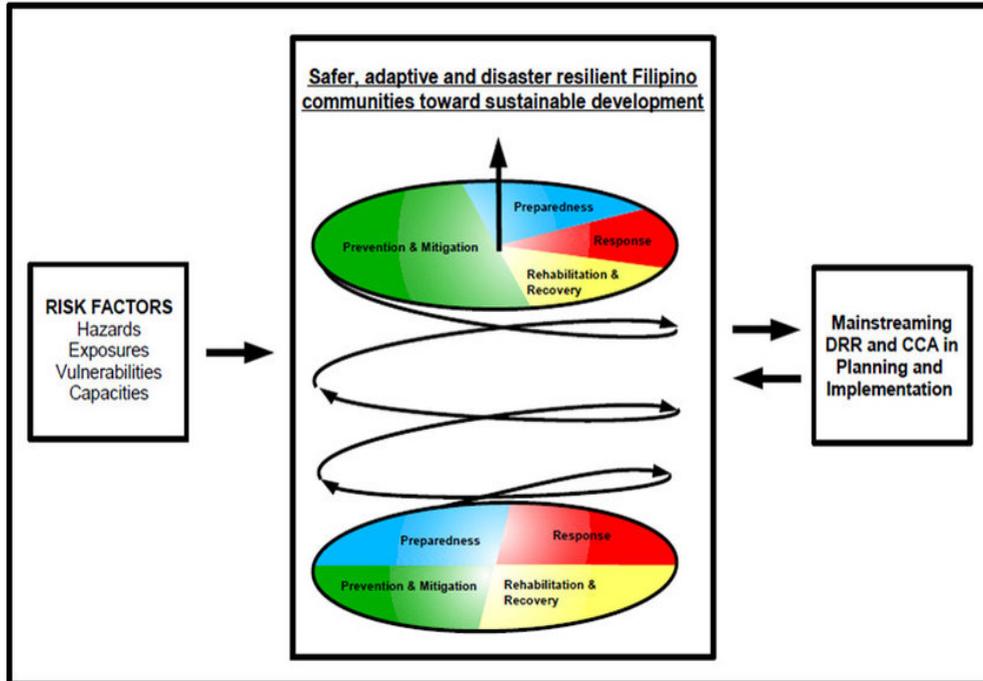
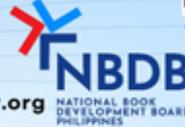


Figure 2. National Disaster Risk Reduction Management Framework of the Philippines (DILG-NDRRMP, 2011)

Figure 2 shown above is the upward spiral framework from the old, where the four pillars of disaster resilience were equally regarded, to what is now known as a **proactive framework** where prevention and mitigation are the primary strategies of the government. In the same vein, the bottom-up approach is manifested into the new structure to broaden participation and strengthen the disaster management councils at all levels.

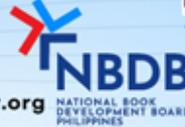
II. Major regulatory challenges and policy gaps of the DRRM

The disaster risk reduction management of the country conformed to and adhered to the international standards and principles in disaster resilience of the Sendai Framework and Sustainable Development Goals. The Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals (SDGs) are two key global frameworks relevant to achieving a disaster-resilient society. The Sendai Framework, adopted in 2015, emphasizes the importance of reducing disaster risk and enhancing resilience through a comprehensive approach. It focuses on four priority areas, to wit; (1) understanding disaster risk; (2) strengthening disaster risk governance; investing in disaster risk reduction (DRR) for resilience; and (4) enhancing disaster preparedness for effective response and recovery. In the Philippine context, this framework provides a roadmap for aligning national policies and strategies with international standards to reduce vulnerabilities and build resilience at various levels; national, local government, and the community or barangays. The SDGs are a collection of 17 interrelated goals established by the United Nations in 2015. The objective is to accomplish these goals by 2030. These goals encompass a wide range of development priorities, including poverty eradication, access to clean water and sanitation, affordable and clean energy, sustainable cities and communities, climate action, and partnerships for the goals. In the Philippine context, the SDGs provide a holistic framework for integrating disaster risk reduction and resilience-building efforts into broader sustainable development initiatives. By incorporating DRR into the SDGs, the Philippines can address the root causes of vulnerabilities and enhance the country's capacity to withstand and recover from disasters.

