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LOCAL ENVIRONMENTAL GOVERNANCE:
BASELINE ASSESSMENT OF CLIMATE CHANGE
ADAPTATION AND DISASTER MANAGEMENT
PRACTICES IN A PHILIPPINE PROVINCE

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ABSTRACT

Policy research that examines the influence of incentive structures in fostering local collaborative governance and alliance building is still limited. This study contributes toward understanding the effects of capacity gaps, resource asymmetries, contextual factors, and transaction costs on the decision of local government units in the Philippines to engage in partnership arrangements. It explains the role of enforcement costs, maintenance costs related to cooperation, incentive issues, and the free-rider problem in shaping the policy choices of local governments on economic and environmental sustainability. Being a long-term process, sustainability initiatives require long-term political commitment and economic investment. This is crucial for sustaining Disaster Risk Reduction and Management and Climate Change Adaptation programs over time. Hence, it is important to identify the factors that will sustain interest and motivation among LGUs to collaborate in environmental governance. The findings of the study centered first on the discussion of the opportunities and challenges to inter-LGU cooperation in the area of climate change adaptation and DRRM. Iloilo is among the provinces with the greatest number of inter-LGU alliances and the service areas of the local government consortium spans across economic development, health service delivery, watershed and coastal resource management, metropolitan governance, and flood management. Second, in terms of developing and implementing DRRM plans and climate change adaptation action plans, most of the LGUs covered in the study are updating their CLUPs where they face several capacity challenges. Local planners often need to enhance their technical skills in certain areas of research, problem identification, data analytics, and policy analysis. These two focal areas highlight the role of collaborative governance in strengthening the capacity of LGUs in the domain of DRRM and CCA. LGUs identified the DILG and the Housing and Land Use Regulatory Board as important boundary partners in DRRM capacity building. Inter-local partnerships are strategic collaborative governance arrangements for co-learning and joint-capacity building activities through continuous institutional learning. Hence, this study on environmental governance, i.e., climate change action and disaster management practices at the local level, raises the policy imperative of collaborative governance.

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In the implementation of the Climate Change Act, LGUs are expected to craft and employ local climate change action plans. The plans will outline the programs and strategies of the LGUs in climate change adaptation. City and municipal governments, including the barangays, would be involved in identifying relevant climate change issues and ways to address them. LGUs are also tasked to adopt best practices in climate change adaptation as part of their regular functions. Apart from implementing a province-wide climate change plan, provincial governments are mandated to provide technical assistance to municipalities and cities in the development of action plans. Moreover, the law encourages the utilization of inter-LGU collaboration as a mechanism to effectively implement local plans for climate change adaptation.

The DRRM Act requires the establishment of Local Disaster Risk Reduction and Management Offices (LDRRMOs) in every province, city, and municipality and a Barangay Disaster Risk Reduction and Management Committee (BDRRMC) in every barangay. The LDRRMO is tasked to formulate and implement a comprehensive and integrated Local Disaster Risk Reduction and Management Plan (LDRRMP). The LDRRMP should be integrated into the Comprehensive Development Plan (CDP) and Comprehensive Land Use Plan (CLUP). The LDRRMO is assigned to ensure that disaster risk reduction and climate change adaptation are incorporated into local development plans, programs, and budgets as a strategy for sustainable development.

According to the United Nations International Strategy for Disaster Risk Reduction, most countries in the developing world report little progress in mainstreaming and integrating disaster risk reduction and climate change considerations into local planning. Local governments and communities usually face the issues of lack of capacity and resources to refocus development programs. Given the tasks provided by the new laws to address climate change issues, LGUs need to build their capacity to craft and implement CCA and DRRM plans. They also need technical knowledge and skills in harmonizing CCA and DRRM into local development planning.

With the amount of community-based knowledge and practices on sustainability that have been documented, it is significant to explore approaches and means to link local knowledge with policies. Effective climate change adaptation can be based on existing local knowledge and built upon local participatory analysis of vulnerabilities and capacities. The challenge for policymakers and researchers is to develop mechanisms to bring scientific climate information to the service of communities and to make it accessible, hence informing the crafting of sustainable local CCA and DRRM programs. Local knowledge development must be built on local capacities. Adaptation needs to be built upon local capacities and appropriate technologies.

The Climate Change Act states that inter-local government collaboration shall be maximized in the implementation of climate change adaptation. For instance, to address disaster risk drivers such as ecosystem decline and an increase in informal settlers, local governments can consider coordination and partnership with other local governments and civil society organizations. They can pool resources and coordinate policy actions thus creating economies of scale and making sustainable policy development and implementation more efficient.

Collaborative Arrangements as Risk Management Strategies

This study engaged scholarly literature that looks at the linkages between climate change and natural disasters and how risk management strategies should be pursued through local governance platforms, especially in the context of developing countries. For example, Wamsler and Lawson (2012) indicate that

climate change and disasters pose a serious risk to sustainable development. In developing countries, local coping strategies are an important element of adaptation to climate and disaster risk.

The Hyogo Framework of Action (HFA) 2005-2015 recognizes the important role of local governance in dealing with disaster risk reduction and in building resilient communities. Good urban governance which includes sound local planning, implementation of land use policy, protection and management of ecosystems, local capacity building, inter-local cooperation, and empowerment of rural and vulnerable livelihoods and communities reduces the underlying risk drivers and thus contributes to making safer cities and communities. Local governments are considered central in playing the role of coordinating and sustaining multi-level and multi-stakeholder efforts to promote disaster risk reduction (ISDR 2010: IX). This focuses on strengthening the ability of local governments to facilitate and forge collaborative efforts in developing and implementing programs with national government agencies, the private sector, civil society organizations, and other LGUs.

