

**Capital assets in community-based disaster risk reduction
and climate change adaptation mainstreaming
in Ticao Island, Philippines**

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Table of Contents

Acknowledgments.....	i
List of Tables.....	v
List of Figures.....	vi
Abbreviations.....	vi
List of Annexes.....	viii
1. INTRODUCTION.....	1
1.1. Study aims, scope and limitations, and significance.....	1
1.2. Research questions and principal premises.....	2
1.3. Study Context.....	3
1.3.1. Philippine planning system.....	4
1.3.2. Study Sites.....	5
1.3.3. Current state of capacity of the LGUs.....	8
1.4. Structure of the dissertation.....	8
2. ACADEMIC CONTEXT – CLIMATE CHANGE AND DISASTER RISK.....	9
2.1. The development issue.....	9
2.1.1. Historical context.....	9
2.1.2. Sustainable development.....	10
2.1.3. Current thinking: DRR and CCA.....	10
2.1.4. Capacity Development.....	12
2.2. Mainstreaming.....	13
2.2.1. Capacity assessment.....	14
2.2.2. Capital assets.....	15
2.3. Philippine Context.....	17
3. METHODOLOGY.....	21
3.1. Background.....	21
3.2. Research Design.....	21
3.2.1. System of Inquiry.....	21

3.2.2.	Data Collection and Field Procedures	22
3.2.3	Data analysis.....	26
3.2.4	Presentation of findings.....	27
3.3	Study site and main actors.....	28
3.4	Ethics and positionality	31
3.5	First Fieldwork Phase	33
3.5.1	Surveys	34
3.5.2	Interviews.....	34
3.5.3	Focus group workshops	35
3.6	Second Fieldwork Phase.....	36
3.6.1	Semi-structured Interviews.....	36
3.7.	Working definition of Capital Assets.....	37
4.	RESULTS AND DISCUSSION.....	40
4.1.	Capital assets can be used as a measure of mainstreaming DRR and CCA... 40	40
4.1.1.	Actors understanding of Disaster Risk Reduction and Climate Change Adaptation	40
4.1.2.	Identifying the forms of capital assets used in planning with mainstreaming	46
4.1.3.	The role of capital assets in mainstreaming DRR and CCA in the planning process	55
4.1.4.	Capital assets and Leadership roles in mainstreaming.....	62
4.2.	Certain Capital assets are critical to mainstreaming DRR and CCA.....	68
4.2.1.	Identifying critical capital assets through triangulation of level of access, capital asset self-assessment, and study site narrative.	68
4.2.2.	A hierarchy of capital assets in mainstreaming DRR and CCA in the planning process	81
4.3.	LGUs lacking critical capital assets produce local development plans that do not properly and effectively integrate DRR and CCA.....	83
4.3.1.	The state of mainstreaming DRR and CCA in local development plans (LDPs)	83
4.3.2.	Effective and proper implementation of mainstreaming?	88

5. CONCLUSION	89
5.1. Research Findings	89
5.2. Practical Recommendations.....	90
ANNEXES.....	93
Bibliography.....	122

List of Tables

Table 1.1 Income class, Urban/Rural status, population and land area, by Study Sites, 2007-2010.....	7
Table 2.1. Key themes that constitute capacity of four capacity assessment frameworks in comparison to capital assets.....	14
Table 2.2. Definition of Capital Assets.....	15
Table 3.1. Structure of the Knowledge Dimension of the Revised Taxonomy	25
Table 3.2. Final Pool of possible actors to be included in the study.....	30
Table 3.3. Number of Participants to the FGWs	35
Table 3.4. Working Definition of Capital Assets used in the study.....	38
Table 4.1. Sample Assets by Capital Assets in Study Sites	46
Table 4.2. Leadership role circumstances and characteristics.....	62
Table 4.3. Average number of roles in the planning process integrating DRR and CCA by actors.....	64
Table 4.4. Capital asset self-assessment, Municipality of Batuan	69
Table 4.5. Level of access to capital asset, Municipality of Batuan.....	69
Table 4.6. Capital asset self-assessment, Barangay Burgos	72
Table 4.7. Level of access to capital asset, Barangay Burgos	72
Table 4.8. Capital asset self-assessment, Municipality of San Jacinto	74
Table 4.9. Level of access to capital asset, Municipality of San Jacinto	75
Table 4.10. Capital asset self-assessment, Barangay Bagahanglad.....	77
Table 4.11. Level of access to capital asset, Barangay Bagahanglad.....	78
Table 4.12. Climate Change in CLUPs by municipality.....	83
Table 4.13. Disaster, Disaster Risk or related terms in CLUPs by municipality.....	84
Table 4.14. Priority Projects in CLUPs by municipality	85

