



© Don Johnson Lontoc
All rights reserved, 2013



Submitted to the Department of Architecture and Urban Studies
in partial fulfillment of the requirements
of the degree of Master in Urban Planning and Policy Design
School Year 2012/2013

**CIVIC ENGAGEMENT IN URBAN WATER GOVERNANCE: THE CASE OF PASIG
RIVER REHABILITATION IN METROPOLITAN MANILA, THE PHILIPPINES**

Don Johnson Arcadio Lontoc, Student

Matricola ID: 782027

Carolina Pacchi, Professor

Thesis supervisor

Department of Architecture and Urban Studies

December 2013

Preface

First and foremost, to my parents Danilo Montealegre Lontoc and Lilia Arcadio Lontoc, and of course to our ever cutest adopted member of the family brother/doggy Pacquiao, thank you for your endless support and understanding on this remarkable journey of my life. Without their undying support and lessons-learnt-in-life, I would not know how to stand on my own feet in a foreign country. Maraming salamat!

I would like to really thank my thesis supervisor Carolina Pacchi for her guidance through the entire thesis writing process. She truly is brilliant on motivating her students to do their very best. I am very grateful that I did my master thesis with someone I really look up to and very receptive to her students.

This journey has given me not only new knowledge for my future career but also new-found great friends across the globe. The international spirit of our class has become an eye-opener for me to the splendor of life. I am very grateful that Politecnico di Milano has given me this opportunity to pursue my master's degree and been able to enjoy my student life to the fullest in a country where I definitely have appreciated the richness of their culture, cuisines and kind people. I would like to thank all the professors that I have met over the last 2 years. You do really inspire me. All these, I definitely have savored the 'sweet life' in Italy.

To God be the glory



Abstract // English

Ecologically healthy urban waterways are greatly considered in influencing the health and livability of an urban area. The role that urban waterways play in territorial construction of economic, social and to some extent political activities is very vital to a society. But in the setting of most urban areas in the global south which is currently undergoing rapid urbanization, urban waterways are being utilized in a degrading way. This paper examines the context of Pasig River Rehabilitation in Metropolitan Manila, the Philippines, which currently is witnessing an unprecedented rise in urbanization, changing socio-economic level, and mounting urban waterway challenges within the framework of civic engagement and urban water governance. The paper reviews international case studies in Africa and Asia; Nairobi River in Kenya, Ping River Basin in Thailand, and Mekong River in Mainland Southeast Asia.

The main finding of the study is that civic engagement helps reconstruct or re-create a vision for the identify of a waterway through their social responsibilities. In the light of this, civic actors together with political actors create a shared territorial identity for an urban waterway. Their engagement enhances political functioning of a formalized institution by inputting borderless issues into its framework and help molding the way it defines environment-oriented political decisions. Given proper positions and importance, civic actors are the potential catalyst of a sustainable change for they are the immediate appropriators of an open resource. However, the challenge remains on how to take full advantage in practice the potential contribution of civic actors in governing their resources. Possible reconsiderations for the case of Pasig River rehabilitation are to gender empowerment, exploit non-institutional social networks, and community-local level political actors' social commitment, and maintain societal actor's leadership.

Keywords: Urban waterways; civic engagement; water governance

Abstract // Italiano

Dal punto di vista ecologico i fiumi urbani puliti presentano una significativa influenza sulla vivibilità e la pulizia delle aree urbane cittadine. Il loro ruolo per quanto riguarda attività sociali, economiche e politiche è di grande importanza per la società. Va tuttavia precisato che, nella maggior parte dei paesi del terzo mondo i quali si stanno imbattendo in una rapida urbanizzazione, i fiumi urbani soddisfano perlopiù esigenze differenti.

Questo lavoro di tesi si colloca nel contesto del progetto di riabilitazione del fiume Pasig, nell'area metropolitana della città di Manila, nelle Filippine, interessata da una crescita urbana senza precedenti oltre che da un peggioramento delle condizioni economico-sociali e da sempre più frequenti problematiche connesse ai fiumi cittadini. La trattazione si prefigge di approfondire il livello di coinvolgimento della società (ovvero dei cosiddetti attori sociali) nella gestione e nel governo di tali corsi d'acqua a partire da uno studio dettagliato di casi noti quali, nello specifico, il fiume Nairobi in Kenya, il fiume Ping in Thailandia e il fiume Mekong in Asia sud-orientale. Modo in cui le istituzioni operano a riguardo, esponendo i problemi riscontrati e proponendo soluzioni socio-ecologiche, promuovendo quindi decisioni politiche che siano "environmental-oriented". E' dunque evidente come gli attori civici, essendo i primi ad essere a contatto con la realtà dei fiumi cittadini, rappresentino il catalizzatore di un potenziale cambiamento sostenibile ed efficace, nonostante rimanga comunque aperto il problema relativo a come tradurre questo potenziale in pratica.

Sono inoltre esito del lavoro di tesi, in accordo con le linee guida fin'ora definite, alcune proposte di applicazioni pratiche di quanto descritto limitatamente al caso specifico del fiume Pasig, quali ad esempio il mantenimento dell'attore civico a livello istituzionale, una maggior sensibilizzazione di donne e giovani verso le problematiche annesse, includere i gruppi di attori sociali all'interno di un'istituzione formalizzata ed infine promuovere la comunicazione degli attori politici e sociali che operano a livello locale.

[Fiumi urbani; Coinvolgimento della società ; Governance dell'acqua](#)

Contents

Acknowledgements.....	i
Abstract.....	ii
List of maps, tables, diagrams and images.....	iii
Acronyms.....	iv
1.0. Introduction.....	1
1.1. Problem statement	
1.2. Research questions and purpose	
1.3. Research objectives	
1.4. Data gathering and organization	
2.0. The Philippines and its urban structure.....	4
2.1. Overview.....	4
2.1.1. Institutional Framework	
2.1.2. Environmental Framework	
2.2. Context of urbanization in the Philippines.....	8
2.2.1. Urbanization process	
2.2.2. Employment shift	
2.2.3. Large share of informal sector in employment	
2.2.4. Urban growth in regions	
2.3. Urban dominance of Metropolitan Manila.....	15
2.3.1. Urban evolution	
2.3.2. Urban economics	
2.3.3. Metropolitan management	
2.3.4. Urban environment	
2.4. Key emerging issues.....	20
2.4.1. Concentrated pattern of urbanization in Metropolis of Manila	
2.4.2. Social facet of urban poverty	
2.4.3. Weak spatial planning: Lack of sectoral integration	
2.4.4. Impact of human-caused environmental degradation	
3.0. Water territory: Pasig River Rehabilitation, Metropolitan Manila	
3.1. Overview.....	24
3.1.1. Nature of the problem	
3.1.2. Drivers of environmental change	
3.2. State's initiatives.....	30
3.2.1. Institutionalized framework	
3.2.2. Policy framework	

3.2.3.	De-institutionalized framework	
3.2.4.	Policy framework	
3.3.	Shift in roles and positions: towards innovations.....	36
3.3.1.	ADB-PRRC collaboration	
3.4.	Civic engagement to the state’s initiatives.....	39
3.5.	Non-state initiatives.....	40
3.6.	Key urban governance issues.....	42
3.6.1.	Inconsistent political landscape	
3.6.2.	Less committed riverside local government units	
3.6.3.	Undervalued civic engagement	
4.0.	Review of related case studies.....	44
4.1.	Nairobi River, Kenya.....	44
4.1.1.	Basin identification	
4.1.2.	Core of its problem	
4.1.3.	Policy framework	
4.1.4.	Nairobi River rehabilitation programme	
4.1.5.	Implementation process	
4.1.6.	Reception by the government	
4.2.	Ping River, Thailand.....	51
4.2.1.	Basin identification	
4.2.2.	Core of its problem	
4.2.3.	Policy framework	
4.2.4.	Ping River restoration programme and implementation process	
4.3.	Mekong River, Mainland Southeast Asia.....	58
4.3.1.	Basin identification	
4.3.2.	Core of its problem	
4.3.3.	Policy framework	
4.3.4.	Mekong River Basin programme and its implementation process	
4.3.5.	Reception by its civil society	
4.4.	Measures on Civic Engagement.....	67
4.5.	Emerging opportunities.....	71
4.5.1.	Integration of development to environment	
4.5.2.	Horizontal coordination (Principle of devolution)	
4.5.3.	Local empowerment	
5.0.	Discussion, Conclusion and Case-specific Recommendation	75
5.1	Discussion	
5.1.2	Civic Engagement thought	
5.1.2.1.	Above all, why institutional and non-institutional actors need to be coordinated as a ‘collective actor’?	

5.1.2.2. Why pursue civic engagement as a tool in environmental decision making process?

5.1.2.3. Does civic engagement make environmental decision-making process more efficient? Does it promote sustained change? If so, how do we sustain it?

5.2. Conclusion

5.3. Case-specific recommendation

Appendix.....83

Bibliography.....92

List of maps, tables/charts

Maps

1.1	Projected population of megacities in developing world 2015.....	2
2.1	Geographical location of Philippines in Southeast Asia.....	6
2.2	Philippines and its prime urban centers.....	14
2.3	Urban footprint: pattern of growth.....	16
3.1	Pasig River system.....	28
4.1	Nairobi River	44
4.1.1	Kenya in Africa	
4.1.2	Nairobi in Kenya	
4.2	Ping River.....	51
4.2.1	Chiang Mai province	
4.2.2	Chao Phraya river system	
4.3	Mekong River.....	59
4.3.1	Upper and lower Mekong River system	
4.3.2	Riparian countries in Mekong River	

Tables

2.1	Rural and Urban population 1960-2010.....	10
2.2	Interregional migration rates by sex and by region of destination.....	11
2.3	Production sector.....	12
2.4	Percentage share of informal sector in employment.....	13
2.5	Urban Growth in most urbanized Philippine Regions.....	14
2.6	Metropolitan Manila evolution of population.....	15
3.1	Shift of organic pollutions in the river system in the last 20 years.....	32
3.2	Actors involved in PRRC.....	36
4.1	Actors involved in NRRP.....	47
4.2	Phases of NRRP.....	48
4.4	Actors involved in Ping River Basin Programme.....	55
4.5	Actors involved in MRC.....	64
4.6	Measures on civic engagement.....	66

List of diagrams and images

Diagrams/charts

2.1	Philippines Institutional and environmental framework.....	9
2.2.	Employment percentage.....	18
2.2	Metropolitan Manila two tier structure.....	30
3.1	Institutional structure of PRRP.....	31
3.2	PRRC with its network.....	37
3.3	Civic engagement in PRRC programme.....	39
4.1	Implementation process of NRRP.....	49
4.2	MRC structure and network.....	62

Images

2.1	A reality of Metropolitan Manila.....	17
2.2.	Environmental effects of urbanization.....	23
2.3.	A part of territorial identity.....	25
3.1	Ecological state of the small estuaries.....	27
3.2.	Ecological state of the mainstream river.....	28
3.3.	Ecological state of the rehabilitated estuary.....	28
3.4.	State initiatives and non-state initiatives.....	41

Abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
ASEAN	Association of South East Asian Nation
CCPE	Coordinating Committee for the Protection of the Ping River Basin and Environment
CMU	Chiang Mai University
CSO	Civil society Organization
DANIDA	Danish International Development Authority
DENR	Department of Environment and Natural Resources
ECAFE	Economic Commission for Asia and the Far East
EPA	Environmental Protection Area
EMB	Environmental Management Bureau
IWRM	Integrated Water Resources Management
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
LGU	Local Government Unit
MONRE	Ministry of Natural Resources and Environment
MMDA	Metropolitan Manila Development Authority
MRC	Mekong River Commission
MRF	Material Recovery Facility
NEMA	National Environment and Management Authority
NETWAS	Network for Water and Sanitation
NCR	National Capital Region
NSO	National Statistics Office
NWRB	National Water Resource Board
PAREMRS	Pasig River Environmental Management and Rehabilitation Sector Development Program Loan
PRDP	Pasig River Development Plan
PRRC	Pasig River Reahbilitation Commission

Abbreviations

PRRP	Pasig River Rehabilitation Program
RRS	River Rehabilitation Secretariat
U-Belt	University-belt
UN-EHS	United Nations- Environment and Human Security
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
URA	Urban Renewal Area

1.0 Introduction

1.1 Problem statement

Ecologically healthy urban waterways are greatly considered in influencing the health and livability of an urban area. The role that urban waterways play in territorial construction of economic, social and to some extent political activities is very vital to a society. But in the setting of most urban areas in the global south which is currently undergoing rapid urbanization, urban waterways are being utilized in degrading way. Urban waterways are more readily recognized as a channel for private and economic gains.

Urban waterways that have become the economic lifeblood of urban areas have led to incremental changes of their ecological condition. The drive towards economic prosperity of urban areas that brings forth ever-increasing quantity of urban wastes generation and growing industrial activities has escalated the magnitude of urban waterway challenges. Waterway degradation is not a new issue; it has been taking place all over the world for centuries now. The problem is that it is now occurring at a much faster rate due to rapid concentration of urban population in urban areas which then exacerbates the existing urban economic pressures. However, issues of lack of urban basic services provision due to overpopulation leads to the surge of urban population to unsuitable and grey areas. According to UN-Habitat, a substantial share of informal settlements exists along river banks and urban waterways. Hence, water quality, social and economic development pressures, ecological health are the typical issues that urban waterways confront.

As any other environmental problems, water degradation runs through the cross cutting issue of historical, economical, political and most importantly social affairs. In the light of this, heavy costs are at risk to both institutions and its society. Issues concerning urban waterway governance are becoming an overwhelming task that heavily demands more than just political capital. But looking closely to what usually happens, which evidently opposes the demands of the issue, is that waterway problems are being observed under government-mandated actions. Despite of the growing recognition of much wider waterway

governance and their increasingly effort towards collaborative strategy, issues concerning undervalued civil engagement come to the fore. In most urban areas in the global south where typically rivers are poorly observed their institutional differences, constraints, and tensions hinder sustained governance between institutional and non-institutional actors. Concerns on division of governance and lack of larger framework still are roaring from the side of civic actors while there is already growing acceptance of private sector in this urban context. Clearly, rehabilitating a degraded water system is a daunting task due to the deep connections to historical, infrastructure, governance and social complexities of urban areas. Hence, effective actions and measures are required at various scales and from a wide array of disciplines and perspectives.

This paper examines the context of Pasig River Rehabilitation in Metropolitan Manila, the Philippines, which currently is witnessing an unprecedented rise in urbanization, changing socio-economic level, and mounting urban waterway challenges within the framework of civic engagement and water governance.

1.3. Research questions and purpose

This paper looks in depth on the means by civil society (civic actors: riverside communities and social networks), which are often in positions of relatively less power, attempt to engage and similarly with which measures they can come into play. Hence, this thesis examines the following research questions: (1.) in which contexts does civic participation contribute to effective water governance? (2.) And, which measures of civic engagement do foster it?

This paper attempts to further expand the general understanding of civil society and their plausible cooperation with a formal institution in an urban waterway governance context, which is largely understudied in this field. In addition, the paper attempts to provide evidences that civil society (civic actors) can play a crucial role in water governance, or in a larger framework, environmental governance, and how can they help shape governing under the circumstances of environmental degradation.

1.4. Research objectives

Within the raised questions, the objectives of this paper are:

- To understand how a formal institution engages its society to defining decisions and determining policy outcomes;
- And, to look in depth the rational and pivotal role of civic actors within a formal institution.

1.5. Data gathering and organization

To address these topics, this thesis is structured into four sections:

Chapter 2-3: The first two chapters are devoted to expand the general understanding concerning the urban waterway in Metropolitan Manila, Philippines as well as the Pasig River rehabilitation programme. Interviews, email exchanges, public agencies' websites, journals, brochures, written reports and literatures are the primary sources of data used in this paper. Within these chapters, key emerging civic engagement and governance issues shall be briefly discussed. This shall be the research's initial empirical findings with respect to the specific case of this paper.

Chapter 4: The fourth chapter is devoted to look in depth policy and river rehabilitation frameworks from the related case studies in Africa and Asia; Nairobi River in Kenya, Ping River Basin in Thailand, and Mekong River in Mainland Southeast Asia. These case studies are considered in baseline criterion for civil society involvement in a formal institution through rehabilitation or restoration programmes. These reviews of related case study are utilized for expanding knowledge, principles and opportunities in governance process. This shall further expand the research's empirical findings in parallel with the specific case of this paper.

Chapter 5: The final chapter is devoted to have a discussion concerning the context of civic engagement according to empirical findings from the cases presented. Through all these sections, the paper attempts to shape the direction towards an effective and sustainable civic engagement within a formal institution; potential reconsideration of civic participation and slight outlook at institutional arrangement shall as well be discussed.

2.0. The context of Philippines and its urban structure

This chapter aims to provide an overall understanding of the country's basic profile with respect to physical and environmental profile as well as deeper analysis about Metropolitan Manila's urban structure.