Given the challenges toward capacity development and resource mobilization needed to address local issues including disaster risk reduction, some LGUs have resorted to voluntary inter-local collaboration. LGUs enter in collaborative partnerships that allow for sharing and coordinating the benefits and costs of delivery of public goods and services as well as inter-jurisdictional activities, projects, programs, and plans.

Inter-local collaboration and agreements are voluntary arrangements to share service delivery responsibilities among local governments (Kwon & Feiock 2010). Inter-local cooperation can also be characterized by a group of LGUs that are geographically adjacent and contiguous to each other coming together on a short-term or long-term basis to jointly provide services and implement projects. Cooperation may also be referred to as local alliances, horizontal partnerships, local consortia, or inter-city clusters. Inter-local cooperation has the following elements: common purpose; coordinating structure; commonly agreed upon systems; and pooled services (GTZ, CIDA & EU 2010). Mechanisms for voluntary collaboration can be in various forms, including adaptive partnerships, inter-local contracts, regional councils, and metropolitan partnerships. In the Philippines, the following are the areas and sectors in which inter-local alliances are documented: coastal resource management, health

development, economic development, river management and ecotourism, natural resource management, local development, environmental protection, and lakeside management.

There has been a substantial increase in the recognition that decentralized systems and self-organizing initiatives are effective in improving local public policy outcomes (Arganoff & McGuire 2003; Bingham & O’Leary 2008). In a decentralized system, local governments are tasked to directly address the local issues and problems faced and the demands of their constituencies. The rationale for decentralization is for governments to enhance efficiency by matching community preferences for high-quality public services and resource allocation measures (Feiock 2010).

However, LGUs are often confronted with collective action policy problems with spillover effects and have positive or negative externalities to their jurisdiction and other LGUs (Ostrom 1990). Policy problems such as stormwater flooding, air pollution, watershed management, vehicle traffic management, and forest protection, are often difficult to address considering the limited resources of LGUs and their bounded authority and jurisdiction. Fragmented governments due to decentralization are constrained by their size if there are not enough citizen-consumers in the jurisdiction or if there are not enough public service supplies that the LGUs can deliver to address collective action problems (Bish 2000). Decentralized and fragmented initiatives call for collaboration because individual LGUs do not control all the resources and know-how necessary to address collective action problems (Shrestha 2012).

Disaster risks often lead to collective action problems that are hard to overcome by local governments acting alone. Flooding, landslides, air pollution, watershed degradation, and forest fires are some of the collective action problems resulting from a lack of coordinated land use plans, an absence of ecosystem programs, a lack of regional coordination, and poor urban governance.

The study of local government capacity and inter-local government cooperation is interesting because it reveals how institutional collaboration, pooling of resources, and coordinated policy responses can address collective action problems and common pool resource dilemmas. The ability of local governments to deliver public goods is subjected to policy problems that transcend the jurisdictional boundaries of governments. Local problems often transcend local borders, posing a demand for LGUs to cooperate in the planning,

implementation, and monitoring of public policies.

Aside from considering inter-local strategies, this study examined the capacity gaps that need to be addressed if LGUs are to be effective agents in climate change adaptation and disaster management. Kusumasari and Alam (2012) emphasized the importance of capacity development for local governments, especially in developing country contexts, in managing disaster risks, including the implementation of disaster adaptation, mitigation, preparedness, response, and recovery measures.

Collaborative mechanisms and institutions provide a way for governments to work together and solve policy issues that affect them. Inter-local government cooperation builds the capacity of local governments to embrace opportunities and respond to threats in an increasingly complex environment characterized by sustained fiscal pressures. Cooperative institutional arrangements between local governments can increase trust, improve communication, and enhance available information. Partnerships can promote negotiation and inter-organizational learning among local governments that mitigate information and enforcement problems.

Using an institutional collective action framework that observes that collective action occurs when individual local governments find it in their self-interest to join a group and engage in collective action, this study will identify the incentives and benefits that affect the interest of local governments in joining alliances (Feiock 2010). Collaborative mechanisms emerge when individual local governments see that potential benefits are higher than potential transaction and contracting costs. This addresses the puzzle of why some local governments engage in cooperative agreements while others do not.

It is critical to understand how weak coordination affects how DRRM functions in local areas. The fragmentation of disaster risk management and climate change adaptation mechanisms, due to sector-based, geographic, and administrative issues can be seen to have also contributed to the ineffectiveness and inefficiency of existing technical and institutional capacities. However, documented best practices indicate the utilization of inter-LGU alliances as a mechanism to effectively address collective environmental problems such as watershed protection and coastal resource management. A more comprehensive analysis of the potential of inter-local collaboration will help LGUs in the search for sustainable policy options.

Identifying LGU Capacities for DRRM and Climate Change Adaptation

While developing the capacity of LGUs is imperative to effectively implement the Climate Change Act and the DRRM Act, it is still a puzzle as to what types of organizational capacities and technical resources are needed by LGUs. For instance, the DRRM law requires cities and municipalities to have local hazard mapping and vulnerability assessment systems. It is a fair question to ask whether LGUs are ready to fulfill this mandate.

There is also a need to identify the incentives and constraints local governments face in developing DRRM and climate change adaptation policies. Linking DRRM and sustainable development tools into local policy requires additional work, resources, and attention. There is a need to understand what motivates local governments to engage in local capacity building, technology transfer, and sustainable development.

Various studies have identified the lack of organizational capacity, support systems, and resources as critical barriers for LGUs in accomplishing their mission. However, many of these works also fail to specify the exact skills and resources needed by LGUs to fulfill their mandates. In the same vein, there is a need to evaluate the capacity of local governments in the context of developing training programs that will improve their skills in crafting particular plans that apply to climate change adaptation and DRRM.