List of Figures

Figure 1-1. Geographical location of the Philippines and selected study sites	6
Figure 2-1. Conceptual Framework.....	20
Figure 4-1. Assets listed by capital asset classification.....	48
Figure 4-2. Number of assets identified by municipality and barangay.....	49
Figure 4-3. Process Flow Diagram for Planning.....	52
Figure 4-4. DRR and CCA Mainstreaming Framework using Capital Assets	66
Figure 4-5. Capital assets ranked by importance and their effect on other capital assets, semi-structured interviews	80
Figure 4-6. Capital assets hierarchy in mainstreaming DRR and CCA in planning.....	82

Abbreviations

ADB	Asian Development Bank
CBMS	Community-based Monitoring System
CCA	Climate Change Adaptation
CDP	Comprehensive Development Plan
CEPA	Communication, Education, Participation, and Awareness
CIA	Central Intelligence Agency
CLUP	Comprehensive Land Use Plan
DBM	Department of Budget Management
DFID	Department for International Development
DILG	Department of Local and Interior Government
DRR	Disaster Risk Reduction
DRRM	Disaster Risk Reduction Management
ECHA	European Commission Humanitarian Aid
FGW	Focus Group Workshop
GCCA	Global Climate Change Alliance Support Facility
GEF	Global Environment Facility
GEF-SGP	The GEF Small Grants Programme
GPS	Global Positioning System
HFA	Hyogo Framework for Action

HLURB	Housing and Land Use Regulatory Board
IEC	Information, Education, and Communication
IPCC	Intergovernmental Panel on Climate Change
IRA	Internal revenue allotment
Kalahi-CIDSS	<i>Kapit Bisig Laban sa Kahirapan</i> (Linking Arms Against Poverty) - Comprehensive and Integrated Delivery of Social Services
LDP	Local development plan
LGSPA	The Local Governance Support Program in ARMM
LGU	local government unit
MAO	Municipal Agricultural Officer
MB	Municipality of Batuan
MBO	Municipal Budget Officer
MDG	Millennium Development Goals
MEO	Municipal Engineering Officer
MPDC	Municipal Planning and Development Coordinator
MSJ	Municipality of San Jacinto
NDCC	National Disaster Coordinating Council
NDRRMC	National Disaster Risk Reduction Management Council
NEDA	National Economic and Development Authority
NGA	National Government Agencies
NGO	Non-government Organisations
NSCB	National Statistical Coordination Board
OCD	Office of Civil Defence
OECD	Organisation for Economic Co-operation and Development
PFECI	Philippine Federation for Environmental Concern Incorporated
PO	People's Organisations
RA10121	Disaster Risk Reduction Management Act of 2010
RA9729	Climate Change Act of 2009
SB	<i>Sangguniang Bayan</i> (Municipal Council) or <i>Sangguniang Barangay</i> (Village Council)
SK	<i>Sangguniang Kabataan</i> (Youth Council)
SRA	Social Research Association
UNCED	United Nations Conference on Environment and Development

UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
UNU-EHS	United Nations University – Institute for Environment and Human Security
WB	World Bank
WMO	World Meteorological Organisation

List of Annexes

Annex A – Full List of Actors.....	93
Annex B – Questionnaire Revised after Pretesting.....	94
Annex C – List of Actors Interviewed – Phase 1.....	100
Annex D – Interview Guide (Phase 1).....	101
Annex E – FGW Topic Guide Revised after Pretesting and Detailed List of Participants.....	102
Annex F – Capital Assets Self-Assessment Exercise.....	106
Annex G – List of Actors Interviewed – Phase 2.....	107
Annex H – Semi-structured Interview Guide (Phase 2).....	108
Annex I – Full List of Capital Assets Identified per Study Site.....	116
Annex J – Detailed description of Batuan planning process flow.....	118
Annex K – Detailed description of leaders’ perspective on social and financial capital assets.....	119

1. INTRODUCTION

1.1. Study aims, scope and limitations, and significance

This study aims to explore the role of Capital Assets in mainstreaming disaster risk reduction (DRR) and climate change adaptation (CCA) in community-level planning in the Philippines.