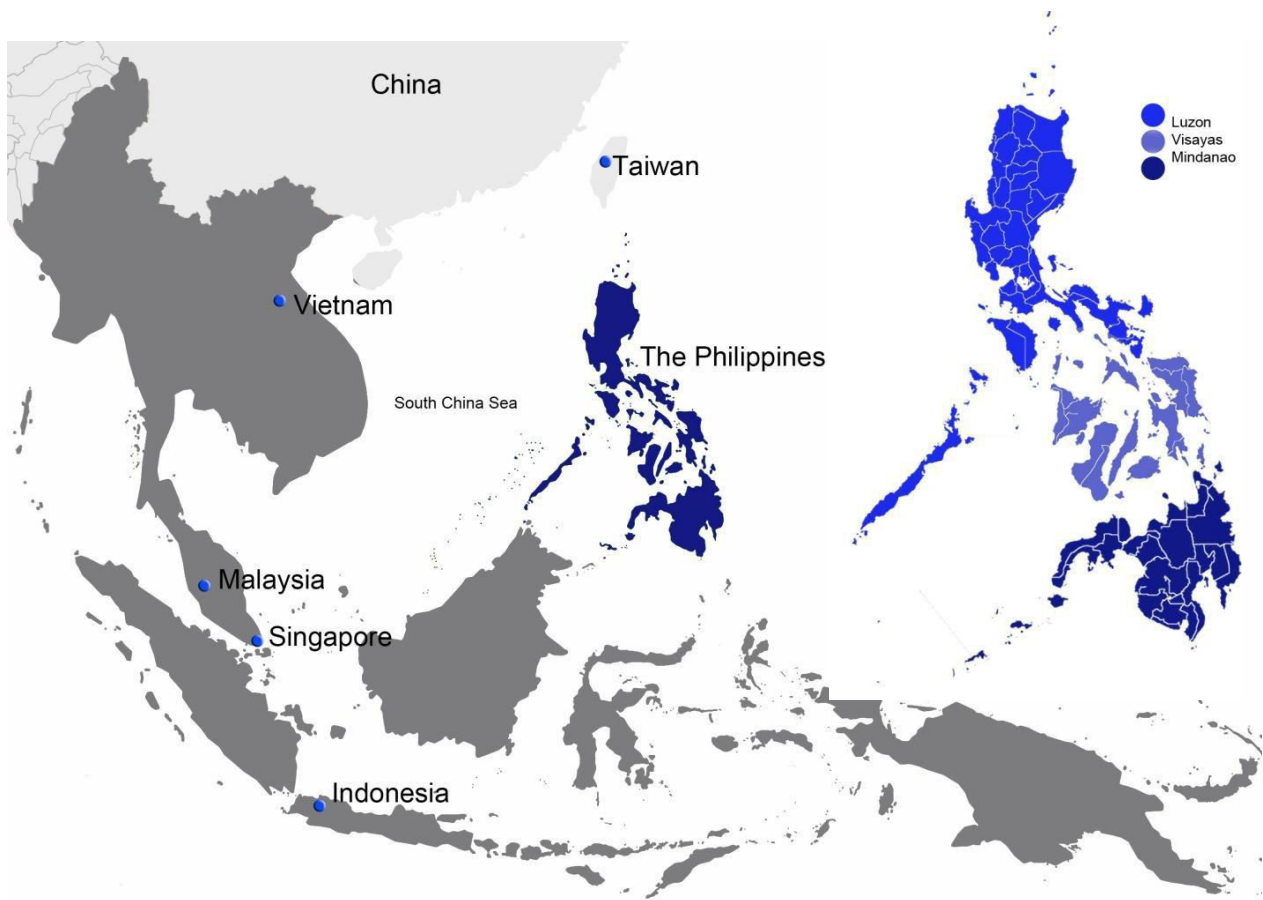
2.1. Overview

The Philippines is categorically very unique in relation to its physical setting; it is considered to be one as of the largest tropical archipelagos in the world, consisting of more than 7,100 island located in one of the naturally diverse region in the continent of Asia. It is located between the Philippine Sea and South China Sea, and shares its sea borders with Taiwan and China to the north, Malaysia and Indonesia to the south, and Vietnam to the west (*see map 2.1*). Due to its archipelago configuration, its thousand of islands are categorically divided into three group of islands: Luzon - the biggest island group, Visayas, and Mindanao which gives an accumulated land area of approximately 300,000 km²; Its land area is comparable to Italy which is approximately 302 000 sq km².

Given of its archipelago configuration, it is considered to have one of the longest coastlines in the world for having nearly 70 percent of its land area divided by the sea. The richness of its water forms is as much as its land forms; it has a strong combination of varied topography. The highest mountains and great number of active volcanoes are found in the larger islands which are Luzon and Mindanao. In terms of bodies of water, The Philippines is stuffed with rivers and lakes; prominent water forms are largely located in the Luzon island: namely Manila Bay, one of the finest natural harbors in the world, figured prominently in the Spanish decision to make Manila the site of their capital, Pasig River, flows between Laguna de Bay, the largest freshwater lake in the

² Library of Congress – Federal Research Division, March 2006

Geographical location of Philippines in Southeast Asia



(Map 2.1) Source: Author's elaboration, 2013

Philippines, through Metropolitan Manila to Manila Bay, and Palawan River, the longest underground river in the world.

Geographically, the country is considered to be one of the most disaster-prone countries in the world. It ranks 12 among the 200 countries most at-risk for tropical cyclones, floods, earthquakes, and landslides in the 2009 Mortality Risk conducted by the UN International Strategy for Disaster Reduction. The country is located in an area where there is high frequency of natural and climate-related hazards that certainly threatens civil protection; it lies in the 'typhoon belt' which starts from Marianas Trench in the Pacific Ocean for which the country anticipates nearly 20 typhoons annually; it as well lies in the region of active volcanoes around the Pacific ocean which is commonly known as the 'Pacific Ring of Fire' and rests on the unstable region between the Pacific and Eurasian tectonic plates.

Because of its archipelagic configuration, about 70 percent of its total populated mass area is located in coastal zone; therefore, aquatic resources are regarded as the most important part of its citizenry. The Filipinos, the denonym of the people in the Philippines, are, in nature, heavily dependent on both freshwater and seawater source as one of their staple foods. In freshwater resources, it is inevitable to have large numbers to have (69) lakes and (421) principal rivers that basically provide; domestic and industrial water supplies; irrigation for agriculture; fish supply for landlocked communities; and naval transportation. When we look closely at the river system of the country - out of the 421 rivers - 19 are considered to be major ones; a large number of these rivers flow through urbanized areas in the country. While some are still healthy in condition, other urban rivers are currently overly exploited and pose threat on the healthy cycle of urban ecosystem. As any other country in the world, it has long been much dependent on the benefits its natural resources can produce for its people. Therefore, the welfare and conservation of its natural resources heavily depends on how its citizenry foresee it.

2.1.1. Institutional framework

According to the 1987 Constitution of The Philippines, the country is a democratic and presidential state where the sovereignty of its country lives on its people and its government authority originates from the people themselves; it is, therefore, headed by a president who is both the head of the state and head of its government. Generally speaking, the country exercises decentralized framework of government. National government has cabinet of 26 secretaries which is regarded as the national departments, a bicameral congress, and a judiciary. Its national departments are dispersed in regional level for supervision and consultation purposes with local government about policy formulation and implementation. Regional level exists only for administrative activities between the national and local government. In general, there are 15 administrative regions and two special units that are autonomous and specially administer in their own region.

With the drive to liberalized economic policies and market reforms, there have been wide spread shift of planning and decision-making to local governments - which consists of provinces, cities, municipalities, and barangays (similar to village); this permits them to possessing political autonomy within their jurisdictions. More so, implementation of

national policies and departmental programmes has to be consulted to them before its realization. However despite of having political power, they are constricted of annual budget because it directly comes from the national government. Therefore, in order to effectively deliver their basic services functions they often venture in inter-municipal cooperation.

2.1.2. Environmental framework

The environmental sector in the country is under the responsibility of the Department of Environment and Natural Resources. This national agency is accountable for the overall development of environment and natural resources of the country through its national strategy for sustainable development. Philippine Strategy for Sustainable Development (PSSD) encompasses a conceptual framework of conservation and protection of the country's entire ecosystem in parallel with the recognition of all sectors of the society.

In light of its water sector, this central agency consists of attached agencies that specifically handle water resource management of the country namely National Water Resource Board and River Basin Control Office. The National Water Resources Board (NWRB) is the lead government agency in the Philippine water sector, conferred with policy-making, regulatory and quasi-judicial functions. While the River Basin Control Office is conferred for the integrated planning and management, rehabilitation and development of the country's river basins. The formation of such agencies suggests that political powers are extended to local authorities for coordinating river basin management aiming to cope with interdependencies in societal development and political decisions. At present, there are already five types of river basin organizations implemented:

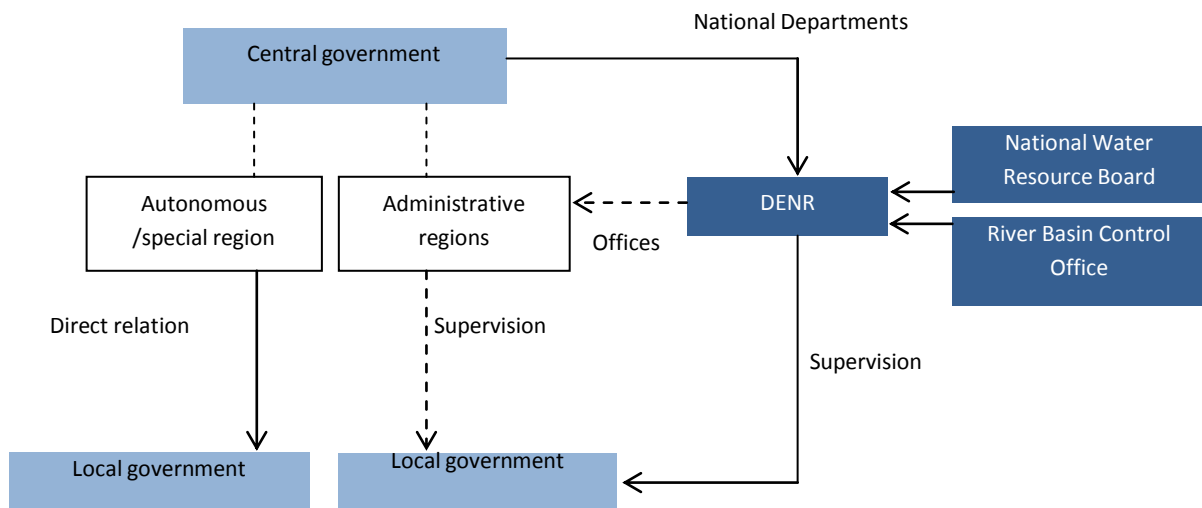
- 1 Authority (such as the Laguna Lake Development Authority)
- 2 Commission (such as the Pasig River Rehabilitation Commission)**
- 3 Council (such as the Cagayan de Oro River Basin, and Lake Lanao Watershed Protection and Development Councils);
- 4 Project Management Office(such as the Bicol River Basin)
- 5 Inter-agency Committee such as the Manila Bay River Basin Coordinating Committee.

Source: Cabrido, Candido, 2009

As much as the few devolved functions and powers to river basin offices, Local government units receive certain powers and devolved functions that specifically address much lower issues; they are under supervision of the central agency and share the share responsibility of ensuring sustainable management on water resources within their jurisdictions.

Philippines' Institutional and environmental framework

Environmental administration



(Diagram 2.1) Source: Author's elaboration, 2013

2.2. The context of Urbanization in the Philippines

In Asian context, the process of urbanization in both its urban characteristics and configurations provide a different aspect of phenomenon that occurred in the early urbanization patterns of those developed countries today. Urbanization in Asia has been propelled by (i) rampant rural-to-urban migration, (ii.) re-classification of rural area to urban areas, and of course, (iii.) natural increase. Certainly, urbanization is a central force that is basically altering Asian cities and urban agglomerations today.

2.2.1. Urbanization process

A specific characteristic of urbanization in the country can be associated with the reclassification of areas. As previously mentioned, the context of Asian urbanization is quite different compared to the early urbanization patterns. According to several scholars, urbanization in the country is sometimes exaggerated because the term 'urban' has never been consistent and less stringent. Looking back at its basic definition back in 1970s, urban areas were defined according to its population density, basic services and facilities, and

street pattern. It was simply defined in a liberal way that considered several variables for an area to be considered 'urban'. But, when re-evaluation of the term 'urban area' occurred in 1990s, the very definition of 'urban area' has been regarded to its number of population and density; this definition seems quite rigid and only focuses on a single variable. According to NSCB 1995, the population threshold for a city or municipality to be called urban is about 80 000 or its population density is at least 4000, regardless of its available basic services and facilities. Clearly, the country's definition of 'urban' has dramatically increased its 'urbanization processes.

The Philippines is just like China, India and Indonesia in relation to population boom in the last fifty years. The population boom in the country has grown uncontrollably since 1960. According to the National Statistics Office Census-Philippines, in 2010 the country posts a total population of 92.34 million with an annual growth of 1.9 percentage (two thirds of which live in coastal zone); it is projected to reach 126 million by the year of 2020. Although smaller than the said Asian countries, its population as of today brings forth massive changes in the country's economic and environmental aspect; its population boom is certainly accompanied with geographic redistribution of population.

Rural and Urban population 1960-2010

Population	1960	2000	2010
rural	19 million	37.5 million	46 million
urban	8 million	39 million	47 million

(Table 2.1.) Source: National Statistics Office Census Data- Philippines, Human Settlement- Philippines, 2004

According to this table, rural and urban population in the country has increasingly changing over the last 4 decades. Given the natural rate of population, the country has experienced a rampant rural to urban migration. The number of people that resides in urban areas has outnumbered those in rural areas.

We may say that the continuous drop of rural population in the country is as a great deal as the general issues of many developing countries today. This is primarily because of technological development in metropolises which tend to attract people for the economic opportunities it offers; the accessibility to different basic urban services such as education, food and medical services; and lastly, political autonomy of urban areas in relation to

service. Agrarian reform and other rural development programs of the last few decades have had a dismal record in their attempts to de-concentrate ownership of land and assets and to release the productive potentials of the countryside (Emma Porio, 2009; 30). More so, high rate of land conversion is relatable to weak spatial planning of regional and local level to intact agricultural activities in their premises. Rural-urban migration to Metro Manila and the major urban centers was the dominant pattern. Therefore, lack of opportunities and degrading growth are the essential factors there has been a massive cause urban-rural migration.

	1975-1980		1985-1990	
	Male	Female	Male	Female
National capital Region	39.93	60.07	41.83	58.17
Central Luzon	45.77	54.23	47.26	52.74
Southern Tagalog- Luzon	49.24	50.76	49.07	50.93
Central Visayas	48.22	51.78	48.40	51.60
Central Mindanao	50.80	49.20	50.79	49.21

Source of figures: Interregional migration rates by sex and by region of destination (1975-1990) of Emma Porio, 2009

(Table 2.2.)

The table shows that the gender differences in rural-urban migration are quite overwhelming. Women simply outnumbered men in urban migration. Migration has resulted to urban areas and metropolitan structures to be ‘feminized’ while rural places of origin have become ‘masculinized’. This high rate of women urban migration is empowered by economic opportunities that cities and urbanized areas offered. In addition, urban migration pattern reveals that youth has as well increasingly been moving towards urbanized areas due to similar reasons. The dominance of light, export-oriented industries and domestic help opportunities in urbanized areas attracted youth and female workers. Hence, there is a massive geographic redistribution of the population.

2.2.2. Employment shift

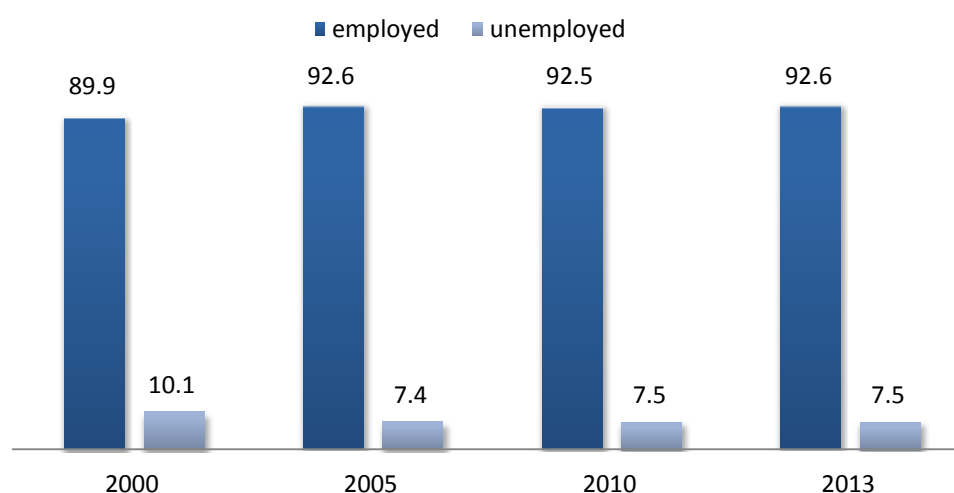
Having said the high economic opportunities present in urbanized areas, the employment per sector in the country has as well changed rapidly. In the last decades, there is a constant shift of employment from agricultural to service and industrial sector. Agriculture sector contributes about 20 percent to the country’s gross domestic product (GDP) 24 percent to

total export earnings, and 46 percent to total employment in the last 15 years (*Bureau of Agricultural Statistics, 2003*). However, it continuously drops largely due to the high rate of land conversion (mostly in industrial, commercial and residential areas) and loss of interests by the farm owners. The migrated rural population often finds economic opportunities in industrial sector primarily in manufacturing plants and partly in service sector. But in the last years, industrial sector employment, similar with agricultural sector, is in constant drop and large number moves in urban fringes – an area between urban and rural areas - due to the new service demands of its society.

The Philippine economy has been largely transformed into an urban-based economy during the last 15 years or so. This can be seen in the continuous decline of the growth of the agricultural sector and with the increasing productivity, employment and income opportunities generated by the services and industrial sectors. (Emma Porio, 2009; 33). Recently, the country has been recognized as a ‘Newly-Industrialized Country’ due to the strong growth in business process outsourcing and export-oriented activities such as the production of corn, mango and rice. BPO is considered an essential driver for the country towards service sector economy as it brings employment opportunities to the population.

Production sector	1990	2000	2009
Agricultural	22 %	18 %	15 %
Industrial	35 %	32 %	30 %
Service	44 %	50 %	55 %

(Table 2.3) Source of figures: National Statistics Office Census Data- Philippines 2004 as of NIA 4Q



(Table 2.1) Source of figures: National Statistics Office- Philippines, 2011

Despite of the changes in its employment sector, the country continuously rates high in employment against unemployment. As seen below, the employment in the country rises from 89.9 to 92.6 percent while the unemployment rate decreases from 10.1 to 7.6 percent in the last 13 years. Large concentration of employment in the country is concentrated in urbanized areas .However, in spite of industrialization, increasing number of small and medium enterprises, and decreasing unemployment – in contrary, increasing underemployment- in the country the country lacks the capacity to generate much higher number of employment and livelihood opportunities simply because they are not fully harnessed by public policies.

2.2.3. Large share of informal sector in employment

What should be highlighted in this case is the division of employment in the formal and informal sector. Given the rapid increase of service employment in the country, it has become an offshoot for urban migration where the informal sector with abundant service job opportunities has been able to absorb the migrant unemployed. Despite the fair rise of employment in formal sector over the last 20 years this still post a crucial issue on urban structure of the metropolis. It has been observed that it is associated with the decline in the quality of jobs in many developing and transitioning economies (Jorge V. Sibal, 2007:10).

Employment share	1984	1997	2005
Formal sector	44.9	49.6	50.4
Informal sector	55.1	52.1	49.6

(Table 2.4) Source: Jorge V. Sibal 2007; 9

According to the assessment by Lee and Eyraud (2007) the changes in employment in the country, and generally in Asia, is increasingly ‘in formalized’. As a conclusion, this large fraction of informal sector may lead to vulnerability of involved population in financial shortage and - poverty in worst cases - as employment is either temporary or contractual.