Given the need for capacity assessment on local DRRM, this study was conducted to accomplish the following: (1) to produce knowledge for capacity development of LGUs in climate change adaptation and DRRM; (2) to identify the opportunities and challenges for inter-local government cooperation in climate change adaptation and DRRM programs and projects; (3) to assess the incentives and constraints that LGUs face in developing DRRM plans and CCA action plans; (4) to investigate the local planning tools utilized by LGUs in linking DRRM and sustainable development tools into local policies and; and (5) to explore the role of inter-local cooperation and collaborative governance in strengthening the capacity of LGUs on DRRM and climate change adaptation.

This study utilized the baseline data set from the Local Government Capacity and Cooperation in Climate Change Adaptation and Disaster Risk Management Project coordinated by Francisco Magno, with the support of the Commission on Higher Education, in 2013. Using a semi-structured instrument, the project

surveyed the LDRRMOs and Municipal Planning and Development Offices (MPDOs) / City Planning and Development Offices (CPDOs) of forty-two (42) municipalities and one (1) component city in the province of Iloilo. The research locale was purposively selected given the scope and extent of inter-LGU collaboration in the province. The comprehensive data collected in all the component LGUs of the province of Iloilo can provide a model for conducting a baseline assessment of local DRRM and CCA practices in other Philippine provinces.

The study conducted key informant interviews (KIIs) with Local Chief Executives (LCEs), regional heads of national government agencies, representatives from civil society organizations (CSOs), and local higher education institutions (HEI) officials. The study interviewed the Mayors of Alimodian, Oton, San Dionisio, Zarraga, and Mina. The Executive Director of the Metro Iloilo-Guimaras Economic Development Council (MIGEDC) and the Regional Director of the DILG VI also served as key informants. Focus group discussions (FGDs) were organized in the municipalities of Alimodian and Mina. The LGU officials and CSO representatives in these towns took part in the FGDs. The research also collected and reviewed documents such as local development plans, DRRM plans, climate change action plans, and local government programs. The research team also visited the local DRRM offices of the LGUs.

A. Opportunities and challenges in inter-LGU cooperation in climate change adaptation and DRRM

There is a multitude of inter-LGU alliances in the province of Iloilo. It is among the provinces with the greatest number of inter-LGU alliances (GTZ 2010). The service areas of the local government consortium in Iloilo range from economic development, health service delivery, and watershed management to coastal resource management, metropolitan governance, and flood management. The LGU members in the observed alliances are usually geographically adjacent to each other. This can be explained by the numerous river systems and watersheds that traverse the boundaries of adjacent LGUs.¹

Inter-local economic partnerships in the province are established voluntarily by LGU members to strategically rationalize and harmonize local economic policies and agricultural programs to benefit member LGUs. The relevant policies include

Table 1a . Iloilo Province Inter-Local Collaboration

Inter-local Collaboration	Area/Sector	Member Local Government Units
Metro Iloilo Guimaras Economic Development Council	Economic development, environmental management, tourism, industry development, health service provision, and airshed management	Iloilo City, Oton, Sta. Barbara, San Miguel, Pavia, Leganes, Cabatuan, and Province of Guimaras
Southern Iloilo Health Zone	Health service delivery	Oton, Tigbauan, Miag-ao, San Joaquin, Guimbal
Jaluar Watershed Management	River watershed management	Lambunao, Duenas, Barotac Nuevo
Western Iloilo Local Health Zone Alliance	Health service delivery	Lambunao, New Lucena, Badiangan
Integrated Central Iloilo Alliance for Economic Development	Economic development, agricultural development, sustainable farming, agricultural capacity building	Mina, Janiuay, Lambunao, Badiangan, Lambunao, Cabatuan, Potatan, Maasin, Calinog, Bingawan
Southern Iloilo Coastal Resource Management	Coastal resource management	San Joaquin, Oton, Tigbauan, Guimbal, Miag-ao
Alliance of Northern Iloilo for Health and Development	Health service delivery	Batad, Ajuy, Sara, Carles, San Dionisio, Balasan, Concepcion
Northern Iloilo Alliance for Coastal Development	Coastal resource management, economic development, environmental protection	Batad, Ajuy, San Dionisio, Sara, Lemery, Balasan, Carles, Concepcion
2nd Integrated Area Development	Economic development, local planning, agricultural development	Sta. Barbara, Alimodian, Zarraga, Leon, Pavia, San Miguel, Leganes
Tigum Aganan Watershed Management Board	River-watershed management	Maasin Alimodian, Sta. Barbara, San Rafael, Leon, Pavia
Dumangas-Anilao DRRM Partnership	Disaster risk reduction and management	Dumangas and Anilao
Banate-Barotac Bay Resources Management Council	Coastal resource management, economic development	Anilao, Barotac Nuevo, Barotac Viejo, Banate
Tangyan-Jaro-Guimbal Watershed Board	River-watershed management, environmental protection	Guimbal, Igbaras, and Tubungan
Lamunan-Asisig Watershed Board	River-watershed management, environmental protection	Bingawan, Passi City, San Rafael, San Enrique
Banate-Barotac Local Health Services	Health service provision	Barotac Viejo and Banate
Magapa-Suage River Basin Management Council	River-watershed management, environmental protection, agricultural development	Potatan, Janiuay, Badiangan, New Lucena, Mina
Abangay-Ullam-Manafil Watershed Council	River-watershed management	Potatan, Dingle, Lambunao, Duenas, Badiangan
Metro Iloilo Health Alliance	Health service provision	Pavia, Iloilo City, Oton, Leganes, San Miguel, Sta. Barbara, Cabatuan
Metro Iloilo Airshed Board	Environmental protection	Pavia, Iloilo City, Oton, Leganes, San Miguel
Panay River Basin Board	River and watershed management, environmental protection	Lemery, Bingawan, Barotac Nuevo, and Capiz municipalities
Central Iloilo Local Health Alliance	Health service delivery	Barotac Nuevo, Anilao, Dumangas, Duenas, Zarraga, Potatan, Mina, Dingle, Anilao

Source: Authors' data management

common preferences in local trading, information sharing, expertise exchange, and product matching.² Economic development partnerships also engage in strategic spatial planning. The spatial planning system allows LGU members to identify their roles in the alliance. For example, the Metro Iloilo Guimaras Economic Development Council (MIGEDC) adopts a multi-pronged spatial development approach that designates development zones and roles to member municipalities.³ In this regard, Guimaras Province assumes the role of agri-eco-tourism center, Pavia as the agro-industrial center, Leganes as the center for light industries, San Miguel as the agricultural basket, Oton as the dormitory hub, and Sta. Barbara as the international air travel gateway. Iloilo City will remain the residential, financial, commercial, governance, and educational hub (Manalo, 2009).