The Sendai Framework and the SDGs play crucial roles in shaping a disaster-resilient society in the Philippine context. The Sendai Framework focuses on disaster risk reduction and resilience-building, while the SDGs offer a comprehensive framework for sustainable development. Yet, still far from achieving its goals caused of the



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increasing challenges in climate mitigation and the level of capacities of the institution. Significant lapses in policy implementation were empirically observed in the past years of the DRRM of the country.

The following are what came out from the (a) **empirical** studies (Jovita et al., 2018; International Federation of Red Cross and Red Crescent Societies and the United Nations Development Programme, 2014; United Nations Office for Disaster Risk Reduction, 2019), including the (b) **Sunset review and evaluation** of the current DRM law, as mandated by the RA 10121, from the stakeholders' consultation of the House of Representatives, Republic of the Philippines;

- (1) inefficiency of coordination,
- (2) lack of disaster risks management authority,
- (3) Regulation on Regional Development Plan (Land use policies); and
- (4) Issues on local disaster risk reduction research and Data Management system.

Clear coordination issues were revealed throughout the years of DRRM implementation; for instance, two independent studies revealed that regular meetings of councils were not properly conducted by the various agencies concerned. Information or data were not smoothly shared among concerned agencies (Bollettino et al., 2018; Jovita et al., 2018). In another report by the United Nations Office for Disaster Risk Reduction (UNDRR) in 2019, one of the issues they identified was the lack of authority of the national council over critical regulatory policy implementation and funding. One of the critical observations they made when the super typhoon Yolanda (international name Haiyan) devastated the country in 2013, the government established a separate and independent body through a new and separate task force from the current council – National Disaster Risk Reduction Management Council (NDRRMC) to implement the rehabilitation and recovery – Presidential Assistant for Rehabilitation and Recovery (PARR). The country's disaster management appears to lack a clear authority responsible for all phases of the DRRM, from preparedness to recovery.

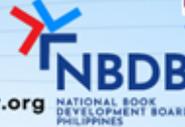
Further, in one study conducted by the Global Facility for Disaster Reduction and Recovery in 2017, the rapid regional development growth contradicts land use policies and has focused primarily on socioeconomic sectors, sometimes ignoring Disaster Risk Reduction considerations. For instance, the "no build zone" regulatory policy in high-risk areas is yet to be fully applied. The robust enforcement of land administrations and sustainable options for incorporating the affected communities' social, economic, and cultural considerations must be urgently addressed. In many regions, informal urban settlements, the use of substandard materials, and poor construction practices are still prevalent, increasing pollution and exposure of slum dwellers (GFDRR, 2017).

Also, the UNDRR report found that Disaster Risk Reduction (DRR) Research receive insufficient focus and resources from the government. Consequently, numerous Comprehensive Land Use programs and community development plans (CDPs) must be updated and responsive to DRR issues. As data and analyses become more widely available, society will be better off protecting itself from disasters and climate change's effects on various sectors. Thus, the UNDRR (2019) recommended improved cross-agency cooperation for existing databases handled by several government agencies to create a "finer scale" of risk information. These challenges were also raised and revealed from the consultations and review of DRRM in the country by the House of Representatives as mandated by R.A. 10121. Hence, House Bill Number (HB) 5989, intended to establish a separate department for Disaster risk reduction management, which will be referred to as the **Department of Disaster Resilience** (DRR), was recommended in 2018. It was now transmitted to the upper house of the Philippine Congress – the Senate for further evaluation and debate.