2.2.4. The Urban growth in Philippine Regions

While the urbanization process in the Philippines has been quite rapid, the overall distribution of urban growth among the geographical regions has been quite irregular. As shown in the table, the growth and level of urbanization among the regions are largely

Philippines and its prime urban centers concentrated with the growth of metropolitan centers like the case of Metropolitan Manila in Luzon Island, Metropolitan Cebu in Visayas group of islands, and Metropolitan Mindanao in Mindanao Island. Metropolitan Manila or commonly known as the 'National Capital Region' (NCR) has consistently experienced the highest levels of urban growth, exceeding the national growth rates (37 percent) from the 1980s onwards. Over the last decades, Southern Tagalog region has received also fast urban growth. This can be associated to the fact that it lies under the National Capital Region in which it absorbs investment that is linked to region and became one of the most urbanized regions in the country. As a conclusion, from the three group of island, Luzon Island has always been the most urbanized because of the presence of Metropolitan Manila. Metropolitan Manila serves like a giant economic engine colonizing and appropriating resources from the other regions of the country (Emma Porio , 2009; 17).

Urban growth percentage in most urbanized Philippine Regions




Level of Urbanization					
Region	1960	1970	1980	1990	2000
Philippines	29.8	31.8	37.8	47.0	48.0
National Capital Region –Luzon	98.1	100	100	100	100
Southern Tagalog- Luzon	26.1	30.6	37.1	53	58.3
Central Visayas	22.2	27.6	32.1	42.5	46.4
Northern Mindanao	20.2	20.9	25.6	42.3	40.2

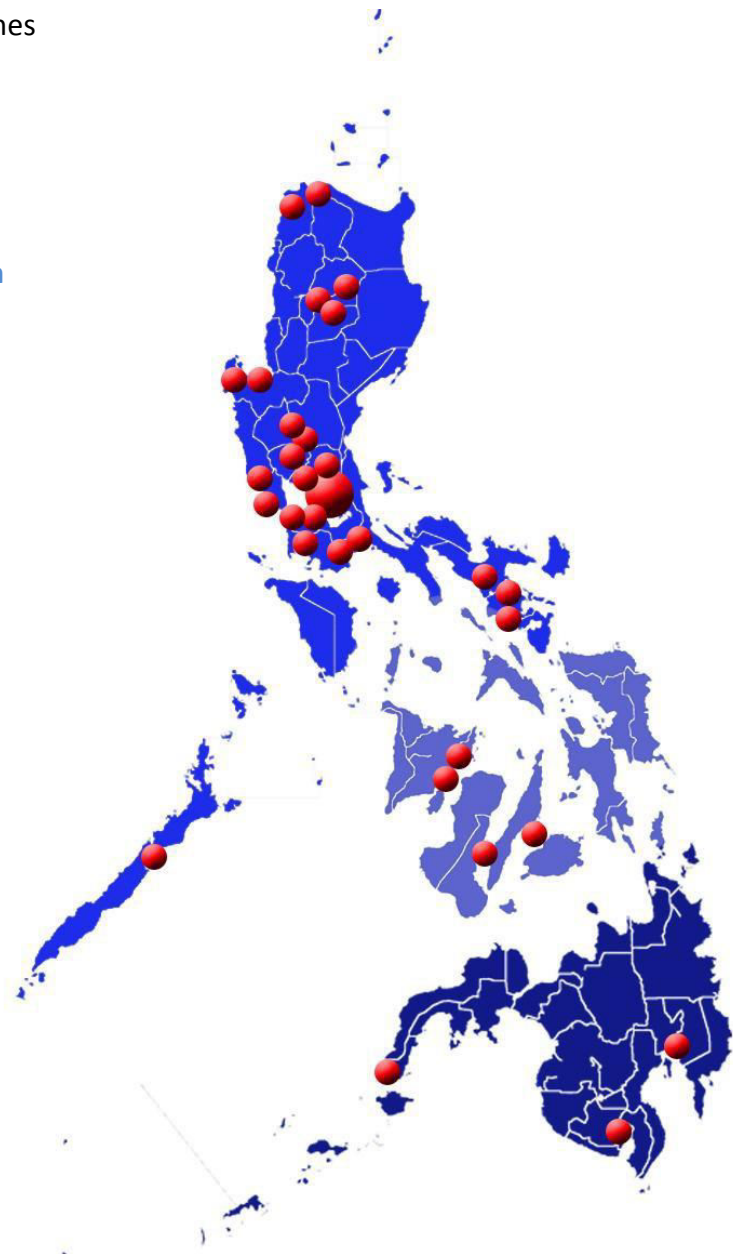
(Table 2.5) Source of figures: National Statistics Office

*The full list of level of urbanization in the country from 1960-2000 is in the appendix section

Prime Urban Center in the Philippines

- Metropolitan Manila
- Metropolitan Naga
- Metropolitan Baguio
- Metropolitan Cebu Metropolitan
- Kalibo Metropolitan Bacolod
- Metropolitan Guimaras
- Metropolitan Cagayan de oro
- Metropolitan Davao

-  Prime urban centers
-  Luzon
-  Visayas
-  Mindanao



(Map 2.2) Source: Author's elaboration, 2013

*The complete list of urban regions in the country is in the appendix section.

2.3. The Urban Dominance of Metropolitan Manila

2.3.1. Urban Evolution

Metro Manila, historically the primate city of the country, has always been the major focus of urban investments and development. It is the national center of growth and the country's premier urban center (Emma Porio, 2009; 20). Metropolitan Manila, or the 'National Capital Region' commonly known in the Philippines, is composed of different cities (16 cities and 1 municipality) and surrounding urban fringes (Greater Manila Area); The post-war years saw the re-construction of Manila and its growth, both in area and population. Virgin lands in the surrounding areas of Manila were developed for residential areas while the outskirts of the Metropolitan today were developed for industrial areas. As a result, there was an enormous extension of the metropolis until the boundaries of near provinces which makes it now a huge urban agglomeration.

Since the legal establishment of Metropolitan Manila in mid 1970 and influx of rural migration, there had been an incredible evolution of municipalities to cities; from having only four cities and fourteen municipalities, these municipalities have upgraded as cities with their rapid increase in socio-economic growth. The growth of the metropolis is associated with the high redistribution of population in urbanized areas, its geographical extension that classifies t formerly rural zones located in the periphery of large cities into urban areas.

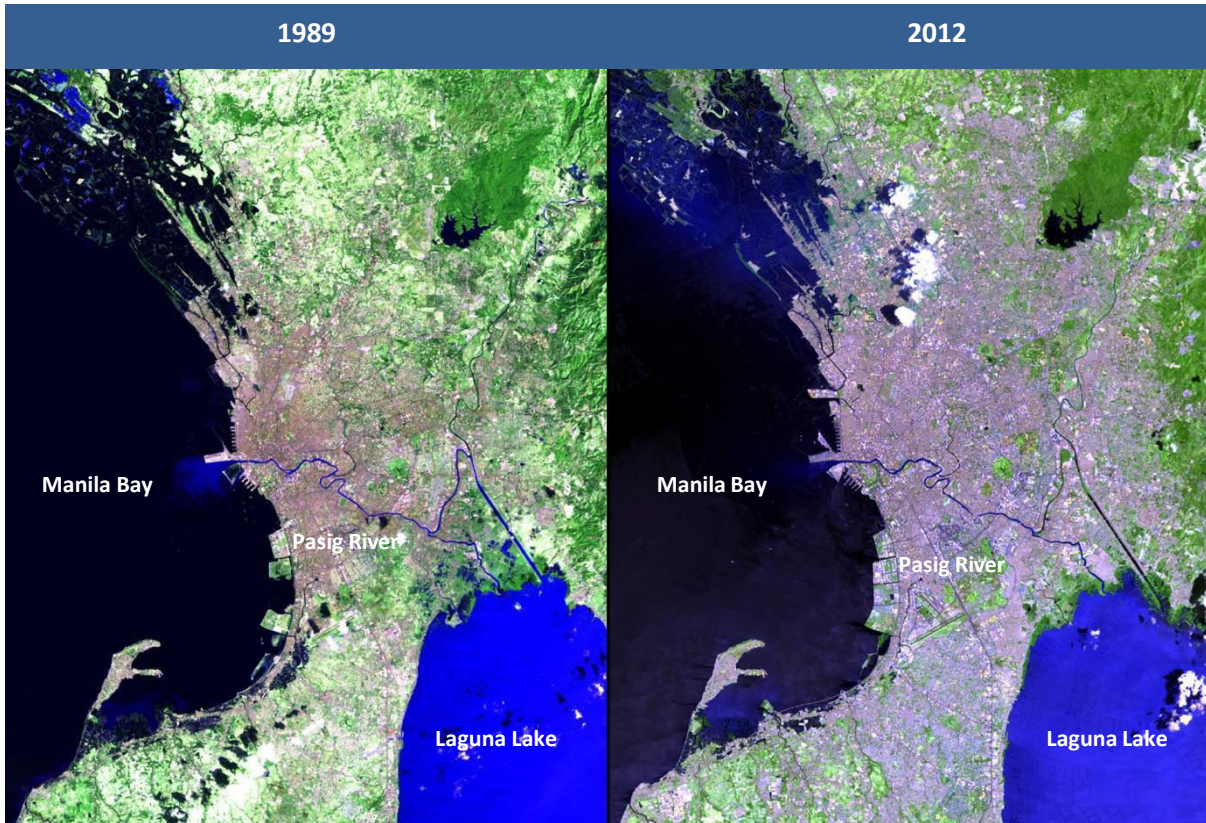
Region	1990	2000	2010
Metropolitan Manila	7,948,392	9,932,560	11,855,975

(Table 2.6) Source of figures: National Statistics Office-Philippines, 1990-2000-2010

Generally speaking, the metropolis posts registered urban population of nearly 12 million people as of 2010 (about 11 percent of the national population) and is projected to reach 13.70 million in 2040 making it again one of the most populous cities in the world by 2050. However, as its population increases the density per sq meters in the metropolis rapidly increases too. Having the total land area of 636 square meters, the metropolis settles 308 persons per square kilometers in 2010 according to National Statistics Office- Philippines which is a 50 percent increase from its 1990 population density of 202 persons per square kilometers. The NSO office notes that the region's population was 62 times denser

compared to the national average. Clearly, the metropolis has become congested of human settlement and activities; as anticipated, its residents live and compete with more limited space to carry out their activities

(Map 2.4)



Urban footprint: pattern of growth

Source of Image: U.S. Geological Survey (USGS) Landsat Missions Gallery, 2012

The image above depicts a strong rapid urban growth in the region in just a span of two decades. It clearly shows how the density of built up areas has become denser particularly in the very heart of the metropolis (large portion is along the Pasig River) and has sprawled enormously in an outward direction exploiting urban fringes surrounding the metropolis and urban public spaces; the pattern of the metropolis' growth is certainly dispersed and chaotic due to the absorption of many rural areas (conurbation).

2.3.2. The Urban Economy

While urban growth in metropolises in the country rises, the metropolis posts the highest among them with respect to economic opportunities, incredible population gain and land extension. The metropolis employment rate has been in constant motion over the last year



A reality of Metropolitan Manila

(Image 2.1)

Ortigas Business District and the mainstream Pasig River system

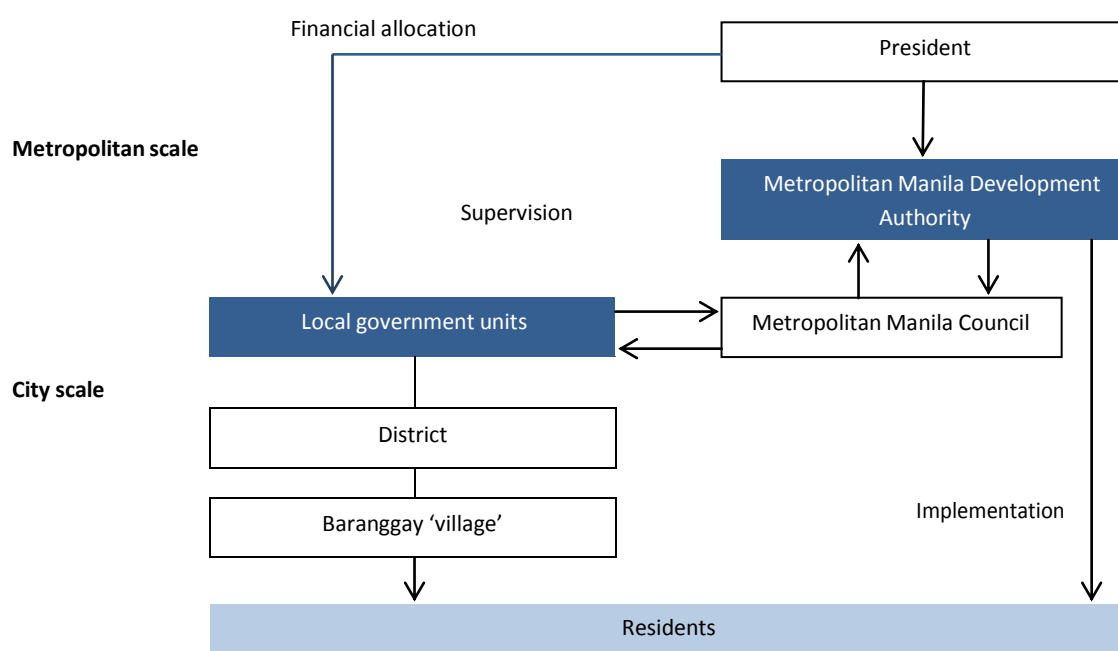
Source of image: Marlon Ramos

while internal migration concurrently takes place. In Metropolitan Manila, 64.5 percent of the total 12 million populations over 15 years old are in the labor force (*National Statistics Office- Philippines, 2010*) and most are employed in production and related types of service work; only one percent is registered in agricultural sector that is located in urban fringes of the region. More so, of the top 50 corporations based in the country, 41 have major offices in Metro Manila. Makati City, located at the heart of Metropolitan Manila has the highest number of tertiary corporations which makes it to become the financial capital and the biggest central business district of the entire country. However, although the metropolis is being dominated by small and medium enterprises, the majority suffers from low credit financing and low innovations. Hence, their capacity to generate employment and livelihood are not fully exploited. In contrary on the increasing national employment rate, the metropolis has posted a constant unemployment rate of 11 percent which is higher than the national rate of 7 to 8 percent. This contradictory phenomenon suggests the maximum capacity of the region to accommodate migrated population for economic opportunities exceeds its limit and Therefore leads to formation of widespread informal settlement and

employment in the region; this sector is usually formed in areas that are vulnerable to natural hazards and physically deteriorated environment; they are largely located along highways, dumpsites, coastal areas, and river lines (river banks). In terms of employment, only half of the total population in depressed settlement is employed in formal sector and the key economic activities are domestic help, construction labor, self employment, vending, and factory labor. Therefore, and very evident in the region, informal sector (employment and settlement) is very much visible all throughout the region. Nevertheless, the metropolis shares 33 percent in total GDP of the national economy.

2.3.3. The Metropolitan management

In particular case of Metropolitan Manila where urban cities have extended towards its surrounding provinces, two-tier system of governance model has been employed to transfer some local government units' key functions to a special unit that is created to control and supervise metropolitan-wide issues. Generally speaking, Metropolitan Manila Development Authority (MMDA) is designated to manage the affairs of Philippines' premier metropolis and its nagging problems in traffic congestion, informal settlement, flooding, waste management and environmental degradation while local government units (LGUs) are responsible for providing basic services within their own jurisdictions.



(Diagram 2.2) Metropolitan Manila's two-tier structure

Source: Author's elaboration, 2013

Metro Manila Authority MMA (Metropolitan Manila Development Authority (MMDA) at present) is categorized as a public body- not a territorial collective - that is under the control of the office of the president. Its council was made up of state representatives and 17 Mayors (and district representatives) for coordinating metropolitan actions. It was given more power in the delivery of projects to address urban development issues, including: land-use planning, urban regeneration, rehabilitation, transport and traffic management, flood control, and sewerage management, solid waste disposal and management, health and sanitation, and disaster management; however, local specific issues were done under the jurisdictions of LGUs.

With the changes of framework – amendment in national codes - in 1990, the legislative authority from MMA was removed, and legislative power was restored to LGUs; hence, MMA became a coordinating agency for the implementation of its policies and programs. This amendment strengthens even more the autonomy of local government units to planning and decision-making processes within their jurisdiction. This leads to MMDA to strengthen its relationship with NGOs, POs, and private sector in delivering services and programs. At present, MMDA is widely perceived to be focused only on traffic management and waste management. Its interventions in metropolitan (regional) planning is hardly felt except in a few specific project-related instances where MMDA is a member of some inter-agency coordinating body such as PRRP (*Nathaniel Von Einsiedel, 2009*).

Moving on, metropolitan services like water, electricity and garbage collection are often poorly provided by the local authorities. In response to these shortcomings, local level allows privatization of urban services delivery; water provision is now entirely owned by a business enterprise and garbage collection, which is under between MMDA and cities, is performed by hired private collector firms. Given the LGUs autonomy status, it becomes difficult for MMDA enforce its metro-wide policies and programs because it could no longer involved in any development planning in a metropolitan scale and ,most often than not, development is not coordinated among LGUs, leading to metropolitan problems such as overcrowding, insufficient community facilities and services.

2.3.4. The Urban Environment: According to the study conducted by the World Health Organization’s Commission on Health and Environment, the metropolis is one of the most

polluted mega cities in the world. The study asserts that as the metropolis continuously experiencing social and economic outburst, haywire metro-wide governance, and inadequate local services and facilities they all bring forth human-caused environmental degradation in the metropolis, be it air, land or water exploitation, and natural hazards such as frequent flooding.

2.4. Key emerging issues

Just like any other newly-industrialized economy, the country experiences new urban phenomenon that draws new urban questions. According to Bernardo Secchi (2010), whenever the structure of the entire economy is radically changing, the new urban question comes to the fore: at the beginning of the industrial revolution; passing from the manufacturing to the factory system, when the Taylor Ford's labor organization took place; at its end and finally in the beginning of the era Bauman associates with the 'liquid society', Beck with the 'risk society' and Rifkin with the age of success. Accordingly, the country is no stranger to several overlapping contemporary urban issues in relation to socio-economic, infrastructure and environmental factors. The key issues that the Philippines has been experiencing over the last decades are outlined below.

2.4.1. Concentrated-pattern of rapid urbanization in the Metropolis of Manila

Rapid industrialization makes the country as one of the fastest emerging economies in Asia and perhaps the world. The urban development in the country is far from a homogenous distribution across its regions; largely, the highest concentration of economic and social activities in the country are located in a very limited number of areas- particularly Metropolitan Manila- unlike those developed countries where urban development is fairly distributed across their countries. As previously mentioned the country's development path is characterized by fast growing services sector and lagging manufacturing and agricultural sector. By 2035, the share of urban activities to total production and total employment will increase by 92 percent and 88 percent respectively and the service sector will likely be the driver for urban growth in the longer term.

As the country faces rapid urban development, it, however, lacks the capacity to deal with an effective strategic planning - particularly infrastructural provision -linking urban growth

to economic and social activities; such lack of capacity along the edges have lead to more overlapping challenges such as urban poverty, environmental degradation and to certain extent climate-related hazards.