In the case of health alliances, LGUs can share common health facilities, provide common health programs, share local expertise, and pool resources. Health alliances in the province grew because of the promotion of the Department of Health of the integrated area development program as applied in the delivery of public health services in the 1990s.⁴

Table 1b . Ecosystems in Iloilo

Ecosystem	Percent of Municipalities	Frequency
Forest	61.90	26
Rice/ crop fields	78.57	33
Mountain/ upland	61.90	26
Marine (Coastal)	42.86	18
Freshwater (River)	71.43	30

Source: Authors' data management

While most inter-LGU alliances in the province address the issues of local health access and economic development, there are also local government partnerships that relate to climate change adaptation and disaster risk reduction. For instance, the Metro Iloilo-Guimaras (MIGEDC) has established air shed boards consisting of members of the MIGEDC. The inter-LGU alliance in Central Iloilo is looking to venture into sustainable farming.⁵ Various coastal resource management councils were also established. The Southern Iloilo Coastal Resource Management Council has ventured into joint LGU coastal monitoring

(Bantay Dagat) activities to ensure the sustainability of environmental resources for the member municipalities. The local consortium on watershed management also implements various flood management programs and projects. Other municipalities pool resources for emergency management such as fire department resources, ambulances, and other rescue equipment.

With more than 20 rivers and three major river basins (MRBs) surrounding Iloilo, several river and watershed boards have been established.⁶ This study has counted a total of eight (8) formal or informal river and watershed boards with varying levels of organizational capacity. The Tigum-Aganan Watershed Board is viewed as the most organized and institutionalized collaborative mechanism.⁷

Inter-LGU alliances in Iloilo are mostly self-organized and voluntary. Local governments facilitate LGU cooperation through the signing of a MOA. This serves as a contract that guides the member LGUs on the scope and limitations of the partnership. MOAs are usually binding for one year. An LGU may opt not to be part of the partnership in the succeeding year. Signing MOAs every year is seen as a contractual mechanism that allows greater flexibility for LGUs to modify or change the status of their membership. The MOA also articulates the responsibilities and rights of members of the consortium in each period. In some cases, the MOA is

Table 1c . Major River and Watershed Basins in Iloilo

River/ Watershed System	LGUs	Size in Hectares
Aganan River Watershed	Alimodian and Maasin	11,300
Barotac Viejo River Watershed	Barotac Viejo, Lemery, Ajuy	9,150
Jaluar River Watershed	Dingle, Pototan, Janiuay, Passi, Duenas, Calinog, Lambunao, Anilao, Banate, Barotac Viejo	107,700
Sibalom River Watershed	Leon, Alimodian, Tigbauan	11,400
Jaluar Suage River Watershed	Janiuay, Maasin, Cabatuan, New Lucena	17,480
Tigum River Watershed	Cabatuan, Maasin, Janiuay	11,4000

Source: Authors' data management

signed to cover the three-year term of office of the LCE. This is done to accommodate the local electoral cycle and to ensure the continuity of the programs of the alliance.

Informal policy arrangements are also utilized as tools of cooperation. Informal policy arrangements usually stem from the personal and professional network of the LCE with leaders of other LGUs. The existence and sustainability of informal policy arrangements are dependent on the level of trust and communication between leaders of LGUs. Informal arrangements are usually brought about by previous engagements between the parties through personal, political, and economic ties. The Leagues of Municipalities and Vice Mayors' League are also seen as important channels of communication. Regional agencies such as the DILG and the higher-level LGU (provincial government) are expected to organize programs and activities that allow for improved communications among local governments in Iloilo.

Table 2 . Area of Inter-LGU Partnerships in Iloilo

Areas of Partnerships (Multiple Responses)	Frequency
Economic Partnerships	23
Solid Waste Management	11
Disaster Rescue and Emergency Response	12
Forest Management	10
Health Service Provision	27
Housing	5
Flood Control	11
Fire and Police	10
Coastal Resource	17
Dispute/Conflict Resolution	2
Land use	7
River and Watershed Management	18

Source: Magno and Hecita. 2013

LGUs deem that membership in cooperative arrangements should be voluntary. The prerogative to continue membership lies in the decision of the respective LGUs. In this regard, local governments usually seek support from their respective

Table 3 . How do LGUs Forge their Partnerships?

Facilitating Partnerships (Multiple Responses)	Frequency
Informal Policy Partnerships	14
Memorandum of Understanding	11
Memorandum of Agreement	39
Local Ordinance or Statue	13
National Law/Executive Order	7
Service Contracts	4

Source: Magno and Hecita. 2013

local councils to join an alliance. Membership in an inter-LGU consortium is authorized by local legislators through the passage of a local ordinance. While the MOA serves as the operational contract for collaboration, the local ordinance serves as the organic document that serves as the basis for LGU participation in an alliance. The contents of the MOA are negotiated depending on the nature and scope of the consortium.