Among significant constraints in the study was the availability of individuals involved in the production of planning documents. Four study sites in one island were chosen for the study over a period of three weeks. These were the municipalities of San Jacinto and Batuan and the *barangays* (village) Burgos and Bagahanglad, in Ticao Island, Province of Masbate, Philippines. This setup provided the best combination of experience in DRR and CCA and accessibility of the author to relevant individuals.

Gaining practical knowledge on the character and nature of use of capital assets in the integration of DRR and CCA in planning on the island will increase the likelihood that local development plans better respond to global environmental change and disaster risk (NEDA, UNDP, ECHA, 2008). Capital assets used as a framework to measure the capacity of communities in mainstreaming DRR and CCA in planning can potentially contribute in laying the groundwork for a more responsive theoretical approach to practising capacity assessment of DRR

and CCA mainstreaming at the lowest levels of local government planning. This explanatory power afforded by capital assets can assist the individuals involved in mainstreaming DRR and CCA to respond positively to capacity building as they negotiate new forms at looking at their capacities through a capital assets framework.

The output of this study can be used to improve the local planning process of the remaining two municipalities on the island to achieve an island-wide mainstreaming of DRR and CCA, thereby maximising the benefits to the island's economy, society, and environment (NEDA, UNDP, ECHA, 2008). Furthermore, the research may be used in similar investigations in the country since 70 per cent of the 1,500 municipalities in the Philippines are coastal (Leccioner, 2009). It is also hoped that this study can contribute to Philippine efforts at attaining the priority actions of the Hyogo Framework by helping Local Government Units (LGUs) become resilient to the unabated risks of disaster and climate change.

1.2. Research questions and principal premises

To guide the conduct of the study the following research questions were formulated and organised under three principal premises:

Premise 1: Capital Assets can be used as a framework to measure mainstreaming DRR and CCA.

Research question 1.1: What forms do capital assets take in the barangay-level and municipal-level?

Research question 1.2: What were the processes used in mainstreaming disaster risk reduction and climate change adaptation in the barangay community maps and barangay development plans and municipal comprehensive land use plans and comprehensive development plans?

Premise 2: Certain capital assets are critical to mainstreaming disaster risk reduction and climate change adaptation

Research question 2.1: Are capital assets used to overcome barriers in the mainstreaming process?

Research question 2.2: How can capital assets affect the mainstreaming of disaster risk reduction and climate change adaptation at the community level?

Premise 3: LGUs lacking critical capital assets produce local development plans that do not properly and effectively integrate DRR and CCA.

Research question 3.1: Are disaster risk reduction and climate change adaptation concerns and issues present and reflected in local development plans?

1.3. Study Context

The study is placed within the context of the Philippine planning system, the geophysical nature of the study sites, and the current state of capacity of the LGUs being studied. The three study themes are briefly discussed and defined in the following sections.

1.3.1. Philippine planning system

The Local Government Code of 1991 mandates each LGU to prepare a comprehensive multi-sectoral development plan to be initiated by its local development council and approved by its council (DILG, 2008). An LGU is the basic unit of government in the Philippines (see Serote, 2005 p. 17 for more on LGUs). LGUs are beset with the task of producing up to 27 plans; two, the Comprehensive Land Use Plan (CLUP) and Comprehensive Development Plan (CDP), are considered as major planning instruments (Serote, 2005; LGSPA, 2009) that guide the development of LGUs.

As one of the countries most affected by climate change and disaster (Harmeling, 2010; UNU-EHS, 2011), the Philippines has responded by passing RA9729 (Climate Change Act of 2009) and RA10121 (Disaster Risk Reduction Management Act of 2010). They require the LGUs to plan for disaster and climate change and provide the apparatus for this work. The Philippines is also a signatory to the UNFCCC and the Hyogo Framework for Action (NEDA, 2011). Despite having numerous mainstreaming and harmonisation guidelines and memoranda (NEDA, UNDP, ECHA, 2008; DILG, 2008; DILG/HLURB, 2009) as mandated by the legislation, a recent report (OCD-NDRRMC, 2011) states that there are key limitations in the financial resources and operational capacities (p. 5) of LGUs undertaking mainstreaming activities. Moreover, capacity building at the local and national levels was identified as a challenge to harmonising the different plans and initiatives under DRRM and CCA (p. 6).