2.4.2. Social facet of urban poverty

Urban poverty is a serious challenge in the country. Almost 30 percent of the national population live below the poverty line; and most live in densely populated and cramped areas that, as mentioned earlier, are most vulnerable to natural and human-caused hazards. This, however, is coupled with the growing rate of slum population that is much higher than the annual urban growth rate. The issue of urban poverty is undoubtedly a daunting task for local governments because it contains components that are crucial for an urban sustainable development. But what usually happen in the metropolis is social development, same with environmental protection, are deeply compromise for economic development. Clearly, this dilemma has stem from the unmet social needs and economic opportunities that urban areas are supposed to provide for which is the typical issues linked to urban governance and spatial planning. It, therefore, calls for an innovative planning approach from national and local government to employ measures in mitigating urban poverty and increasing sufficient opportunities for slum communities.

2.4.3. Weak spatial planning: Lack of integration of sector policies

There is an uneven relationship between the surges of contemporary urban needs to the environmental policies that clearly posts high risk on sustainable development of the country. The issue of lack of integration is exacerbated by the limited institutional capacity to cope with disasters and response on this complex issue. More so, it appears that the country behaves in a reactive way that makes the integration much blurrier. Although there are several existing programs, preventive measures and laws for such urban challenges, social and environmental needs are barely addressed due to the institution's low priority. There are landmarks that have already been passed during the last decades in the country such as Housing provision Act, the Ecological Solid Waste Management Act, The Clean Air Act, and Clean Water Act but because of low priorities from higher authorities they are properly supervised which then influences the behavior of its citizen to poor observance.

2.4.4. Impact of human-caused environmental degradation

According to the Ecological Footprint of the Philippines report (2012), the country has already exceeded the limits of its biological capacity to sustain its own consumption and waste generation. The footprint of the country doubles the maximum capacity of its environment which insinuates that it needs two of itself (reproduction of another Philippines) to accommodate the consumption and waste production of its 92 million people. It is a clear sign that the country is under a big threat of human-caused environmental degradation.

The Philippines seriously suffers from the dreadful effects of exploitation on its environment. According to The World Risk Report 2011 issued by the United Nations University Institute for Environment and Human Safety (UNU-EHS) the Philippines is the third most vulnerable worldwide because of the frequency of typhoons, floods or landslides. However, urbanization (with the high population rate) and economic growth are escalating such problems that are particularly linked with air and water pollution and flooding. *(i) Air pollution:* Air quality of metropolises in the country has been deteriorating over the last years largely because of pollution that is often generated domestically - industrial and agricultural plants - and mobile sources. It is estimated that 30 percent of air pollution in the country is attributable to industrial sources, mainly the power sector. However, the remaining percentage of air pollution source is attributable to heavy vehicular traffic that often emits dark toxic smoke. In addition, there appears a huge issue on environmental policy implementation in the country. For an instance, the Air Quality Act of the Philippines never materializes well both from local people and the higher authorities largely because of underrated enforcement of the acts.

(ii) Water pollution: Waste pollution is very evident in urban areas especially in Metropolitan Manila. About 35 percent to 58 percent of the organic pollution comes from domestic sources both solid waste and untreated sewer waste. The country also faces inadequate waste management which exacerbates its serious water pollution. It is estimated that in the urban areas, waste generation is around half a kilo per person per day. In Metropolitan Manila alone, about 7,000 tons of solid waste is generated on a daily basis in 2008.

However, only 700 tons are reused for waste recycling and recomposing, while the remaining ones are dumped into estuaries, dumpsites and rivers.

According to Marife Ballesteros (2010), the absence of sewerage system in most parts of the country adds to pollution in water. Household waste is disposed through septic tanks, many of which are improperly designed, constructed (many are bottomless) and hardly maintained. In Metropolitan Manila alone about 15 percent of the sewage generated is treated. All other pollutants are drained into rivers thus all four main bodies of water in the metropolis – Pasig-Marikina, Navotas-Malabon-Tullahan-Tenejeros, Manila Bay, and Laguna Lake- have been considered biologically dead.

Finally, one of the serious domino effects of rapid urbanization is flooding. As mentioned earlier, the country is very susceptible to flooding due to its geographical location but what makes it more critical and detrimental is the proliferation of informal settlements near waterways and defective sewerage system. These illegal developments near the waterways exacerbate the flooding and physical damage the country may obtain from it.

Image 2.2



Major waterway in Metropolitan Manila Major thoroughfare in Metropolitan Manila

3.0. The case of Pasig River Rehabilitation in Metropolitan Manila, Philippines

Introduction

This chapter deals with the rehabilitation case of Pasig River that embodies the key component of emerging urban issues discussed by the author. The case of Pasig River rehabilitation has long been a big challenge for policy makers and city planners on how to bring back its productive and inclusive river life to the people. The emergence of issues in relation to built and natural environment serve as an opportunity for the entire society to act collectively on a long term solution for its dying river that once part of the metropolitan's life.

3.1. Overview

The Pasig River system is a strategic but environmentally endangered waterway. Winding through the most densely populated areas in the country's National Capital Region (NCR) (*Dennis Murphy, Tedy Anana, 2004*). The river passes through five cities and four municipalities in Metropolitan Manila and connects two large, important bodies of water; Manila Bay in the west is the country's main port of maritime trade and travel and Laguna de Bay in the east is the largest freshwater lake in the country and connects 30 suburban towns to the metropolitan centre (*Richard Helmer et al. 1997*). It is the longest river in the metropolis which runs in 26 kilometers long. An estimated of 4.4 million of the total population of Metropolitan Manila live near or along the river and its tributaries. There are also major tributaries and regions major spillway – The Manggahan Spillway- which made it a natural and important river basin in the region (see map a.1).

Through Manila's early history, the Pasig River which runs through the heart of the metropolis was the city's center and lifeline. It was the principal means of transport, and the

big warehouses and factories were on the river as well as the houses of the rich, including the presidential palace. However, after World War II and with population growth, road construction, and newer business location strategies, the city center moved from the river to other sites. Makati, for example, has become the financial center of the country. The river was largely abandoned. Many urban poor people moved in replacing the abandoned factories and large scale houses and have started to occupy open areas near the river line. Since then, the river has been habituated largely by informal settlement.

The river was once part of a colorful metropolitan life in Manila; it once used by the people for bathing and fishing activities in early 1900s but as the metropolis increased its population and the river started to be habituated by informal sector there was a noticeable drop of personal and commercial activities in the river which was as much as dropped in the migration and reproduction of fishes. Since then until 1970, the activities in the river continued to drop and the water quality river began to fall below Class 'C' level which means the river water is only suitable for irrigational activities. But it was in 1990 when the river was categorized by international agencies a biologically dead river system due to the fact that it could no longer support any forms of aquatic life and unsuitable for any river activities.

(Image 2.3) A part of territorial identity



Pasig Ferry service Historical landmark in Manila 'Intramuros'

The river plays an important geographical role to the entire metropolis; it serves as the only 'drain outlet' (see map a.2) of the excess water from the landlocked Laguna Lake and the entire watershed system in the region (see map a.3). Aside from the lake, the river also drains 13 major river tributaries including the vanishing network of esteros and creeks- built during the Spanish colonial era. In a situation where the river gets clogged, the low lying areas near the river and the lake would be transformed into a new body of water and communities would get vanish. The river is located in naturally integrated bodies of water and so its geographical significance is very crucial and certainly calls for a sustainable protection. Therefore, the river needs to remain clear of debris and, as much as possible, clean so the natural tides and cycle of water can continuously make up the other bodies of water.

3.1.1. Nature of the problem

The deterioration of the river over the last years has demonstrated a dramatic exploitation of the natural resource for one's self interest. The negligence and over dependence of urban population to the river as well as the mesh up of rapid economic growth with natural resources show a long-term negative impact on the current state of the river.

The very nature of the river's problem is relatable to the classical dilemma '*tragedy of the commons*' spelled out by *Garrett Hardin (1968)* whereby shared environmental resources deplete with overexploitation of the 'commons' with no reinforcing control in the situation. The rationale behind the idea is that each user benefits to their sole advantage from using the shared resource that no one has direct claim, without consideration of the effect it may have for the other or for the long term, but partly bears the cost of collective burden of overexploitation, which in the end will no longer be usable. *Garrett Hardin (1968)* explicitly cites an example relatable to the case that presents the over exploitation of water bodies. He cited that ocean, in general, is a perfect sample of a shared resource that may easily be exploited largely because, naturally, it is shared by many different regions or countries. Therefore, no single authority has the power for regulation and legislation to protect an entire ocean. Instead, these nations manage and protect its coastlines, leaving the shared common resource beyond any legislation that is prone to pollution.

3.1.2. Driver of the environmental change

Poverty and shelter

Growing informal settlement: A steady influx of migration into the metropolis has resulted in human congestion and exploitation of land and riverbanks. In the span of 12 years (1988 to 1990), the rate of migration into the squatter colonies along the riverbank was estimated at nearly 73 percent. Increasing poverty in the rural areas has driven rural people to migrate to Metropolitan Manila to seek better income opportunities (Richard Helmer et al. 1997); consequently, the banks of the river system serve as one of the most logical locations for new informal settlements because many of the depressed areas in the metropolis are already crowded and overpopulated.

The river system as a waste catchment: The sources of pollution in the river system have already been pointed out from the squatter areas and giant warehouses along the river line. The banks of the Pasig River are lined by squatter colonies consisting of approximately 12,000 households. About 2,000 families live in houses on stilts or under the bridges, where they present a danger for themselves and the vessels using the river.



● (Image 3.1)

Ecological condition of small estuaries

Source: ABS-CBN foundation

● (Image 3.2)

Ecological state of the
mainstream river

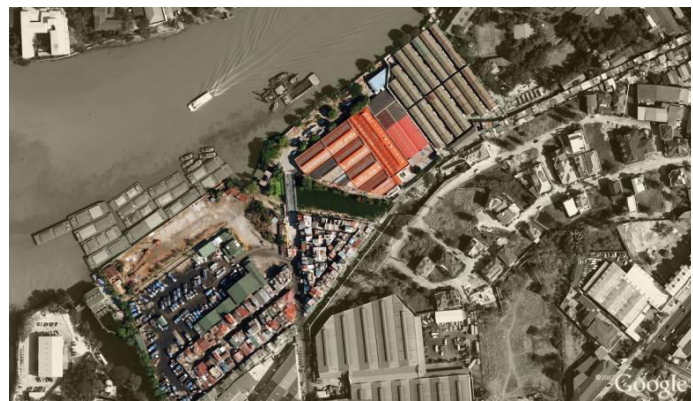
Source: Nan (2009)

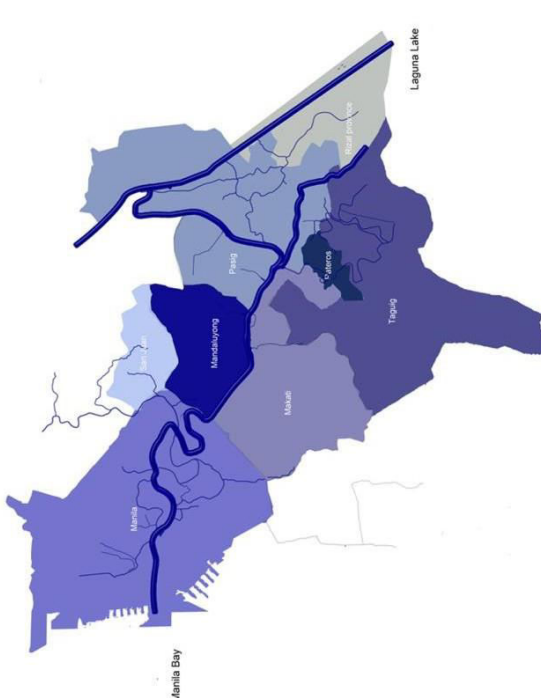


● Image (3.3)

Ecological state of a rehabilitated
estuary

Source: Kapit Bisig Para sa Ilog
Pasig foundation

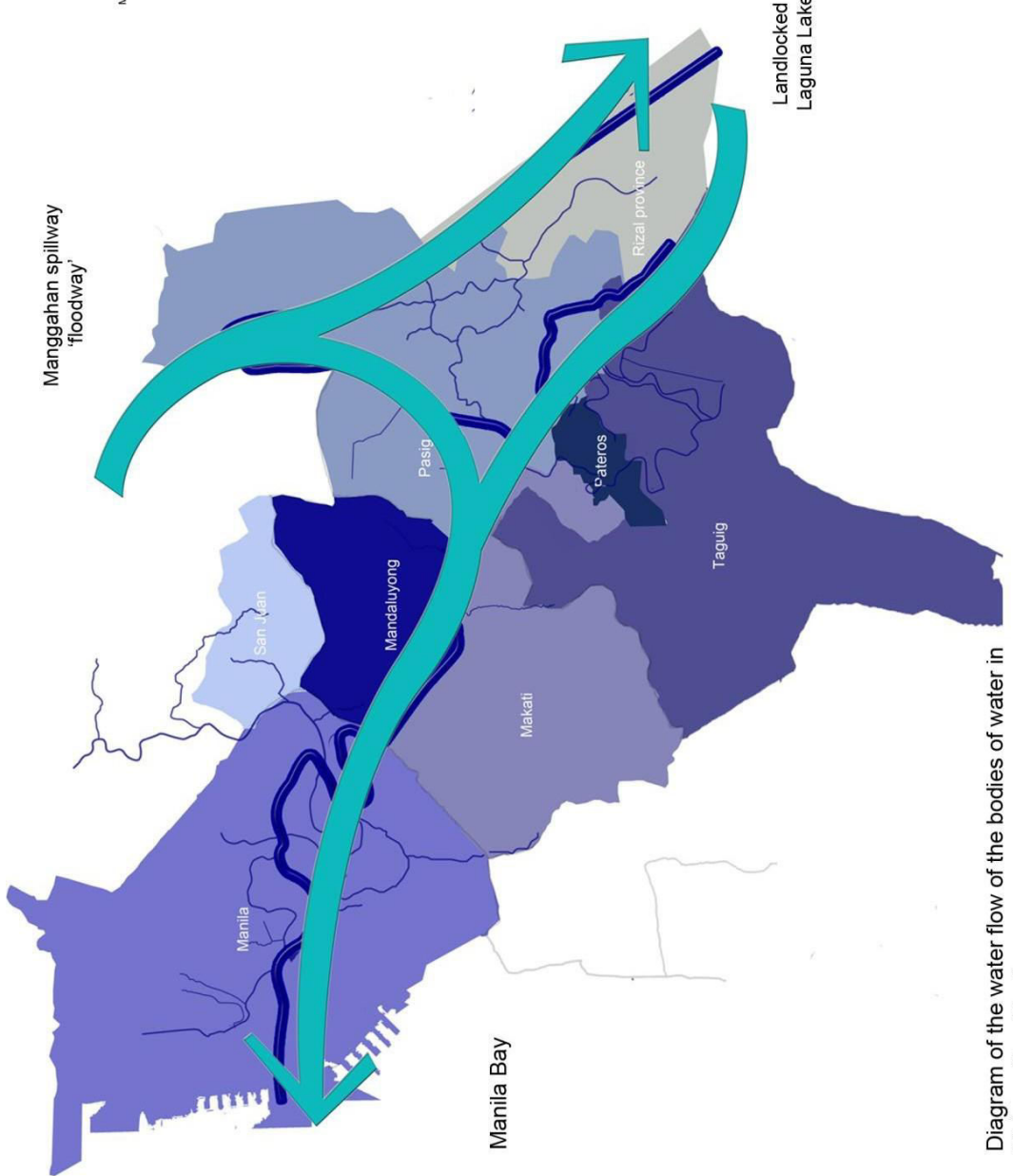




a.3 The Pasig River system
Greater Metropolitan Manila and neighboring provinces



(Maps 3.1)



a.2 Diagram of the water flow of the bodies of water in Metropolitan Manila

This map shows the geographical significance of the river as part of the watershed system in Greater Metropolitan Manila. The river serves as the only 'drain outlet' of excess water from the landlocked Laguna de Bay or simply Laguna Lake towards Manila Bay. There is a major spillway 'floodway' constructed to divert excess water coming from the central watershed. According to studies, the tributaries of the river has the highest number of frequent flooding in the last decades.

present a danger for themselves and the vessels using the river. These settlements have no proper sanitary facilities therefore their liquid and solid wastes are discharged straight into the river. With the continuous dumping of wastes, the river bed has become more a silted with organic matter and non-biodegradable rubbish (*Richard Helmer et al. 1997*); according to Japanese International Development Agency (JICA) domestic waste accounts for 60 percent of the total pollution.

Poor drainage infrastructure: Industrial plants and warehouses along the river discharge toxic wastes directly into the river; they have a poor drainage and sewerage system that aggravated the level of chemical wastes. About 315 out of the 2000 factories situated in the river basin have been determined as principal polluters in the river. However, the pollution rate is expected to decrease by 2 percent per year due to the limited commercial land available along the river and the increased requirements for container transport. According to JICA (2002), nearly 35 percent of the total pollution in the river is attributable from Industrial wastes. The other 10 percent remaining comes from solid was that are usually thrown into the river.

Frequent flooding: Flooding has been identified also as a major problem it faces. The combination of old drains and thrown rubbish result in blockage of the river's natural flow which therefore affects easily the increase of water level and its physical damages to the premises near the entire river basin system whenever a tropical cyclone hits the country.

3.2. State's initiatives

Water governance

Interlinked environment-development challenges require effective, linked and coherent governance and policy responses within the framework of sustainable development (*Edward R. Carr, 2007*). As a broad response to mounting environmental issues, national legal has established a number of regimes, laws, and actions to safeguard the environment and to act proactively on new implications of environmental change.

The alarming linkages of environmental impacts in the metropolis have long been regarded as a national priority; the central government recognizes the significance of forming a specific regime with regards to its mounting water issues. Through the years, the

government has issued a plethora of laws and created institutions to manage, protect, and preserve the country's environment and natural resources (*World Bank, 2009*). The discussion with respect to the established institution especially committed to Pasig River's rehabilitation will be part of the following sections.

3.2.1. Institutionalized framework

To better comprehend the institutional framework on river rehabilitation, this section argues the evolution of the established regime and its programmes under the changing landscape of political support and agenda. The early signs of environmental management in the river can be dated back in early 1970s committed for the socio-economic benefits of the river. In doing so, a regional council was formed and controlled over the local government units. However, it only lasted for a short period of time and is completely abolished, as previous studies believe, due to lack of support particularly from corporate sector.