Annual membership fees are levied against member LGUs to sustain local cooperative arrangements. For instance, LGUs are asked to pay between PHP100,000.00 to PHP300,000.00 annually as membership fees in inter-LGU alliances. Fees are used to finance programs, operating expenses, personnel costs, and other expenditures.⁸ Other alliances, such as the Northern Iloilo Alliance for Coastal Development, do not require LGUs to pay a fixed amount but calibrate the fees to be collected based on the income classification of the LGU.

Non-financial cost sharing is also utilized as part of maintenance costs. For instance, the steering committee of alliances is rotated to member LGUs every year. Thus, the assigned LGU for the year shall have the burden of managing the operations of the alliance.⁹ Alliances that do not collect fees rely on the sharing of non-financial counterpart resources, such as personnel, meals, office space, and meeting facilities.¹⁰

Other LGU alliances tap or appoint a separate management committee such as an executive director or a program manager to oversee the day-to-day activities of the alliance.¹¹ However, in most cases, LCEs appoint a particular employee from

Table 4 . How do LGUs Maintain Partnerships?

Facilitating Partnerships (Multiple Responses)	Frequency
Cost Sharing	35
Alignment of Plans	28
Membership Dues	28
Commitment of Non-Financial Resources	26

Source: Magno and Hecita. 2013

the LGU to administer an LGU federation. The alliance manager or staff from a particular LGU usually receives a small allowance to compensate for the extra work rendered to the alliance.

Cooperation incentives are seen as strategic incentives. LGUs enter a particular collaborative arrangement with the view of improving relationships with other LGUs. Acquiring knowledge about and communicating with other LGUs creates an opportunity for members to facilitate networking, identify potential resource generation sources, exchange know-how in governance, and learn from other LGUs.

The willingness to establish an inter-LGU alliance usually comes from the commitment of LGU officials. The “personal mission drive” of an LCE serves as a primary ingredient in initiating inter-LGU cooperation. The opportunity to become a model LGU and the desire to improve governance outcomes are viewed as strategic incentives in attracting additional resources and learning new tools to develop innovative programs.

Political obstacles such as electoral cycles and the lack of support of local councils are seen as obstacles in initiating and sustaining inter-LGU arrangements. Given that the sustainability of cooperative arrangements is contingent on LGU leadership, the risk of discontinuing membership in an alliance is always present.

For example, newly elected mayors are wary about the agreements into which the former LCE entered. Inter-LGU alliances usually provide seminars for newly elected LCEs about the need to continue their membership in inter-LGU alliances.¹²

Changes in local leadership, party configuration, and political dynamics due to the three-year electoral cycle are seen as risks in entering long-term cooperative

Table 5 . What are the Motivations and Incentives to Collaborate?

Willingness to Engage in Partnerships (Multiple Responses)	Frequency
Increase LGU revenues	38
Gain electoral votes	12
Become a model LGU	30
Improve governance performance	40
Expand political connections	10
Access external resources	38
Learn and share practices and knowledge from/ with other LGUs	41

Source: Magno and Hecita. 2013

Table 6 . What are the Obstacles that LGUs Face in Collaboration Mechanisms?

Obstacles in Collaboration (Multiple Responses)	Frequency
Cost/lack of funds	7
Conflict with other budget priorities	5
Lack of expertise and skills	5
Lack of info about other LGUs	3
Lack of support from constituents	9
Lack of support from LCE	9
Lack of trust with other LGUs	5
Lack of perceived incentives	4
Political and economic competition	2
Lack of support from local council	9
Not sustainable due to electoral cycles and political changes	10

Source: Magno and Hecita. 2013

agreements. The risk is not limited to changes in the LCE but also to changes in the membership of local councils that are tasked to legally approve LGU membership in a consortium. In most cases, LGUs need an imprimatur from local legislators to have a right to enter in any collaborative governance arrangement.

B. Developing and implementing DRRM plans and climate change adaptation action plans

Most of the LGUs surveyed are updating their CLUPs. LGUs are mandated to update their CLUPs periodically.¹³ In the process of updating the CLUP, LGUs face several capacity challenges. Local planners often need to enhance their technical skills in certain areas of research, problem identification, data analytics, and policy analysis. The municipal planning officers also reiterate the need to update their knowledge and skills in stakeholder mapping and using information and communications technology (ICT) planning tools such as Geographical Information Systems (GIS).

Table 7 . Updated Comprehensive Land Use Plan

LGUS with Updated CLUP	Frequency
With updated CLUP (updated in the last five years)	4
Still in the process of updating the CLUP	39
Total	43

Source: Magno and Hecita. 2013

Table 8 . Capacity Areas in Local Planning that Needs Improvement

Rank of the Capacity Development Areas that Needs Improvement	Mean Score	Frequency
Community problem and identification	5.93	6
Problem identification and analysis	4.67	3
Data gathering	3.93	1
Monitoring and evaluation of previous plans	6.84	8
Auditing of previous plans	7.14	9
Environmental scanning and stakeholder analysis	5.72	4.5
Finance/resource generation	5.72	4.5
Equipment and facilities	6.79	7
Technical skills of personnel	4.26	2
Geographic Information System (GIS)	7.53	10
Partnerships with other LGUs	11.12	13
Partnerships with international donors	10.95	12
Use of ICT	9.53	11

Source: Magno and Hecita. 2013

Interestingly, the survey showed that local planners find input from the local community as the most useful source of information in local planning. LGUs deem that a systematic and effective way of collecting information from the community is needed to successfully update the local plans. The ability to get input from the community is also recognized as an important skill in problem analysis and stakeholder mapping. Given that most planners have disciplinary backgrounds in Engineering, the respondents stressed the need to invest in ‘soft tools’ and ‘social science-based’ planning tools to be integrated into ‘hard planning (infrastructure development, urban planning)’.