According to the explanatory note (HB no. 30) in amending the DRRM law of the country, the DRR bill is a product of thorough consultations, dialogues, and learnings from the past disasters that the country experienced. Moreover, it tackled that the disaster risk reduction management of the country "needs stronger, self-governing department from coordination, monitoring, oversight, and the holistic implementation of its regulatory policies that equipped with necessary competency and resources" (HB no. 20). It is particularly aimed for the Philippines to have an institution for disaster management with an adequate high-level of authority to effectively orchestrate various key players in delivering its policies and programs.



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CONCLUSION AND RECOMMENDATIONS

Building resilience is the core function and objective of disaster risk reduction management. Using a historical **institutionalist** perspective, we could infer from the cases presented that resilience must be embedded in the institutions, people, and community being managed. It is, therefore, right to attribute resilience in the public administration structure, as an institution, and its societal function to deliver policy outputs and quality public services through effective and efficient regulation.

We could associate the institution's resilience to the efficiency of its (1) internal command structure; (2) flows of data and information; and (3) the capacity to act before and during the crisis. While for the people and community, they can preserve their cultural identity and social capital in the face of adversity. Although the R.A. 10121 is a significant milestone in the institutional change of the country's perception of natural hazards and calamities, including its alignment with international standards like the Sendai Framework and Sustainable Development Goals (SDGs), the lack of its authority and resources to regulate the enormous risks and hazards effectively must be addressed, accordingly.

Institutional change, reform, and development

A strong governing body must be developed with a system that can thoroughly lead all phases of DRRM, from preparedness, mitigation, response, and recovery to withstand future and more frequent disasters. An institutional body that will enhance the Command-and-Control Regulation, making them directly accountable for their actions. However, institutional change must have enough political will from its leaders to effectively achieve resilient policy outputs and results. There must be a higher level of committed support among key decision-makers for a specific policy solution to a particular issue which is willing to and spending time, effort, and political capital to bring positive changes. Civil Society Organizations (CSO) can urge the government to take action by constantly lobbying for it, and they can serve as watchdogs to ensure that the institution and political leaders are held accountable. Transformational leadership must be considered at all levels of its bureaucratic structure to emphasize its objectives and policy outcomes.

Open Data for a more inclusive and resilient community

As shown and recommended by United Nations Disaster Risk Reduction (UNDRR) data, we have to ensure cross-agency collaboration to optimize the use of existing databases being managed by different government agencies to generate a greater scale of information. Empirical evidence shows that having fully accessible data could augment speedy and effective decision-making. To expand the capabilities of national statistics bureaus and give them more independence, data needs to be freely shared and made available across all possible platforms, including both printed and electronic forms of communication (UNDRR, 2019).

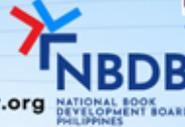
In the globalization era of networked governance, where collaborative efforts for both public and private sectors are critical to development, this study mainstreamed the indispensable role of state institutions to maximize their inherent power to regulate the overall response from risks and vulnerabilities. Effective regulation, as an institutional mechanism, is a great tool that transcends and supplements the institutional functions of public administration, which must be streamlined in every policy and program of the Philippine government.

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The banner features several logos and text elements. On the left is the ETCOR logo with the tagline 'Embracing the Culture of Research'. Next to it is the text 'ETCOR Educational Research Center PHILIPPINES' and 'Sta. Ana, Pampanga, Philippines'. Below this is the 'INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE' logo. In the center is the 'Google' logo and the website address 'https://etcor.org'. To the right is the 'NBDB' logo (National Book Development Board Philippines). Further right are the 'ISSN' logo, the 'The Exigency' logo, and the 'iJOINED' logo. On the far right, it lists 'iJOINED ETCOR' with ISSN numbers: 'P - ISSN 2984-7567' and 'E - ISSN 2945-3577'. Below that, it lists 'The Exigency' with ISSN numbers: 'P - ISSN 2984-7842' and 'E - ISSN 1908-3181'. At the bottom right of the banner is the 'ETCOR REVIEW CENTER' logo with the tagline 'Embracing the Culture of Research'.

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