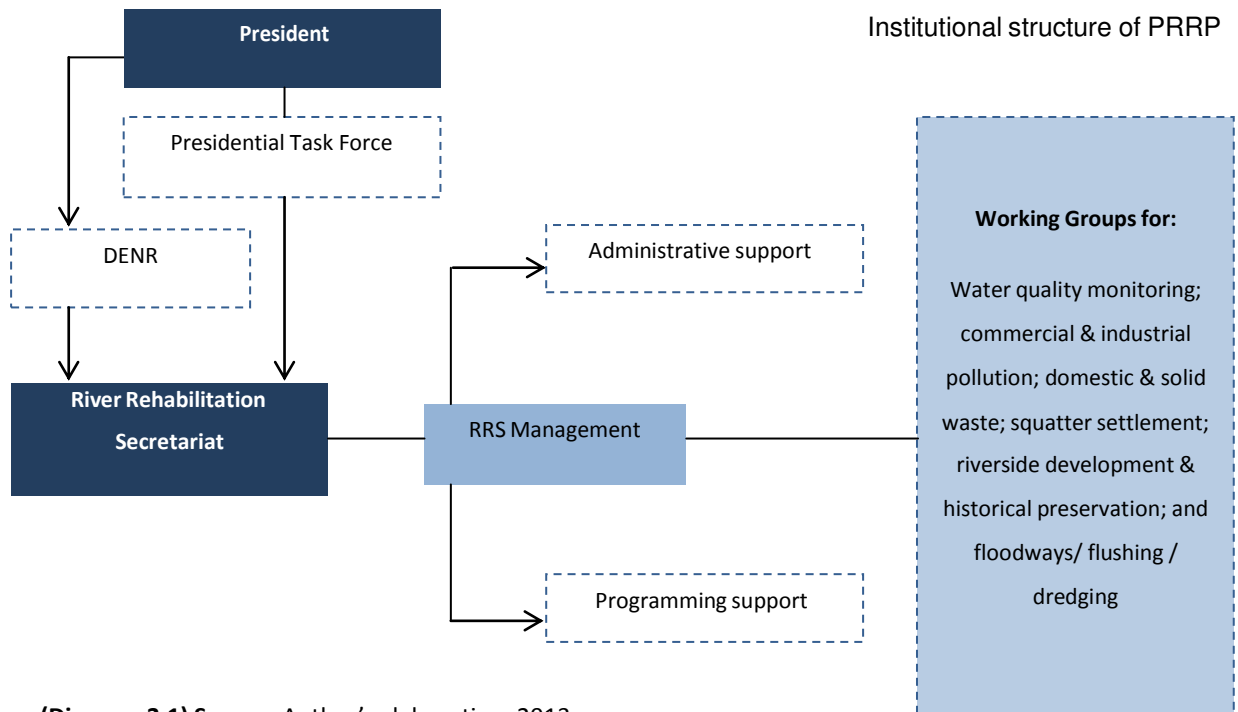
According to Scott's definition (1987), 'institutions' focus on regulative agencies which exercise legitimate powers to formulate and enforce rule systems; Samuel Huntington adds that the creation of such structures intermediate between the generation demand of society and the government itself. Clearly, the institution, at this time of its formation, works in a closed-system wherein the pattern of interaction takes place across state actors.

3.2.2. Policy framework

The president, through its task force, is the main body to which general programme concerns and directional issues are addressed and it is directly responsible. Political decisions were still simply extended from national- thru the recognized institution at the regional level- to the local levels; the firmness or 'exclusivity' of its system made its previous programs beyond the reach of its society. There was little space for civil society and almost no tolerance for advocacy nongovernment organizations (*Asian Development Bank, 2013*). In spite of this system, the programme was able to pool knowledge and economic resources from international actors such as World Bank and JICA.

The river rehabilitation secretariat serves as the regional agency of the central government and the DENR to exercise their policies in local level; and to effectively implement , several ad hoc group of subject matter experts working together to achieve the goals of the central

government. According to Richard Helmer (1997) they hold a vital link between the RRS and the different offices of the partners as represented by their coordinators from different water-related issues.



(Diagram 3.1) Source: Author’s elaboration, 2013

The Pasig River Development Plan had span of 15 years (1993 to 2008) to fully rehabilitate the river with the following agendas: Information and advocacy campaign (including clean-up activities); relocation scheme; and urban renewal of riverbanks.

- Information and advocacy campaign (including clean-up activities):** Firstly, it started with information and advocacy campaign to raise sufficient support from its communities, business sector, schools and the likes, and to promote its renewed programmes to a much wider audience waste management was carried out through clean-up project and intensive awareness within the riverside communities to motivate themselves to proper waste management. Knowing the failure of previous attempts of river rehabilitation due to recognized lack of support from non-state actors, the renewed institution established a public information and activation unit.
- Relocation scheme and Urban Renewal Areas (URAs):** So as to entirely rehabilitate the river, the plan mechanized a massive relocation program for the families that lived along the river. An estimated of 10 000 families were relocated to off-city sites;

but about 20 percent of these families returned back to the metropolis for economic reasons. Accompanied with resettlement scheme are urban renewal projects to boost the dereliction of economic activities in riverbanks.

Shift of organic pollution in the river system in the last 20 years

Year	Domestic	Industrial	Solid
1990	45	45	10
2010	60	35	5

(Table 3.1) Source of figures: Imelda Baleta, 2009

- **Waste management:** One of the successful activities was the shift of organic pollution load in Pasig River. With the waste minimization and waste water collection projects of PRP, industrial waste generation was reduced and garbage collection in the river becomes more efficient. More so, with the heightened provisions in industrial activities many plants abandoned riverbank areas to move outwards the metropolis.

3.2.3. Deinstitutionalized framework

In 1999, the then President Joseph Estrada established the PRRC (Pasig River Rehabilitation Commission) to replace the old PRRP with a higher and complex responsibility but with the same power as the previous action force. The revolution to a river rehabilitation commission grants them a certain power to effectively carry out specific duty. In parallel, its organizational structure has changed - through a memorandum of agreement for establishing and planning a system for the inputs of each agency – largely because of its recognition of much-needed economic assistance and manpower to keep its programme sustainably moving.

B. Guy Peters suggests that institutions may deinstitutionalize, and become less autonomous, or less coherent. These changes in the attributes of institutions may predict something of their own behavior, as well as their effects on policy. Another aspect of institutional change is changing the content of what institutions do, or what they believe.

With the change of its structure, the commission changes as well its goal to elevate even more the urban quality of river life, firstly, by creating a high level of public awareness and expand public support for a complete success of the program. Therefore, the commission has engaged in a much stronger and wider public-private partnership. It has been cited by Ingemar Elander from the Partnership Agencies in British Urban Policy (1995) book of Bailey et al, that partnership is “a coalition of interests drawn from more than one sector in order to prepare and oversee an agreed strategy for the regeneration of a defined area”. The partnership then has lead to paving the way for a non-state actor to the very top responsibility.

3.2.4. Asian Development Bank-Pasig River Rehabilitation Commission collaboration

Policy Framework

As Asian Development Bank suggests, the changing political landscape partly keeps the country to struggle on improving environmental situation of the Pasig River; therefore, the shift of the programme may be associated with national transition, which takes place in the same year, to demonstrate a more strengthened and determined river rehabilitation agenda. In order to do so, the administration sought technical and financial assistance from Asian Development bank through a policy loan in 2000 which ended up both actors to a profound collaboration through Pasig River Environmental Management and Rehabilitation Sector Development, a revised policy plan of the Pasig River Development Plan (PRDP).

In 2000, PRRC received a \$176-million integrated loan package from the Asian Development Bank mainly to finance a part of its rehabilitation scheme. The policy has 15-year development plan (2000-2015) to improve environmental management of the river basin within Metro Manila, particularly for wastewater management and promoting urban renewal. All cities and municipalities along the river and eleven governmental departments/agencies are indirectly involved (*Dennis Murphy, Tedy Anana, 2004*). The development plan has started the rehabilitation of the entire river system by starting on the areas where source of pollution comes from, the small esters and creeks. At present, they have already rehabilitated three out of the 16 polluted esteros near the Pasig mainstream.

The development plan contains an integrated policy reforms and investment projects with sub-policies to improve river's entire ecosystem which includes social development for affected communities, economic development of riverbanks and new urban quality of river life, and lastly, ecological betterment of river's water quality⁴:

- Establish and develop 10-meter wide environmental preservation areas (EPAs) along the riverbanks
- Upgrade infrastructure and provide municipal services and facilities in urban renewal areas adjacent to EPAs
- Introduce a septic tank maintenance service and provide a septage treatment facility to reduce the volume of untreated municipal wastewater being discharged into the river, and
- Eliminate the illegal dumping of municipal solid waste into the river system.

Relocation / resettlement scheme: These integrated policies begin with clean-up of tributaries that are heavily polluted by riverside communities and relocating thousands of squatter households, considered critical for delivering river rehabilitation, to new settlement areas that provide more socio-economic development such as affordable housing, economic opportunities and other development capacity support. To date, some 10 000 families (nearly 55 000 people) that lived in poor condition have been resettled off-city sites. Reports claim that whether it is voluntary and involuntary relocation, such resettlement sites in-city and mostly near-to-metropolis- locations meet ADB standards for resettlement and, in some cases, move them away from the considered 10 meter river EPA and 3 meter creeks and estuaries EPA.

PRRC also ensures that affected households are better off in the resettlement areas than in their precariously built houses by the river banks that are prone to flooding during the rainy season. However, this scheme requires an intensive dialogue on voluntary and involuntary resettlement issues with riverside communities; and by employing that effectively, it widens its options of modality through cooperation with NGOs, POs, homeowners association, and private developers.

⁴Asian Development Bank report .Pasig River Environmental Management and Rehabilitation Sector Development Program Loan

Environmental Protection Areas (EPAs) and Urban Renewal Areas (URAs): Upon resettlement, a 10-meter buffer zone of both banks of the River and 3 meters easement along estuaries and creeks are designed to increase the effectiveness of abatement of dumping solid wastes into the river and secure protection of riverside communities. EPA or Environmental Protection Areas are considered as open areas for development of parks, walkways and greenbelts and urban renewal of ferry mass transit along the riverbanks. Clearly, in order to attain such water development a massive population transfer is a necessity. On the other hand, maintenance of EPAs infrastructure highly depends on the actions taken by the responsible local government units (*PRRC, 2006*) so it requires a strong participation from local level.

Community-based waste management: Lastly, in order to influence riverside communities on sustainable practices, community-based solid waste management scheme is being employed to address problems of proper waste management. Intensive awareness-raising campaigns are being carried out in riverside communities to motivate them managing and recycling their domestic wastes. So as to stimulate, Material Recovery Facilities (MRFs) are proposed to be assembled in 10 strategic riverside areas; such machine transforms city/municipal wastes into useable and marketable resources, while contributing to reduction of pollution, conservation of energy, creation of job and business opportunities, and improvement of health conditions in the community (*Imelda, Baleta, 2009*).

3.3. Shift in roles and positions: Towards innovation?

In the context of institutional re-arrangement of PRRP, corporate sector has come into play as a crucial actor in governing the structure through an amendment that permits them to coordinate rehabilitation programme. In line with the change of political landscape in the year of 2010, the commission has delegated its leadership to Regina Lopez, uncategorized actor either a corporate or civic actor, and development partners with both state and corporate sector. We shall define her profile not to question her credibility but instead to analyze re-arrangement of PRRC and its strategic framework.

The leader's profile is unclear whether it is a legitimate civic actor or it is a mere shadow of corporate social responsibility. While on seat in the institution, she, for the longest time, leads a program of ABS CBN civic foundation, the largest television network in the country

that is engaged in rehabilitation and disaster risk reduction projects that are able to pool economic resources from corporate sector and donation from the ADB. Although she is a known social-impact environmentalist in the country, her civic legitimacy Lopez is debatable largely because she, apart from leadership in a civic foundation’s program, comes from the family who owns the media institution and other business conglomeration in the country. Several reports say that it is just a mere image branding but other says it is a pure civic work. Nonetheless, this shift of position has become a big benchmark to deinstitutionalize the organization and responsibility to non-state actor.

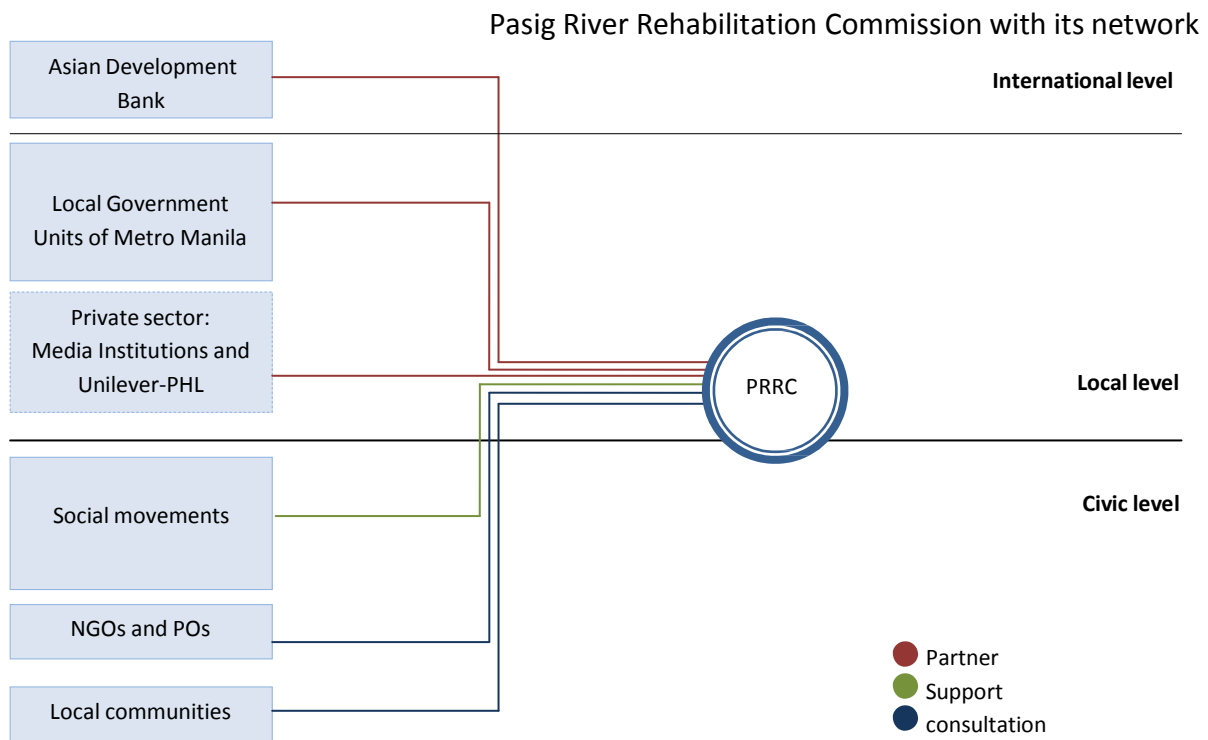
With her presence, it serves as a key factor in the effective promotion of the rehabilitation and efficient human and economic resources pooling from state and non-state actors. Lastly, In light of the governance system in the Philippines, it has a habit of changing priorities with every presidential administration (*Richard Helmer, 1997*) so the effective way to ensuring continuity of the programme is by significant engagement of a non-state actor.

As just mentioned, the institutional re-arrangement of PRRC brings together multi-sect oral stakeholders to come into play in various factors; the collaboration has grown to a much wider state and non-state actors’ network which is listed below. Looking at the conceptual definition of the term ‘collaboration’, the multi sector of actors’ presence in the programme may be discuss into three different view.

Actor	Type
President of the Philippines	Politicians / Bureaucrats
Department of Environment and Natural Resources	Politicians/ Bureaucrats
Pasig River Rehabilitation Commission	Politicians/ Bureaucrats
Mayor’s League of Metropolitan Manila	Politicians/ Bureaucrats
Asian Development Bank	Expert/ Special Interest
Private institutions: (ABS CBN TV Network, GMA TV network and Unilever-PHL)	Special Interest
Sagip Pasig Movement and Clean and Green Movement/consortium of universities	General Interest
NGOs: Urban Poor Associates / CO Multiversity /Community Organization of the Philippines Enterprise among others	General Interest
Peoples Organization	General Interest
Local communities	General Interest

(Table 3.2) Source: Author’s elaboration, 2013

The collaboration of the state actor with giant media networks and a number of environmental movements can be regarded as a tool for them to become part of a working entity with a shared purpose and most probably the easiest way to communicate to the public. As the UNDP Capacity Development group states, media can serve as a vehicle for education regarding public procurement, informing the general public on procurement systems, rules and regulations and principles.



(Diagram 3.2) Source: Author's elaboration (2013)

The presence of ADB, as a facilitator and at the same time an expert, in the constellation of actors is very inevitable for the fact that a large amount on pooled economic resource comes from them. With its involvement through its policy loan, ADB has drawn the lion's share of attention from all types of actors, for an instance NGOs and local communities, with respect to its genuine goals. The motivation tool of ADB can be seen as a form of driver to gain much wider consensus of actors in the development and more importantly to drive the development towards sustainable development. As a conclusion, the role and essence of ADB is very crucial not only on execution and realization of the programme but also on maintaining a policy that is sensitive to the interests of affected communities.

Mass media, as a social institution, is able to draw massive public attention as well as to heavily influence social issues in public minds. In addition, there is a large body of evidence on the media's ability—or inability—to change opinions (*Bryant and Zillmann 2002; Hornik 2002*). Looking at the local context, Media in the country is highly appreciated by its society and greatly influenced their lifestyle; as studies reveal, media may lead the entire country if it were a form of a government. While it is the easiest way to disseminate information and knowledge through these non-state actors, in some instances, particularly the media institutions and Unilever-PHL, may be a tool to partly pool economic resources.