Table 9 . Sources of Information Local Planners Find Relevant in Crafting Local Plans

Relevant Sources of Information in Crafting the CLUP and CDP (Multiple Responses)	Frequency
Inputs from local community	28
Memos, orders, laws	23
Plans of other local governments	12
Websites of NGAs	13
Websites of international donor agencies	9
News from television and radio	7
Websites of universities in Manila and abroad	5
Books and manuals on urban planning	22
Resources from CSOs	16
Attendance in trainings and seminars	26
Inputs from barangay	22

Source: Magno and Hecita. 2013

With the passage of the two landmark laws, the DRRM Act of 2010 and the Climate Change Act of 2009, LGUs are mandated to integrate DRRM and climate change adaptation considerations in other local planning documents such as the Comprehensive Development Plan (CDP) and the Annual Investment Plan (AIP). LGUs need to craft local action plans and establish DRRM councils and offices. Moreover, a specific portion of the National Tax Allotment (NTA) of the

LGU is required to be allotted to DRRM, particularly in disaster preparedness. In addition to the DRRM and CCA laws, local governments are also required to craft a Solid Waste Management (SWM) Plan by the Ecological Solid Waste Management Act of 2000.

Table 10 . LGUs with DRRM, CCA, and SWM Plans

Plans	Frequency
<i>LGUs with Disaster Reduction and Management Plan</i>	
With DRRM Plan	38
Without DRRM Plan	8
<i>LGUs with with Climate Change Action Plan</i>	
With CCAP Plan	14
Without CCAP Plan	28
<i>LGUs with with Climate Change Action Plan</i>	
With SWM Plan	31
Without SWM Plan	12

Source: Magno and Hecita, 2013

Except for eight (8) LGUs, thirty-five (35) local governments crafted their DRRM plans in 2013. On the other hand, only fourteen (14) have developed their climate change adaptation plans. LDRRMO respondents in the survey claim that CCA and DRRM practices and policies can be ‘overlapping’ given how CCA practices can help reduce disaster risks. There are also more incentives to comply with the DRRM law because of the Seal of Disaster Preparedness program implemented by DILG.¹⁴ Furthermore, local planners are more aware of the DRRM Act than the CCA law because the 2010 law was disseminated well at the level of the LGUs. The Provincial government of Iloilo and the DILG widely promoted and disseminated DRRM in the municipalities.¹⁵ On the other hand, more than 75% of the LGUs have crafted their SWM plans.

Local government planners have trouble integrating DRRM, climate change adaptation, and solid waste management considerations in their local planning design. Only twenty-two LGUs have DRRM integrated into their planning system while only seven (7) have incorporated CCA in their CLUPs. LGUs need to re-tool their planning skills relevant to disaster management. In this regard, local planners are seeking technical capacity development opportunities that shall

Table 11 . Integration of SWM, DRRM, and CCA Plans in the CLUP

Plans	Frequency
<i>Is SWM Plan Integrated in CLUP?</i>	
Yes	22
No	14
<i>Is DRRM Integrated in CLUP?</i>	
Yes	19
No	17
<i>Is CCA Plan Integrated in CLUP?</i>	
Yes	7
No	36

Source: Magno and Hecita. 2013

upgrade their planning tools and techniques. The DILG has guidelines on the harmonization of DRRM and CCA with the comprehensive land use plan and the comprehensive development plan.¹⁶

Table 12 . Presence of LGU Office for DRRM and CCA

Office	Frequency
<i>Presence of Local DRRM Office</i>	
Yes	27
No	16
<i>Presence of CCA Office</i>	
Yes	21
No	19

Source: Magno and Hecita. 2013

27 out of 43 LGUs surveyed have a separate DRRM office separate from the LGU. Appointed by the mayor, a local DRRM officer heads the local DRRM office. Local planning officers (MPDO/ CPDO) are usually tasked to be local DRRM officers. In some cases, the local agriculture office or the local environmental office is assigned the main role in local DRRM. Some LGUs consider their DRRM office as having 'the same' function as the CCA office. The local planners find the following as the important functions of a CCA office: local environmental planning, enforcement of land use laws, implementation of environmental

protection and advocacy programs, and assistance in disaster preparedness, evacuation, and rescue.¹⁷

Table 13 . LGU Policies, Programs, and Practices ‘Related’ to CCA

What policies, programs, and programs did your LGU implement that you think is related to CCA? (Multiple Responses)	Frequency
Recycling	32
Air quality control	19
Water quality management	31
Ecosystems protection	28
Sustainable energy	12
Promotion and use of energy efficient devices	26
Environmental-friendly agriculture	38
Climate change education and advocacy	34
Environmental-friendly infrastructure	19
Banning the use of plastics	13
Disaster prevention and mitigation education	36
Non-biodegradable waste	12

Source: Magno and Hecita. 2013

Table 14 . LGU Policies, Programs, and Practices ‘Related’ to SWM

What policies, programs, and programs did your LGU implement that you think is related to SWM? (Multiple Responses)	Frequency
Waste identification and segregation	37
Waste collection, transfer, and processing	38
Recycling	32
Composting	41
Proper waste facility	34
Privatization of SWM	6
Partnership agreements	4
SWM education and advocacy	38
Banning the use of plastics	9

Source: Magno and Hecita. 2013

LGUs have implemented the following policies, programs, and practices ‘related’ to CCA: disaster prevention, climate change education, recycling, ecosystems protection, and sustainable agriculture. The respondents also consider these programs as contributing to the implementation of the CCA law even though CCA action plans have not been crafted in their LGUs. Some LGUs have been practicing “climate-friendly” policies and programs even before the passage of the CCA law.¹⁸

In compliance with the SWM Act, LGUs in Iloilo have been implementing the following policies and programs relevant to solid waste management: waste identification, effective waste collection and processing, recycling, composting, and the establishment of a proper waste facility. A few LGUs have also adopted the plastic ban policy implemented in major cities in the country.