1.3.2. Study Sites

The Philippines is an archipelago with the world's fourth longest discontinuous coastline of about 36,289 kilometres (CIA, 2011). Seventy per cent of its 1,500 municipalities are coastal (Lecciones, 2009). The World Risk Report ranks the country the third most vulnerable to disasters and climate change (UNU-EHS, 2011). Ticao Island is one of three islands that comprise the province of Masbate, Bicol Region, Philippines. The Philippine fault cuts through Ticao Island and the Island indiscriminately receives the effects of changes in the Pacific during El Nino Southern Oscillation and Pacific Decadal Oscillation (Masbate Sangguniang Panlalawigan, 2000; WB-PFECl, 2010).

The study will focus on the municipalities of San Jacinto and Batuan, and *barangays* Burgos and Bagahanglad on Ticao Island, Masbate Province, Philippines (Figure 1-1).

Geographical Location of the Philippines



Figure 1-1. Geographical location of the Philippines and selected study sites

Notes: Top inset shows in the shaded red area the location of the Philippines in the world, bottom left inset shows in the shaded red area the location of Masbate province in the Philippines, bottom right inset shows in the shaded red area the location of the four study sites in Masbate province; two red shaded areas represent the location of the municipalities and the two blue dots represent the barangays.

Source: adapted from National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC (2012) using Free ARCGIS Online.

Masbate Province is located in Bicol Region, one of the most disaster prone areas in the Philippines (Evasco & Alejandro, 2010). Ticao Island is the smallest of three islands in the province (NSCB, 2012). Among 21 municipalities in the province, San Jacinto is the 5th smallest while Batuan is the smallest in land

area. Both are partially urbanised with Batuan and San Jacinto being a 5th and 4th income class municipality, respectively. *Barangay* Burgos is 1 of 14 *barangays* (villages) of Batuan, while *Barangay* Bagahanglad is 1 of 21 *barangays* in San Jacinto. Both *barangays* are predominantly rural with Burgos having a population of 1,592 while Bagahanglad, 2,795. Bagahanglad and Burgos are both the second most populous *barangays* in their respective municipalities (Table 1.1).

Table 1.1 Income class, Urban/Rural status, population and land area, by Study Sites, 2007-2010

	Income Class ¹	Urban / Rural	Population	Land Area ² (hectares)
<i>Province</i>				
Masbate	1 st		768,939	404,707
<i>Municipality</i>				
Batuan	5 th	Partially Urban	12,585	5,628
San Jacinto	4 th	Partially Urban	26,508	12,240
<i>Barangay</i>				
Burgos		Rural	1,592	302
Bagahanglad		Rural	2,795	1,125

Notes:

¹ for definition see: www.nscb.gov.ph/activestats/psgc/articles/con_income.asp

² figures for *barangays* have been rounded off to the nearest whole number

Source: Adapted from National Statistical Coordination Board, Philippines (2012) and Department of Science and Technology Regional Office (2010)

The province is considered one of the poorest in the country (Virola, 2009) and previous research on the four study sites show the discriminate effect of climate change and disasters on the area (Lecciones, 2009; WB-PFECI, 2010; ADB, UNDP-GEF, 2010).

1.3.3. Current state of capacity of the LGUs

LGUs in Ticao Island state a lack of capacity to mainstream DRR and CCA into their local development plans (Municipality of San Jacinto, 2010). At present, only one of four municipalities has an approved CLUP. A recent study finds that more work is needed to capacitate LGUs to mainstream DRR and CCA into the CLUP (Lecciones, 2009). Moreover, capacity building was a prominent strategy for climate change adaptation identified at the *barangay* level by a recent study of the World Bank (WB-PFECI, 2010).

1.4. **Structure of the dissertation**

This dissertation begins by introducing the research topic, research questions, and study context (Chapter 1). The academic context is then established by examining current knowledge on the study themes (Chapter 2). This is followed by a discussion of the methodology (Chapter 3) and a discussion of the results (Chapter 4). Chapter 5 concludes by giving a summary of findings and recommendations.