3.4. Civic engagement to the state's initiatives

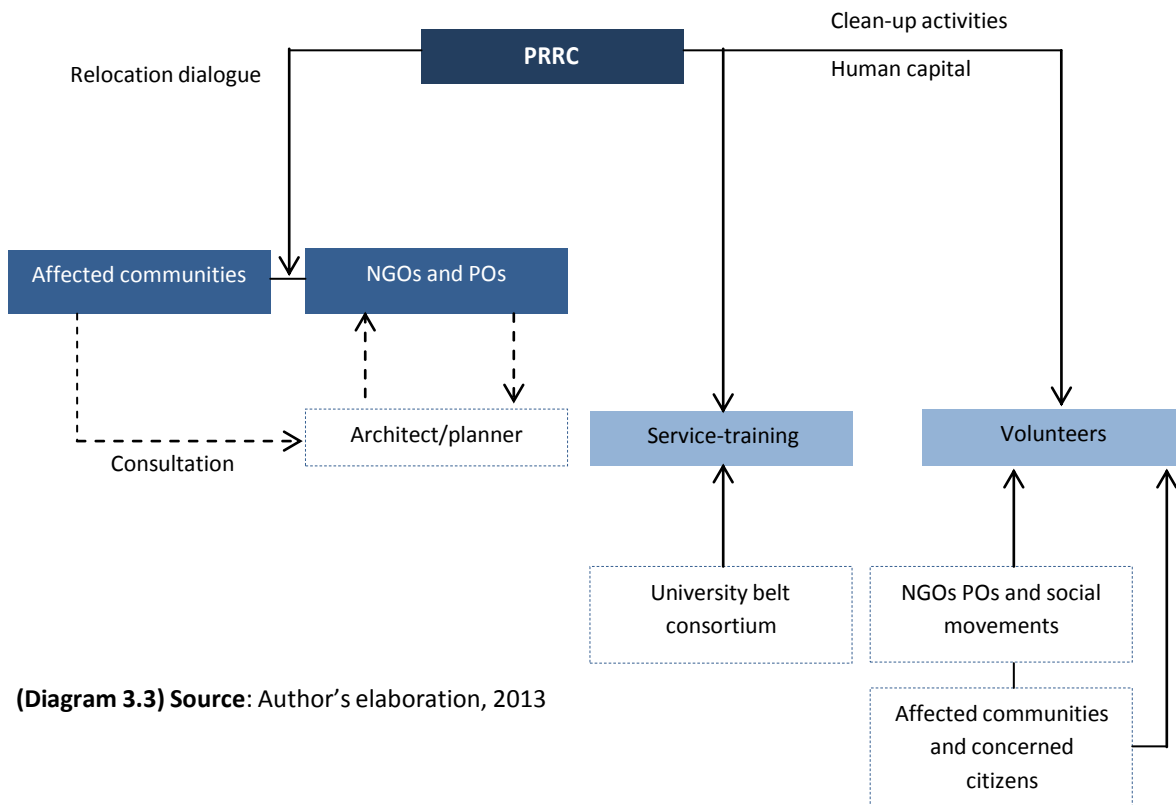
The consultation tool of PRRC is regarded as a bridge by a number of NGO and local communities to come into play in river rehabilitation; however, there appears that their participation is a mere presence in sub-policies of the programme and political outcomes are far cry from being accessible by them. In particular, their presence is regarded as a tool to widen their source of human capital to execute their schemes such as in clean-up projects. Clean-up projects are done through collaboration also with private actors and other civic actors such as students for their service-training and other concerned citizens as volunteers.

With respect to resettlement issues, aside from NGOs and POs that back up some local communities in opposition to relocation scheme, a known architect/planner 'expert' strengthens their opposition through an on-site design housing program. It is a clear strategy to persuade the institution to reconsider and influence political outcomes in relation to relocation scheme.

In the case of relocation scheme, it is inevitable to received strong oppositions from the local communities. With respect to their socio-economic status, a high number of them study and work within their communities and within the city; big number of this employed population earns in the informal sector. Relocating them outside the metropolis will heavily affect their economic capabilities; loss of 'sustainable' jobs; and loss of immediate education services which may lead to malnutrition. So far, negotiation takes place in order for them to voluntary resettle in neighboring provinces that do not have capacity to provide mass

employment. In any case, their participation is limited to such activities and, the study believes, they are just a mere receiver of actions or contributor to implementation of policies extended from higher authorities.

Civic engagement to PRRC's programme



(Diagram 3.3) Source: Author's elaboration, 2013

3.5. Non-state's initiatives

Generally speaking, civil society in the country is widely seen as one of the most vibrant and advanced in Southeast Asia, which engages constantly with government and has achieved some notable successes. The country has the largest number of NGOs per capita in Asia, and many believe that if civil society has contributed to democratization, it is in Philippines. The government has always maintained openness to civil society. However, the democratic space for them has been expanded or constricted depending on the inclinations of those in power, the general political conditions, and the positioning of CSOs with the incumbent political leaders, among other factors (ADB, 2013: 2).

Their importance and high visibility are acknowledged by various organizations and individuals from all parts of society including the government, media, churches, citizens,

scholars, foreign governments, foreign NGOs and international organizations. The presence of civil society in the river rehabilitation context has been very reactive to political and social processes in the last decades. As any other NGOs worldwide, non-state organizations are very limited to economic resources therefore they employ several measures to achieve their goals through partnership with corporate sector.

Corporate sector working in cooperation with non-profit sectors to find collective solutions to common problems has been an increasing trend globally. NGOs, generally, do not have the means and resources to carry out their projects efficiently in a sustainable manner and often overlook by public sector in the issues they are advocating but they become an instrument by corporate sector to carry out their corporate social responsibility to influence various stakeholders with their capital and efficiency in a positive way. Both, in a way, complement each other with their own goals. In parallel with the government's river programs, private institutions with the help of NGOs initiate several projects related to the river rehabilitation. These two non-state actors realize that the only way to achieve their individual goals is through cooperation with each other. For the longest time, both non-state actors conduct small clean-up projects and community-based management training in colonies of squatter near the river system. Clean River Zone was one of the notable programs that both non-state actors (Unilever- Philippines and Sagip Pasig Movement) were in cooperation.

Corporate social responsibility

Image 3.4



Environmental stewardship 'One Run, One Philippines' Run for Pasig River

Moving forward, Higher Education Institutions (HEIs) have as well started their own initiative with the acknowledgement of PRRC. The University Belt (U-Belt) consortium is a group of thirteen higher education institutions committed to cooperate on programs based on the principle of reciprocity through academic researches on water quality and community-based programs. In this scene, PRRC appears as a cooperating agency only to seek solid scientific basis for laying down clean-up and restoration options for the Pasig River. In spite of the promising initiative and potential role of HEIs and partnership, non-state initiatives remain unsustainable simply because their development partners, government support and political legitimization tend to be episodic with respect to continuing such initiatives.

3.6. Key emerging issues

3.6.1. Inconsistent political landscape

As the author mentioned earlier, the country appears to have habits of changing priorities every presidential administration that makes its framework of governance susceptible to sustainability of the project or any long-term projects. While it is inevitable for every administration to have different agendas, in this very specific case, a continuous and sustained political support is a necessity to lead and direct its agenda. The reliability of political actors makes the project widely legitimate and builds public trust. Therefore, it is a daunting task for the Philippine government to sustain political support and environmental stewardship for the project despite transition to new administrations.

3.6.2. Less committed riverside local government units

Riverside local government units often struggle on their specific task within the programme primarily because most of actors that have been and currently involved are politically and financially powerful, and the formulated policies are often crafted by higher authorities and just extend to them; having said so, they acknowledge the fact that they are weak in technical capacities and limited in financial assistance to actively support such large scale policies. As a result, such factors heavily influence how they carry out and look after the policies within their jurisdictions. The participation of local governments units appear to be 'just for the sake of cooperation' but in actuality they opt to work independently for

riverside developments because of slow progress in priorities of the program and political actors.

In relation to local authorities and local communities' link, according to Denis Murphy, local authorities are as well less supportive when it comes to discussing with non-state actors about infrastructural provisions. Undoubtedly, there is a need to a clear identification of the local government units' specific role in the project as well as a strong mobilization and technical assistance from higher authorities otherwise they will remain a mere receiver of actions or policies and completely abstain themselves from the programme.

3.6.3. Undervalued civic engagement

For the past years the role of civil society has been less highlighted on what they can contribute over the river rehabilitation program. According to Asian Development Bank (2009) unsubstantial role are often given to non-state actors particularly to poor people. In fact, their very community involvement and participation in clean-up schemes are even unsustainable. Decision-makers tend to lessen civic participation in a larger scale primarily because it generates more complex issues that have to be address and increases their costs in collaboration.

What happens usually is that communities merely receive basic urban services and implemented action, and often ignored on what they can do because they are only seen as an actor that can contribute very little and would rather wait for someone to extend their hands. But looking closely at the case of river restoration, it is the local communities that can best provide knowledge and experience as they are the chief actors causing pollution in the river; these communities play a significant role both in shaping problem and solution to the river's condition. However, even other civic actors seem to be underrated.

The engagement of civil society is an essential ingredient for overcoming environmental management challenges. There is a need to involve civil society in the programme and be provided a substantial role and voice in its decision making processes as their involvement is a vital need to ensure its sustainability.

4.0 Review of related Case studies

4.0.1 Introduction

In line with the foregoing discussion, this section focuses on using three models from Southeast Asia and Africa to take full advantage of their exposure in different issues. They are considered with reference to their known public participation, implemented programmes and diversity of actors involved, and environmental governance approach which are considered being graspable enough for the local context in Philippines.

The case studies also characterize particular feature that emphasizes their similarities to the context of Pasig River Rehabilitation. In particular, this section discusses water governance through the lens of Nairobi River in Kenya, Ping River in Thailand, and Mekong River in Mainland Southeast Asia; their physical, socio-political and geo-political contexts are relatable to that of the actual case which is regarded as very crucial to better understanding complexity of water-related issues.

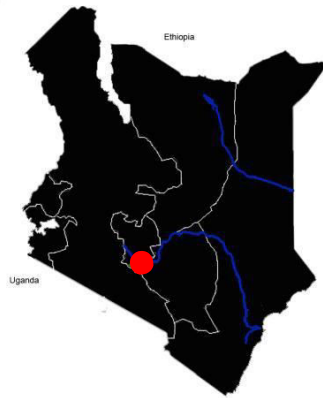
Case study 1: The Nairobi river rehabilitation in Kenya

4.1. Nairobi city and its river basin: Basic identification

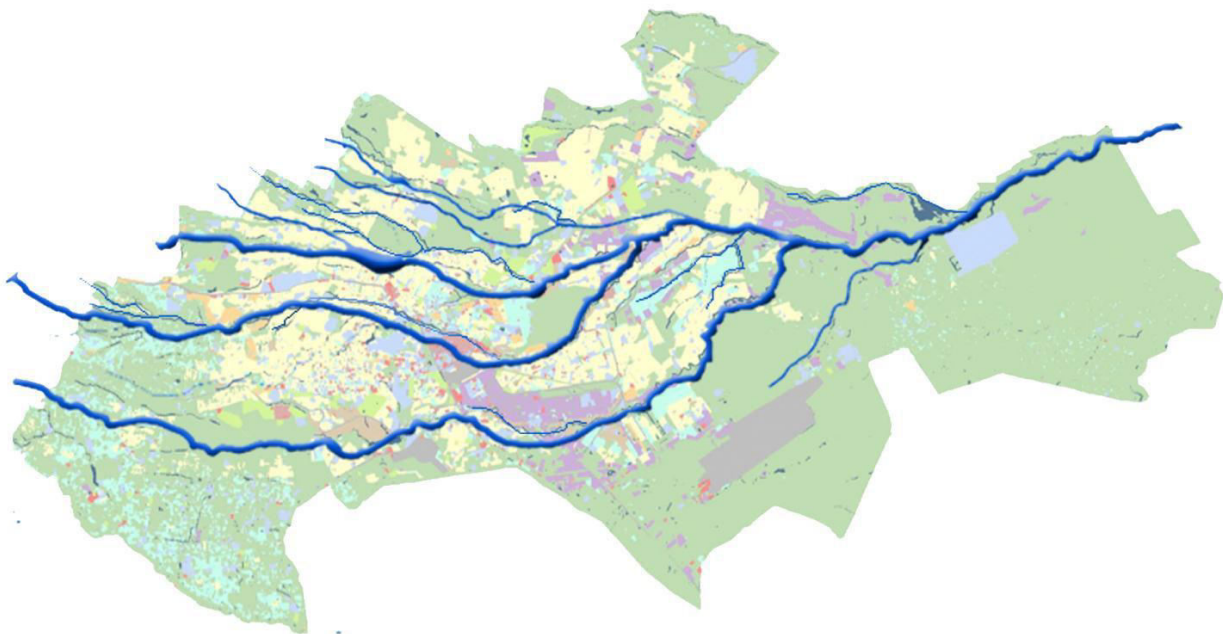
Nairobi is the capital city of Kenya and Capital of the Administrative Area of Nairobi Area. It has the highest urban population in East Africa, with an estimated population of between 3 and 4 million (according to the 1999 Census, in the administrative area of Nairobi lived 2,143,254 inhabitants within 684 Km²); an estimated 45% out of it are youth. Since its foundation as a railway camp in 1899, Nairobi has grown to become the largest city in



Map 4.1.1 Africa



Map 4.1.2 Location of Nairobi in Kenya



(Map 4.1) Source: Center for Sustainable Urban Development, 2010

Kenya, and one of the largest cities in Africa (*UNEP*). The immense growth of the city surpassed the rate at which its basic services and infrastructures is developed for the needs of its growing population; population boom, rapid urbanization are putting enormous pressure on the river basin that serves as the main source of its water supply.

Historically, rivers in Nairobi played a key role in the emergence and development of Nairobi as an urban centre. One of the reasons why Nairobi was chosen a suitable stopping place by the railway builders in 1899 was the cool clean water. The rivers of the basin join at the east of Nairobi City and meet the Athi River that flows directly towards the Indian Ocean. Nairobi

River, which is the main river of the Nairobi River Basin, traverses through the entire province of Nairobi; it is largely narrowed and partly canalized for economic activities.

The present condition of the river is the result of the negligence and abusive actions of the city population and its institutions. As Mathieu Merino suggests, activities along the river is done with total disregard for environmental and sanitary regulations. Pollution is partly caused by the extensive use of its waters and banks by the urban poor particularly low-class and informal settlements characterized by scarce resources of land, municipal services and money. He adds that the large quantity of wastewater in the city is not adequately treated; aside from to the fact that it does not even reach the sewer line due to its defectiveness.

The condition of slum areas posts incredible socio-economic dilemmas both to the municipal and the families that exacerbate negatively their behavior towards the river. Rivers have become an integral part of numerous activities by slum inhabitants, small farmers and informal workers several informal and low economic activities such as car wash and urban agriculture located near the river look at the river as an open dumpsite and sewerage area where they can use without limit.

4.1.1 Core of the problem

Limited institutional capacity

Single-issue oriented approach: Resource management in Kenya is largely sectoral, that is with specific resources governed by specific acts; by and large, it means that a specific sector may not necessarily take into account an interfering factor that may fall outside their mandates or rules due to their single-issue oriented approach. For an instance, the water resource is foreseen by a Water Act while the agricultural land is governed by an Agricultural Act. There is no institutional framework that deals with environmental management in holistic approach. The single-issue oriented approach is very critical in the overall management of the natural resources as it may post difficulties in enforcing such laws or framework.

Given the sectoral approach in policies, there is a long standing lack of political interest in environmental concerns. The country of Kenya faces a huge problem in relation to source of potable water; thus, the government concentrates of protection of water bodies as a source

of potable water (Matthieu Merino, 2010). On top of that, there appears that the Institutional bodies in Kenya are incapable of policy implementation largely because it may jeopardize and constraint their economic interest and financial capital that often come from river activities particularly the booming car washing activities.

4.1.2. Policy framework

The environmental Management and Coordination Act, 1999 paved way for a wider environmental management framework or a holistic approach of environmental management leaving behind the single-issue oriented approach of management. The Act employs two institutional bodies with different defined functions; The National Environment Management Authority (NEMA), whose function is to coordinate environmental activities, and the National Environment Council whose function is to formulate environmental policies. In order to be tightly regulated, the act requires an environmental impact assessment prior to issuing an environmental license.

In spite of the milestones created by the NEMA to the government of Kenya, the act faces several issues in accordance to the efficiency of its regulations. There is a struggle of acceptance between the regulations of the act and its society; the people strongly rely on the standards made by WTO which in turn makes NEMA's regulation inefficient. But the real issue concerns the environmental management's actors⁹ (Mathieu, Merino).

4.1.3. Nairobi River Rehabilitation Programme

It is an institutional program that is initiated by the United Nations Environmental Programme (UNEP), with a little participation of NEMA, in 1999 that brings together multi stakeholders – UNEP, UN-habitat, UNDP, government of Kenya, private sector and civil society- into a collective environmental action. The main objective of the Programme is to rehabilitate, restore and sustainably manage the Nairobi River Basin in order to provide improved livelihoods, enhance environmental quality and values through well regulated economic and recreational ventures.

The theme of the programme is social inclusion: As the UN-habitat suggests, social inclusion targets those vulnerable groups in society who find themselves marginalized – the urban poor, and especially women and young people and work closely with local authorities, non-

governmental organizations, youth groups, governments and municipalities to promote better urban life opportunities.

Actors involved

UNEP, being the promoter as well as the expert for the problem, initiates a program that aims to involve multi stakeholders in its policy implementation. However, this initiative by an international intergovernmental organization reflects how the government of Kenya remains incapable in determining solutions to the complexity of its environment. UNEP, as a UN agency, is equipped with cognitive and partly of economic resources to embark on the program to influence the government of Kenya to adopt the policies of the program for a long term river solution.

Actors	Type
Central Government of Kenya	Political/ Bureaucrat
Nairobi City Council	Political/Bureaucrat
NEMA	Political/ Bureaucrat
UNED	Expert/General interest
University of Nairobi	General Interest
African Water Network	General Interest
Pollution Water Network	General Interest
Private partners	General Interest
NGOs (Kibera Slums Youth Development Programme, Women Rights Awareness Programme, and Children Legal Action Network)	General Interest

(Table 4.1) Source: Author’s elaboration, 2013

So as to conduct river studies, UNEP contracted African Water Network to embark on an assessment on the status and impact of pollution on the Nairobi River Basin, together with UN Habitat. Moreover, the quest to engaging variety of stakeholder has brought both state and non-state actors to come into play; therefore, with the strong presence of UNEP, a well-built network of both state and non-state stakeholders has been established. Pollution Water Network, a network that handles the second phase of the programme, members includes Network for Water and Sanitation (NETWAS), UNEP, Nairobi City Council, UN Habitat, IUCN –the world conservation union, and the University of Nairobi. Lastly, in order for UNEP to establish pilot projects in several areas in the river, the programme has

expanded the density of actors with the involvement of NGOs that advocate women and youth empowerment, and some private sectors, and the government of Kenya.

Conceptual approach: ‘ecosystem’ approach

According to Fiona Miller & Philip Hirsch (2003), the adoption of an ecosystem approach to river basin management challenges the traditional dominance of engineering and technical sciences in basin management through its recognition of the value of the contributions of ecological sciences (Newson 1997), as well as the social sciences to our understanding of the interconnections between environmental and social systems. The increasing public involvement in matters pertaining to rivers and watersheds has contributed to an associated shift in the knowledge base for decision making.