Table 15 . LGU Policies, Programs, and Practices ‘Related’ to DRRM

DRRM Policies, Programs, and Practices	Frequency
Contingency planning	30
Early warning and evacuation alert system	25
Risk assessment and mapping	20
Stockpiling and equipping	37
Evacuation centers	41
Local weather forecasting	15
Mobilizing volunteers	41
Use of ICTs	39
Relief goods delivery	28
Fund raising for DRRM	14
DRRM Training	35

Source: Magno and Hecita. 2013

The common DRRM-relevant policies, programs, and activities implemented in the LGUs include volunteer mobilization; use of mobile phones during rescue and emergencies; stockpiling of equipment and resources; contingency planning; and continuous provision of training and capacity-building activities for the LGU. Most of the LGUs need to address their capacity gaps in early warning systems development, vulnerability risk assessment, local weather forecasting, and

resource generation for disaster preparedness programs. Local hazard mapping is also considered critical given the common hazards such as flooding (39 out of 43 LGUs) and landslides (26 out of 43).

Table 16 . Common Hazards Experienced by LGUs

Common Hazards in Your LGU	Frequency
Flood	39
Landslides	26
Fire	22
Storm surges	20
Earthquake	13
Drought	27
Pestilence	11

Source: Magno and Hecita. 2013

Table 17 . Obstacles and Capacity Gaps Faced by LGUs in DRRM Planning and Implementation

Obstacles in DRRM Planning and Implementation	Frequency
Lack of technical knowledge and skills	25
Conflict with other LGU priorities	9
Lack of time to develop a plan	16
Lack of informational resources	13
Lack of community awareness and support	13
Lack of support from local chief executive	5
Lack of support from NGAs	20
Lack of support from local businesses, universities, and CSOs	22
Lack of support from international donors	19
Lack of support from local councils	9
Lack of funding to develop plan	12
Lack of support from NGOs and Pos	19
Need for better cooperation and coordination with other local governments	15

Source: Magno and Hecita. 2013

Table 18 . Obstacles and Capacity Gaps Faced by LGUs in CCA

Obstacles in CCA Planning and Implementation	Frequency
Lack of technical knowledge and skills	25
Conflict with other LGU Priorities	5
Lack of time to develop a plan	16
Lack of informational resources	21
Lack of community awareness and support	18
Lack of support from local chief executive	11
Lack of support from NGAs	9
Lack of support from local businesses, universities, and civil society organizations	12
Lack of support from international donors	13
Lack of support from local councils	16
Lack of funding to develop plans	16
Lack of support from NGOs and Pos	13
Need for better cooperation and communication with other LGUs	17

Source: Magno and Hecita, 2013

LGUs in Iloilo identified the following as the most important capacity gaps both in DRRM and CCA planning and program implementation: lack of technical knowledge and skills; lack of informational resources to develop plans; lack of support from national government agencies (NGAs); absence of support from the private sector such as universities, local businesses, and non-government organizations; lack of funds; and the need for better cooperation and communication with other LGUs. The capacity needs that require enhancement are those related to planning, problem identification, data gathering, and the use of various planning tools (e.g., stakeholder mapping, vulnerability assessment, and transect mapping).

In the area of capacity development, local DRRM and CCA officers look for capacity-building opportunities and support from the national government (DILG, DOST, and DOH), provincial government, universities, and local businesses. Local planners also explain the necessity for better communication and collaboration initiatives among LGUs in terms of exchanging and sharing

expertise on DRRM and CCA. The best practice models on DRRM and CCA program planning and implementation can be cascaded by LGUs through peer-sharing modalities.

Table 19 . Sources of Information for Crafting and Implementing Local CAA Plans and Programs

Resources for Crafting CCA Plans and Programs	Frequency
Inputs from local community	35
Memos, orders, laws	28
CC plans of other local gov'ts	23
Websites of NGAs	19
Websites of international donor agencies	11
News from television and radio	20
Websites of universities, colleges, schools	11
Books and manuals on CCA	31
Resources from CSOs	18
Attendance in trainings/seminars	33
Websites of news agencies	15

Source: Magno and Hecita. 2013

Table 20 . Sources of Information for Crafting and Implementing DRRM Plan and Programs

Information Resources in Crafting DRRM Programs and Policies	Frequency
Inputs from local community	41
Memos, orders, laws	38
DRRM plans of other local gov'ts	25
Websites of NGAs	26
Websites of international donor agencies	18
News from television and radio	27
Websites of universities, colleges, and schools	16
Books and manuals	36
Resources from CSOs	23
Attendance in trainings/seminars	41
Websites of news agencies	25

Source: Magno and Hecita. 2013

Consistent with the identified needs of local planners on crafting and updating the CLUP, local DRRM offices cited inputs from the local community as the most important source of information in DRRM and CCA. Local planning tools and techniques, as deemed by the respondents of this study, should be able to effectively capture the input and feedback of the community. This is critical in problem identification and the development of local programs, particularly on DRRM and CCA.

The Internet is considered an important source of information on DRRM and CCA. News websites and national government websites (DOST, PAG ASA, and Project Noah) are being browsed by LGUs to look for weather forecasts, early warning information, policies, and programs on DRRM, as well as evacuation and relief assistance information. Email is still considered the most used online platform in DRRM although LGUs are using social media sites such as Facebook and Twitter in disseminating DRRM-related information.

Mobile phones and two-way radios remain the most utilized ICT in DRRM in Iloilo. Mobile phones are particularly useful in disseminating information on early warning systems, weather forecasts, rescue and evacuation, and volunteer management.

Table 21 . Information from the Internet Found Useful in DRRM

What information do you find useful? (Multiple Responses)	Frequency
Weather forecasts	41
Training modules	24
Early warning information	35
Volunteer information	19
Hazard maps	36
Policies and programs from NGAs	27
Evacuation information	26
Relief assistance information	23
Others (News)	1
Others (Project Noah)	1

Source: Magno and Hecita. 2013

Table 22 . Website or Online Platform Used in DRRM

What website or online platform do you use in DRRM? (Multiple Responses)	Frequency
Email	15
Facebook	13
Twitter	3
LGU Website	11
Chat	3

Source: Magno and Hecita. 2013

Table 23 . Ways Mobile Phones are Used

Why do you use mobile phones in DRRM? (Multiple Responses)	Frequency
Weather forecasts	33
Early warning information	40
Volunteer information	31
Rescue contact details	39
Evacuation information	32
Relief assistance	32
Others (Monitor calamity)	1
Others (Accident report)	1

Source: Magno and Hecita. 2013

Table 24 . Initiatives of Women in Dealing with Calamities

Initiatives of women or women's groups in DRRM? (Multiple Responses)	Frequency
Yes	27
No	16

Source: Magno and Hecita. 2013

Cases of women participating in DRRM are limited to advocacy about disaster preparedness. Church-based women's organizations organize and participate in activities such as training seminars and workshops on relief operations, disaster preparedness, and volunteer management. Women also participate as volunteers in evacuation centers.

C. Role of collaborative governance in strengthening the capacity of LGUs in DRRM and CCA

LGUs in Iloilo rely on national government agencies and the Provincial Government for support in DRRM and climate change adaptation. LGUs recognize the need to upgrade their financial, administrative, and absorptive capacity to fulfill their roles and mandates in DRRM. LGUs identified the DILG and the Housing and Land Use Regulatory Board as important boundary partners in DRRM capacity-building.

Learning from other LGUs is an acknowledgment that good practice models can be replicated. The survey indicates that several LGUs consult LCEs and planners of other LGUs regarding planning and program development. Inter-local partnerships are strategic collaborative governance arrangements for co-learning and joint capacity-building activities through continuous institutional learning.

There are still weak knowledge partnerships between LGUs and Higher Education Institutions (HEIs) in local DRRM and CCA programs. With data collection regarded as the most important capacity area for improvement, there is a need to link knowledge producers and knowledge consumers in DRRM. The survey found the lack of participation of critical stakeholders such as local HEIs in local DRRM planning and program implementation. Universities can be tapped to serve as a knowledge hub in documenting collaborative governance practices.

Conclusion

This study provided a baseline assessment of a Philippine province in understanding local cooperative arrangements, particularly the costs and benefits

of collaborative governance in local DRRM and CCA planning and governance. It also identified various prototypes and models for cooperation. The findings from this study can serve as inputs in designing incentive arrangements for promoting collaborative governance and knowledge partnerships. Capacity-building activities can be developed to guide LGUs in addressing complex local problems such as climate change adaptation and disaster risk management through collaborative governance.

Future studies can address the following research concerns. First, given the dependency of LGUs on national government agencies, what are the prospects of vertical collaboration in local DRRM and CCA governance? Second, how can vertical collaboration impact the incentives and costs of horizontal collaboration (inter-LGU) arrangements? Third, what are the peculiar local characteristics, community contexts, and local demographics that affect the decision to collaborate? Fourth, what is the role of income and the amount of the internal revenue allotment on the design of alliances and sustainability of LGU membership?

¹ With 15 rivers and two major river watersheds, Jaluar which has a length of 123 kilometers (107 hectares), and Tigum Aganan, the province has one of the longest widest river watershed systems in the Philippines

² This is the Municipal Information System (MAIS), a program implemented by the Integrated Central Iloilo Alliance for Economic Development. The information was obtained through interview with the former Mayor of Mina, Iloilo, Lydia Grabato last March 22, 2013.

³ Interview with MIGEDC Executive Director Mr. Joni Penalosa, March 2013

⁴ Interview with Dr. Colmenares Quinon, Assistant Provincial Health Officer, Province of Iloilo, May 2013

⁵ Municipal Agricultural Information System (MAIS) as explained by former Mayor Lydia Grabato, March 2013, Mina, Iloilo

⁶ The DILG and the Department of Environmental and Natural Resources (DENR) have recognized Jaluar River Basin and the Tigum-Aganan Basin as critical major river basins in the Philippines.

⁷ The experience of the Tigum-Aganan Watershed Board was showcased in the 2012 International River Summit held in Iloilo City

⁸ MIGEDC's operations, maintenance, and common projects are funded by contributions from its member LGUs. Iloilo City and Guimaras contribute PHP200,000 each every second quarter of the year, while the five municipalities contribute PHP100,00 each every second quarter of the year. The total annual contribution of MIG LGUs to MIGEDC is PHP900,000. The Inter Alliance of Central Iloilo for Economic Development collects between PHP50,000 to PHP100,000 annually for membership fees.

⁹ Interview with former Mayor Lydia Grabato, Mina, Iloilo, April 2013.

¹⁰ Focus Group Discussion with the officials of Alimodian, Iloilo, April 2013.

¹¹ Such in the case of MIGEDC and the Tigum-Aganan Watershed Board

¹² Interview with MIGEDC Executive Director Mr. Joni Penalosa, March 2013.

¹³ DILG and House and Land Use Regulatory Board Joint Circular 01 Series of 2009.

¹⁴ Focus group discussion with Alimodian LDRRM officials

¹⁵ Interview with the DILG VI Director Evelyn Trompeta and DILG VI Local Government Capacity Development Division Head, Ms. Teodosia Sumagaysay.

¹⁶ Undated and unnumbered document entitled "Guidelines on mainstreaming DRRM/ CCA in local planning" downloaded from the DILG website.

¹⁷ Based on interviews with the DRRM officials in Alimodian, Mina, San Dionisio, and Guimbal

¹⁸ Validated by interviews with local DRRM officers in Iloilo City, Guimbal, and Alimodian.

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