4.1.4. Implementation process

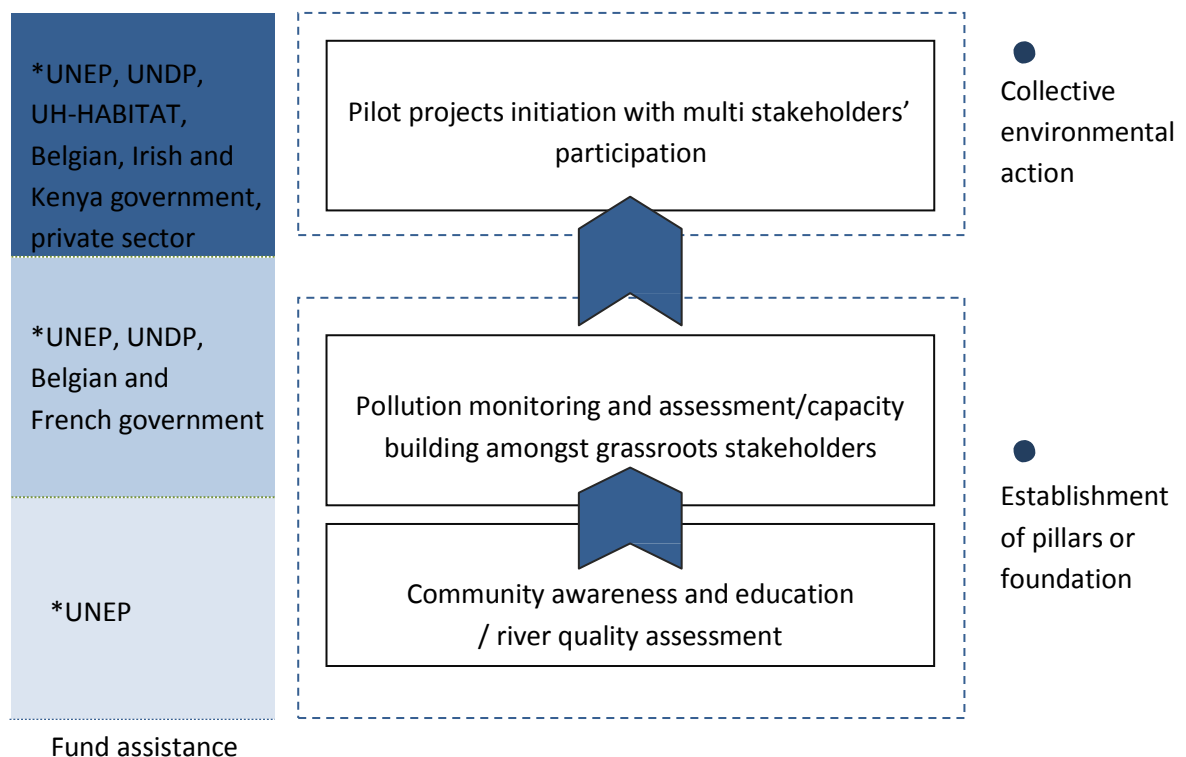
The programme is divided into three-phase actions; Phase I (October 1999 to March 2000) constituted a situation assessment of water quality, a preliminary public awareness and education campaign, community outreach through pilot income generation projects, and capacity building amongst stakeholders. It also developed an Environmental Management Information System Phase II (June 2001 to December 2003) was a pilot initiative focusing on a tributary of the Nairobi River system. The aim of this phase is not only to address the problem of pollution in Nairobi’s rivers but also to put in place community education and information programmes to enable capacity building amongst key grassroots stakeholders (UNDP-kenya report); and Phase III (January 2005- December 2008) deal with garbage collection, a pilot phase involved the rehabilitation of a particular 2.5 kilometers stretch of Nairobi riverside (Mathieu Merino, 2010).

Phase I	Phase II	Phase III
UNEP African Water Network UN-Habitat	UNEP Nairobi City Council UN-habitat, IUCN, The World Conservation Union and University of Nairobi	UNEP Government of Kenya Private sector Non-Governmental Organizations

(Table 4.2) Source: Author’s elaboration, 2013

The phases I and II are clearly to set a strong foundation and pillars by enlarging the network of stakeholders and galvanizing local institutions to be involve in the project. With the span of 5 years, the programme aims to establish a number of stakeholders involved that may help sustain the long-term integrated management approach of the river, particularly from the multi lateral institutions. The last phase, which is according to UNEP, was designed to become a model for environmental action at the national level by bringing together UN agencies, governmental authorities, the private sector and the civil society through partnership.

The dynamics and complexity of the programs including the involvement of multi stakeholders demanded a huge amount of assistance from various public and private institutions. The total financial assistance of the three-phase programme of Nairobi River rehabilitation was approximately 6.6 million US dollars and each phase acquired fund assistance from different partners with the consistent support from UNEP; The first phase was entirely funded by UNED; the second phase was funded by UNEP together with UNDP, and trust funds from the government of Belgium and France; and lastly the third phase was funded by multi-sectoral donors such as trust funds from the government of Ireland, Belgium and Kenya, UN HABITAT, UNDP and private sector.



(Diagram 4.1) Source: Author's elaboration, 2013

4.1.5. Reception by its government

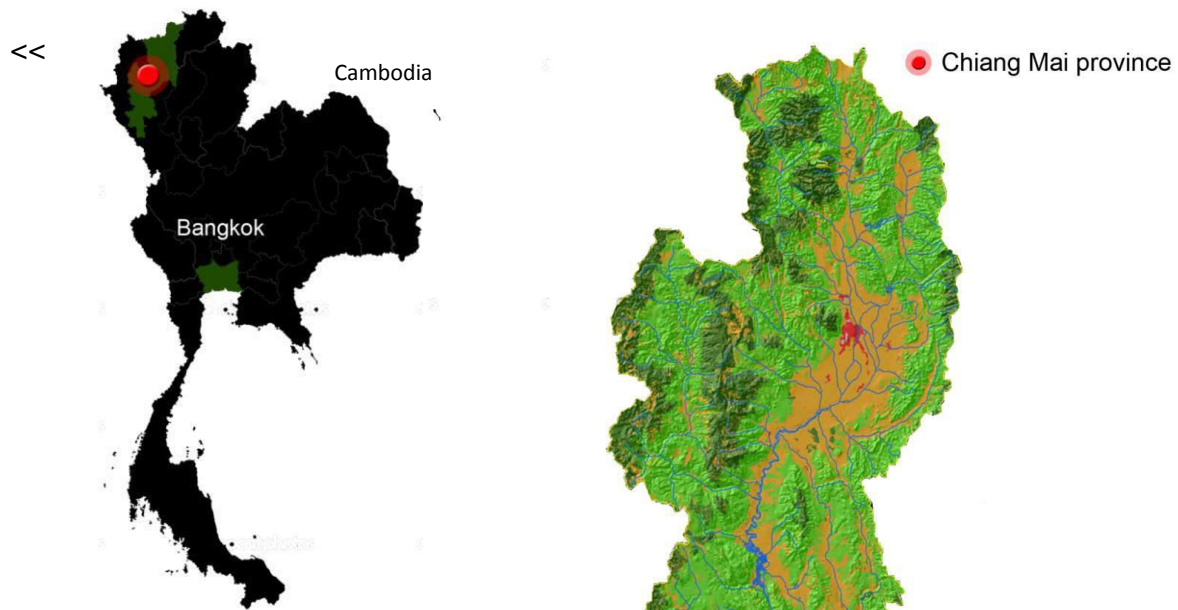
Although the Nairobi River Rehabilitation Program has become successful in aiming its goals to bring on together multi stakeholders in the project, to establish pilot projects for the government of Kenya to replicate, and increase the urban quality of life through re-newed water quality of the river, the government of Kenya particularly its local government units fail to continue the success of the pilot projects of the programme. Alphonse Magati's underlines, after sections of pilot projects the overkill of the river livelihood begins; the automotive garages, car washes, illegal sewage discharge, solid waste dumping take over the river. Clearly, the government of Kenya has not sustained the efforts and goals of the programme largely because they still remain financially and technically incapable, despite the substantial efforts and support especially from UNEP, and arguably, environment management issues are not their primary concern.

4.2. Case study 2: Ping River Restoration, Bangkok

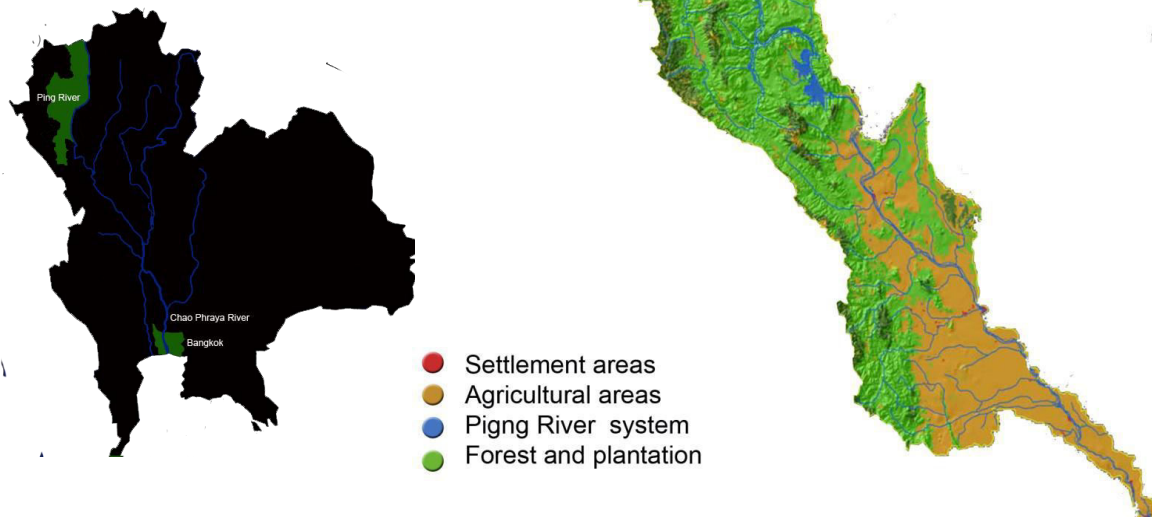
4.2.1 Bangkok and Mae Ping River basin: Basic identification

Thailand is located in the mainland southeast region of Asia that borders the upper region of Malaysia and the western region of Vietnam. The country is recognized as a Newly Industrialized economy largely due to economic development that takes place in the country in the last decades. Land and water forms in Thailand are extremely abundant. The importance of rivers and symbolism of water for the Thai people are greatly associated with their local identity, economy and more importantly culture. The birth place of Thailand's culture comes from Mekong River system, a major trans-boundary river in Southeast Asia region, which has since been their primary source of water for livelihood and staple foods – rice and fish, transportation, festivals, rituals, and commerce. Water is the paramount of everything and the very core meaning of ways-of-living in Thailand (*Steve Van Beek, 2000*); it is known for its long standing tradition of river tourism particularly in its major cities such as Bangkok; and it is remarkably famous for its floating markets across the region where thousands of tourists flock to experience its ever unique form of public markets.

Map 4.2.1 Chiang Mai location in Thailand



Map 4.2.2 Chao Phraya River system



(Map 4.2) Source: Author's elaboration (2013) and MoNRE (2005)

Chao Phraya system traverses through the center of Bangkok and then into its lower region which is the gulf of Thailand. It is considered to be the major water way in Thailand for its socio-economic importance. The river system is considered to be an important socio-economic hub of the country largely due to: as estimation, it covers approximately the 30 percent of the country's land area and is home to about 40 percent of its total population. It also employs more than 65 percent of the total work force, and generates about 75 percent of Thailand's Gross Domestic Product. It consists of eight major river tributaries that run the entire region of Chiang Mai; the largest among the river tributaries is the Mae Ping River.

The Mae Ping River, one of the 4 major tributaries of the Chao Phraya River, is a main river which provides water for livelihood to northern and central regions of Thailand with the length of about 740 km; it joins the Chao Phraya River and subsequently drains into in southern area of Bangkok. Ping river basin covers approximately 7 percent of the total land area of Thailand (*MoNRE, 2005*). The river passes through six major northern region including Chiang Mai – the largest and culturally significant in the northern region of Thailand- which houses nearly one million populations; In addition to its physical setting, forest areas of the six regions share approximately 60 percent of the total land of the northern region while the remaining constitutes largely of agricultural plots and small towns and municipalities. For its environmental protection; continuous exploitation of natural resources to meet the and hotels. Furthermore, very weak planning and regulatory mechanism that are easily overcome by the wealthy and powerful aggravates severely the condition of the river.

4.2.2. Core of its problem

Gap between actors' environmental interests

The critical use of Mae Ping River has long been the main issue amongst the actors with stake on it; state and non-state actors' interest clash on how to restore and manage the river. On the one hand, state actors – local authorities – continue to exploit the river as they allow rapid commercialism in the region over the last decades to benefit from the rapid urbanization in the country. On the other hand, non-state actors – local communities (affected and concerned citizens) advocates the restoration of the river from the degradation it receives from the advancement of development near and along the river. This is true on the argumentation raised by Jens Newig and Oliver Fritsch that actors living in close spatial proximity to a natural resources tend to favor its economic exploitation, where as living farther away tend to favor its conservation.

The serious gap between these problems with natural resource management could be effectively addressed when it is arrange at the local levels. As MoNRE report (2005) testifies, higher level government leaders and technocrats have long recognized the importance and difficulty of achieving cross-agency coordination, as well as needs for decision making that could more effectively address the diverse range of needs of communities in different parts of the country. According to Jess Ribot, decentralization

reforms change the institutional infrastructure for local natural management and, in some cases, and create an institutional basis for more popular and participatory management and use of natural and other public resources. Therefore, the decentralization reform brings staff from various central agencies into administrations at provincial and district levels that collaborate with various actors in natural resource decision making processes to ensuring institutional accountability and effective representation of public issues.; and such a process empowers other groups to come into play in local arena such as membership organizations NGOs, single purpose committee etc.

Strong local initiatives: local-based network building

Local communities with NGOs: There is a growing public awareness relating the negative impacts of advancement of economic activities in the region that Mae Ping River traverses. It started in early 1990s when concerned citizens and institutions formed collectively to advocate river awareness in the region. Many have begun to invest considerable effort to develop 'peoples organizations' based largely on informal networks among local communities, and some are developing broader alliances across networks. More astute government agencies and urban-based NGOs have seen the important potential of these networks, and have begun to seek ways to support and facilitate their further development (*MoNRE, 2005*). Furthermore, these communities and groups in various regions have started building organizational capacities with other communities to manage themselves for their local portion to sub-basin levels.

4.2.3 Policy Framework

In this part, as the issues related to Mae Ping river basin are very diverse and complex, the author trims down the issues particularly related to river basin management and the participatory approach to solve the increasing environmental problems surrounding the river basin.

Among the range of environmental issues of growing concern, seasonal water availability and water quality are currently particularly high priorities for both the government and the general public. Given the perceived importance of water management to these issues, the government, through the Ministry of Natural resource and Environment, seeks to develop a

river basin management framework for encouraging, facilitating participatory multi-sectoral collaboration that is able to improve management of natural resources and the environment and to reduce rural poverty (*MoNRE, 2005*).

The establishment of river basin management which is under the Ministry of Environment and Natural Resources–Department of Water Resource is largely brought by the strategic plan for the water management in the Chao Phraya river system. As the result of the strategic plan, river basin committees were established in various regions in the country; Out of the 25 defined river basins, Ping river basin was selected as its pilot river basin because of its strategic importance in relation to resources, livelihoods and rural poverty, and because of strong concern about impacts of deforestation, soil erosion, sedimentation, water use and pollution (*MoNRE, 2005*). Therefore, Ping River Basin Restoration project was established.

Actors involved

The quest to effectively manage and restore the river has led the government of Thailand to entrust the Ping River restoration project to the Ministry of Natural Resources and Environment with the Department of Water Resources. As the goal and vision of the project to collaborate with multi stakeholders, the central ministry extends downwards the authorities to handle the river basin by establishing two committee basins – the upper Ping river basin committee and lower Ping river basin committee- that secures participation of several NGOs, local committees and citizens. In order to secure an effective and accountable decision making process through participatory management, the central ministry hired technical assistants that serves as experts in action; experts include implementation consultants (Panya Consultants Company, Ltd.), persons conducting activities on the participatory watershed management process (Wildlife Fund Thailand) and technically-skilled individuals that organize training to strengthen capacity of local communities in water resource management.

In response to the need to restore the Ping River and its environment the members of local communities near the river basin partake their responsibilities in protecting it. The “Love Mae Ping River Group” was formed in 1992 and volunteers to clean up the river and to

protect against to any damage done to the river. This major step led to the expansion of the group and into various groups; this group is initiated by concerned citizens.

Actor	Type
MNP-DWR	Political
Upper and Lower Ping basin Committee	Political
(Panya Consultants Company, Ltd.)	Expert
Wildlife Fund Thailand	Expert
Technically-skilled individuals	Expert
Chiang Mai University	General interest
CCPE	General interest
Love Mae Ping River group	General interest
Several NGOs	General interest

(Table 4.3) Source: Author’s elaboration, 2013

In 1993, the Coordinating Committee for the Protection of the Ping River Basin and Environment (CCPE) as a local based organization has been organized; it is locally know for its green advocacy. Its members consist of volunteers who are academics, teachers, students, monks and concerned people. Building on the experience of the Coordinating Committee of Ping River Basin and Environment, a large study team was assembled by Chiang Mai University under a project to develop a master plan and implementation plan for conservation and development of environmental and water quality in the Ping River and its tributaries. Both non-state actors have long wanted to collaborate with the higher authorities and bring together a unified interest on water resource management (CMU, 2004).

4.2.4. Ping River basin Restoration Programme and its implementation process

With the contribution of the Chiang Mai University at the initiation of the river basin project, the pilot project of national government was launched in 2003 to discuss the policies of the project as well as to launch united participatory efforts to raise consciousness and awareness of the value of natural resources and the importance of their role in the heritage of future generations. As Bruno Dente Suggests (2010), the involvement of experts is an obvious way to extend the field of available solutions, besides the legitimacy of the decision in the eyes of the public opinion.

The project is administratively divided into two parts according to the division of administrative units within basin system in the region; namely, Upper Ping river basin committee and Lower Ping river basin committee. They are under the supervision of Department of National Parks and Plant Conservation and Department of Water Resources, respectively. However, each committee presents different activities and approach; the Upper basin committee made considerable efforts to formulate technical plans and developments particularly small barriers 'check-dams' while the Upper basin committee launched a new round of 'participatory action planning' processes through committees and working groups under their leadership, resulting in another set of plans and projects (MoNRE, 2005).

In 2004, the project is financed by the government of Thailand thru the Ministry of Natural Resources and Environment which is estimated around THB 237.5 million or USD 7.6 million with an additional fund of USD 849 500 as a technical assistance for the participatory management of the project; Nearly eighty percent of the technical assistance was funded by the World Bank thru its ASEM II trust fund. In total, the cost of the 5-year medium rehabilitation of the river is USD 8.6 million.

The main goal of the Pig River Basin Project is to establish an effective participatory natural resource management that improves the environmental quality in the river basin; it as well aims to contribute in enhancing the livelihood and health outcomes for the people near the river.

Given that the Ping river basin traverses the entire region and covers diversity of natural element, the project activities take place in three major sub basin areas; namely upper, middle and lower Ping river basin; these sub basin project activities are subject to supervision of the hired technical consultant taken from the central ministry. The approach of participatory management with technical assistance and committees can be associated with Jessi Ribot's argument that to ensure effective local accountability central government subsidizes local authorities through delegating representatives – they often monitor and offer assistance-at the lower level, surrounded by interest groups and NGOs, and are faced with active customary authorities in the local arena. Capacity building and local lay knowledge are put into lens on how they enhance the engagement of local level to the

participatory management approach. Both help contribute to empowering the local authorities and its communities.

4.3. Case study 3: Mekong River Rehabilitation, Mainland Southeast Asia

4.3.1. Mekong River basin: Basic identification

The Mekong River is a transboundary river that is known to be the tenth largest river (4,173 km²) in the world with a total land area of 795,000 km² that traverses six riparian countries in Mainland Asia namely China, Laos, Thailand, Cambodia, Myanmar and Vietnam. The headwater of the river originates in the Tibetan Plateau (Qing Hai Province) of China flows through Yunnan province in China then forms the boundary between Laos and Myanmar, then passes through the southwest corner of Laos together with the eastern border of Thailand, and flows through the heart of Cambodia and empties out at the Mekong Delta in the south portion of Vietnam into the *South China Sea* (see map 4.1). These countries are diverse in their form of government, total area, flow contributions, gross domestic product per capita, and goals and desires for water use within the basin. The population of the basin is roughly 75 million. These people typically live in rural areas, as the only major population center in the entire basin is Phnom Penh, Cambodia and Vientiane ,Laos (*Carrie Bochenek, 2010*).

Mekong River can be divided into two main basins: the Upper Mekong River basin and the Lower Mekong River basin: (i.) Upper Mekong River Basin runs through China's Yunnan Province, which is a rapidly developing area of the country until the border of Myanmar and Laos. This section of the river system characterizes of steep and narrow catchment basin that shares 24 percent of the river's total area. Given the river traverses nearly the entire Yunnan province, the location has been a great potential of hydropower source and dam cascade developments for the northern riparian country- China. (ii.) The Lower Mekong River Basin is largely where major tributaries of the river system are located which starts in the border of Laos and flows throughout the other riparian countries until it empties out into the South China Sea. This section of the river characterizes of the major tributaries in the entire river system and, just as the same as the upper region, experiences a rapid development boom particularly in Thailand and Vietnam. The two basins of the river system

show almost similar growth in terms of technological infrastructures. The hydropower projects on the Mekong and its tributaries is viewed as one of the primary engines of economic growth for the countries while in the Lower Mekong Basin there are proposed and on-going construction of dams in one of its tributaries that are seen to be the engine of growth in the near future.

The Mekong River and its related eco-systems are still largely healthy and its water quality is good –even though there is high concentration of suspended sediments. In spite of water pollution in tributaries of the river that runs into the capital cities in Laos and Cambodia, and small towns in Yunnan province where several industrial areas are located, waste discharge is recognized as a localized condition of pollution and can generate a little immediate risk to the Mekong river mainstream; but all these economic growth and technological advancement in the river post significant threats if it is not managed properly.

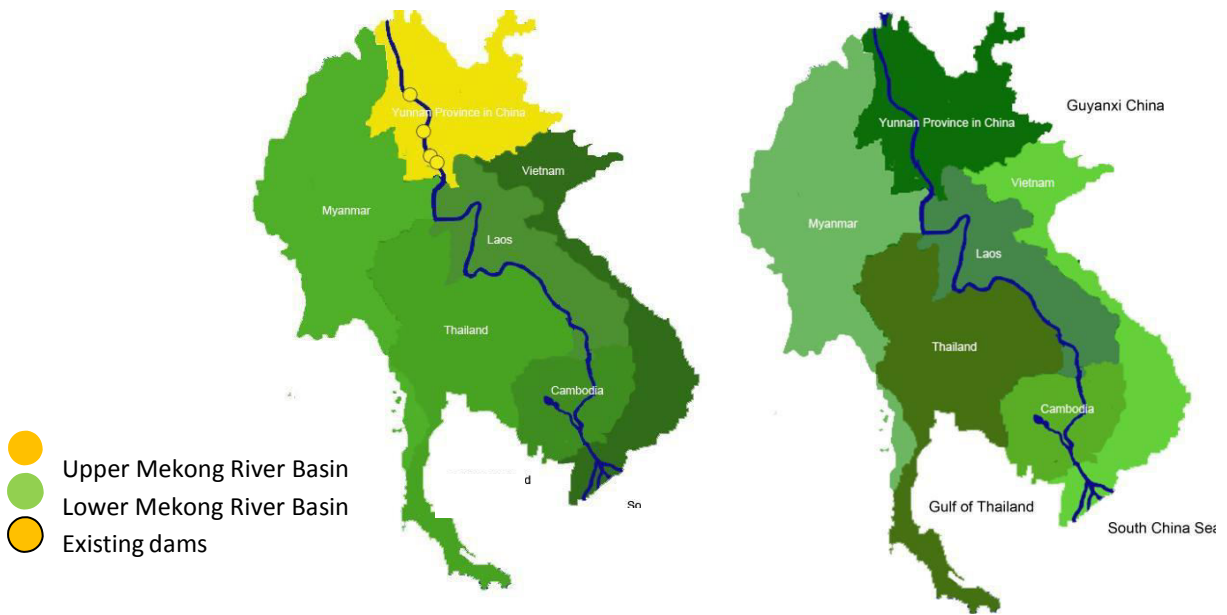
4.3.2. Core of its problem

Conflicting environmental interests and absence of ideological consensus

The very nature of the Mekong basin as a trans-boundary river compounded with the diverse political landscape of riparian countries explicitly implies of a strong and complex mesh of geo-political issues. The river basin is seen by the six countries as a common resource and not as a shared resource which, the study believes, aggravates the contentious politics and governance of the river. Each of these riparian countries is oriented towards economic growth and modernization; the political ideologies of each these riparian countries largely vary from one another; and their strong desires to use the available water in a way that is detrimental to the other whereby, to a certain extent, face an extreme rivalry concern to one another. The very specific example can be best described when any major dam development that occurs in the Mekong mainstream will dramatically affect the downstream activities and the entire ecosystem services of the river.

As the countries view the river as a common resource, there appears an emergence divergent and conflicting ‘national interests’ not just among the riparian countries but also internal conflicts and no concerted voice within these countries. For an instance, in Yunnan province in Southwest of China, there appear different preferences from different levels of

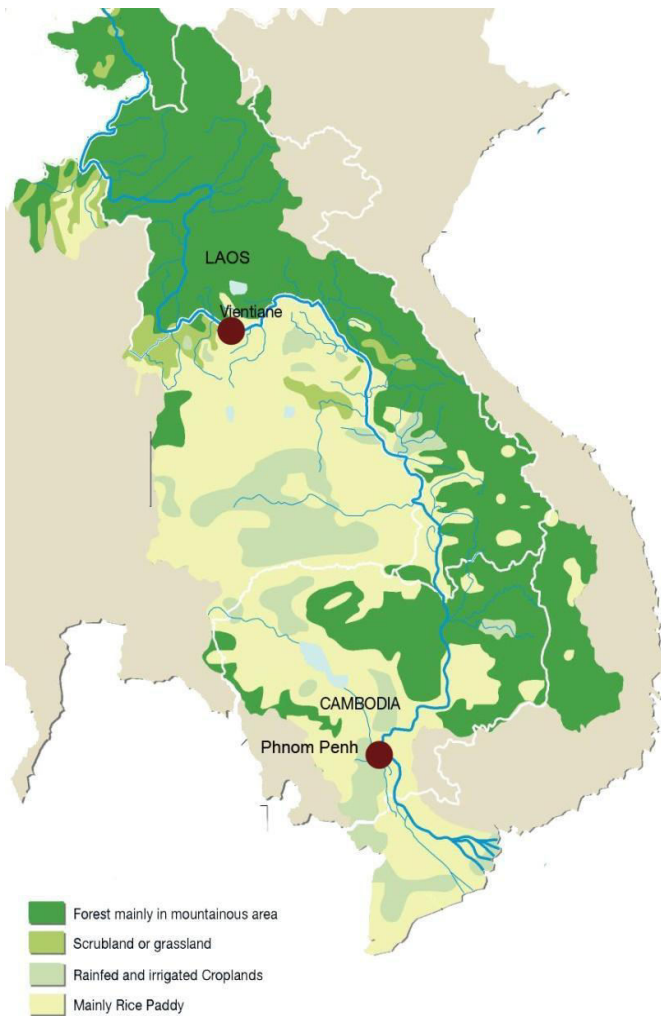
Mainland Southeast Asia



(Map 4.3) Source: Author's elaboration, 2013

Map 4.3.1

Map 4.3.2



Map c.1 shows the Upper and Lower Mekong region and the map c.2 shows Mekong river system from Yunnan province to Vietnam.

Source: Mekong River Commission

Map c. 3 Land use map along the Mekong River system. The river largely characterizes of agricultural lands and the capital cities of two riparian countries

governments and various social groups about infrastructural development in the upstream tributaries. As a result, it doubles the price of the river's impact to the regions. These contradictions over the resource utilization are acknowledged by this study as the core of the argumentation over the last decades for which they shape tensions on decision-making processes and a collective cooperation against the backdrop of the problem.

Conflict management by means of political consensus

The Mekong River Basin has one of the most significant institutional histories of river management, with regional dialogue on transboundary water cooperation dating back to the early 1950s (*Philip Hirsch and Kurt Mørck Jensen, 2006:17*). The resolution of conflict can be regarded as an initiative of an external organization to bring four riparian states to come into cooperation. The first ever Mekong River committee was assisted by the United Nations Economic Commission for Asia and the Far East (ECAFE) that brought four states (countries in the Lower Mekong River Basin) to an agreement shaped by their political goals as emerging nation states; this cooperation is as well coupled by a general consensus on the potential - equal - benefits they could gain from the river so as to orient their emerging economies towards growth and modernization. However, the absence of the other two remaining riparian countries, most probably shaped by their different political and ideological system – made the river basin wide planning premises limited to the lower region of Mekong mainstream.

The succeeding events may be regarded as episodic cooperation because of conflicting internal, and in a particular case in Vietnam, external political issues and limited support to strengthen the cooperation amidst of their economic development goal. This episodic cooperation is coupled with political fragmentation amongst the riparian countries very particular in the case of Myanmar and China on excluding themselves in cooperation with the Mekong River development. In this case where the issue is in international scale, conflict management certainly involves timely measures and natural evolution to recognize and acknowledge issues that are very crucial to keep in track any cooperation in an international scale.

There appears that interference of an international intergovernmental organization in whichever disputes or problem-solving issues may lead to a concrete and solidified arrangement of cooperation; its wide array of issues and framework stimulate a much wider system of collaboration. The role of UNDP, who interfered in early 1990s to explore and expound future collaborations, has led to founding of working groups that draft sustainable development of Mekong River by establishment of an institution that is under the equal governance of the lower riparian states.

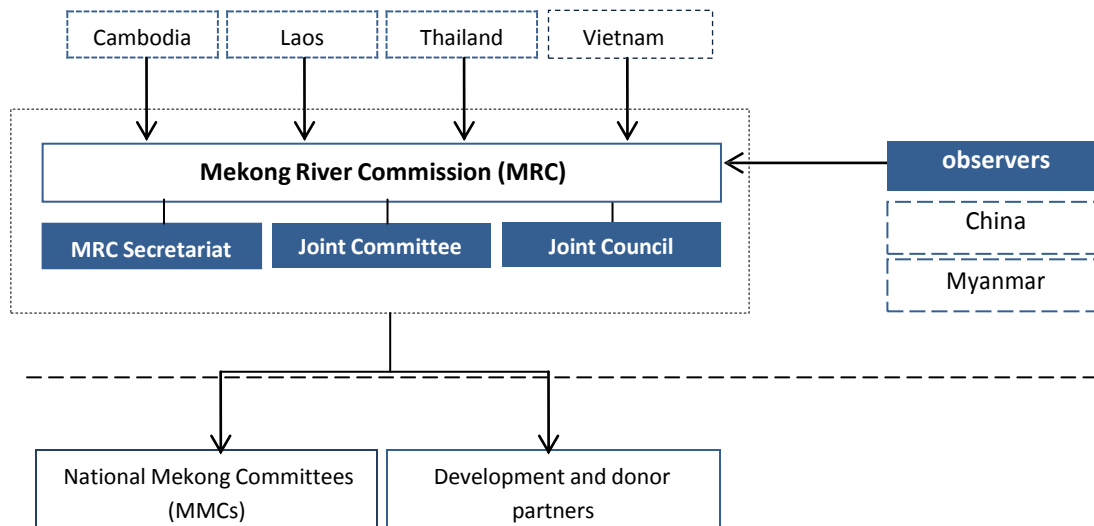
4.3.3. Policy Framework

Mekong Agreement 1995: the Mekong Agreement was signed by the lower Mekong River basin nation-states to establish a wider and holistic regional cooperation through the establishment of the Mekong River Commission. This unique cooperative relationship has been characterized as the “Mekong Spirit” – defined by mutual respect between riparian states and a willingness to engage in dialogue towards cooperative river basin management (Philip Hirsch and Kurt Mørck Jensen, 2006:20).

However, the agreement, in general, presents weakness in its procedure as its policy framework is not legally binding and several of its rules and norms are done in informal procedures. The only really ‘legally’ binding aspect of the agreement is the obligation for mutual notification of interventions and to agree on inter-basin diversions in the dry season (Joakim Öjendal, Vikrom Mathur and Mak Sithirith, 2002:21) More so, the coverage of political consensus, in spite of Cambodia’s resumed participation, is very limited and never possibly be done in holistic way since China and Myanmar are not included as members , rather they only act as observers during committee meetings which simply means that they are free from river regulations to any river development.

The abovementioned geo-political context of the six riparian countries and their haywire record of governance stimulated a political framework for an effective approach of environmental governance. The 1995 MRC Agreement institutionalized future cooperation over Mekong resources through the Mekong River Commission (MRC). The Mekong Agreement sees the effectiveness of cooperation and its policy implementation through establishment of a legitimized sole institutional body. ‘Regimes’ are ‘social institutions consisting of agreed-upon principles, norms, rules, procedures, and programs that govern

the interactions of actors in specific issue areas.’ (Young & Levy, 1999:1) Not only are the various countries interdependent, they are also entangled in the international political economy in which multilateral institutions, aid donors, foreign consultants, regional bodies, and others are all also heavily involved (Joakim Öjendal, Vikrom Mathur and Mak Sithirith, 2002:10).



(Diagram 4.2) Source: Author’s elaboration, 2013

Mekong River Commission structure and network

4.3.4. Mekong River Commission’s programmes

As any other river management offices in the world, the Mekong River Commission underwent a structural evolution shaped by the resumed interests of the nation states and assistance from various international organizations. The most important change in MRC is its working methods from merely sectoral ‘project’ to sectoral wide or ‘programme’ approach; according to United Nations Development Programme (1998), the programme approach is a process that helps governments to formulate national priority development objectives and to realize these objectives through corresponding national programmes formulated and implemented in a coherent, coordinated and participatory manner to ensure sustainability; and such integrated national programmes are normally multi-sectoral and consists of a variety of funding partners. The principle of multisectoral is based on the view that it is preferable to tackle only one development problem or objective but address it in all its dimensions. Nevertheless, this restructuring of the organization is brought by the foreseen consequences of its international nature and complex situation.

Looking at the economic profile of these countries involved in the Mekong River Commission, their emerging market economies as well as the internal and external political contentions hinder the maximum capacity to regulate and coordinate the overall management of the river particularly in technical and financial capitals. Consequently, the commission has been open on 'donor partner system' to pool economic resources and empower its institution for a long-term development. The multitude of donors involved – ADB, Association of Southeast Asian Nations (ASEAN), EU, UN, World Bank and WWF are among others – simply manifests the very characteristic of the river.

Basin Development Plan Programme and its implementation process

Looking back at the programmes of the MRC, this section analyzes the Basin Development Plan Programme of MRC which intends to elaborate the needs and participation of stakeholders –particularly looking at the third sector of society - in river management. This programme employs the principles of Integrated Watershed Resource Management (IWRM) that promotes the coordinated development and management of water and related resources so as to maximize economic and social welfare in a balance way without compromising the sustainability of vital ecosystems (*MRC, 2010:81*).

Generally speaking, it is considered as one of the core programmes of MRC's strategic plan cycle; therefore, together with the remaining programmes and their umbrella projects, they are consolidated for an integrated management (2011-2015) to kick off decentralization of the functions through capacity building. Theoretically, the commission works on a proactive management due to its monitoring and development support system. The programme is very comprehensive as it encompasses two different phase for its data provision and basin plan formulation with communication strategies to capture wide array of actors in regional and local levels; the two phases (2000-2006; 2007-2010) and its planning cycles are under the extensive influence of knowledge, capacity building and with great highlight of stakeholders' participation. However, stakeholder participation is done in stakeholder appraisal to analyze chief actors that are highly needed. The programme is divided into two ways of stakeholder participation to clearly set its priorities in national and local level. It works on two different forums and dialogue with local level participants and national forum (national agencies and institutions).

The overall program is obviously a manifestation of a very structured and institutional system even with regards to stakeholders' participation. The very nature of the problem and the actors involved for the longest time greatly affects its system to be a solid institution to permit external actors to come into play. However, there is no clarity to whether stakeholder participation is nothing but a mere participation and does not directly and partly influences the decision making processes. Lastly, with this complex and much institutionalized system, multitude of actors' participation may only be the way to achieve consensus building through common agreement but does not truly manifest sensitivity with the needs of the people in the basin.

Actors involved

The programme ensures multi stakeholder participation (national, regional, local and transnational) so as to convey the knowledge and information essential for its effective development and extend it more closely to the interests of marginalized groups.

The commission per say is already a very complicated network of actors (the lower Mekong River Basin countries) with a pocket participation of China and Myanmar as observers whenever dialogues and forums take place. The presence of the two countries is a mere way to keep their institutions inform on the current events in the Lower basin; they are free from any institutional accountabilities as they are not formally tied with the commission largely due to differences in values towards the utilization of the river; this is not to say that the latter actors are into environmental degradation rather they are towards rapid economic growth with maximum river optimization.

Actors	Type
Mekong River Commission	Political/ Bureaucrat
National Mekong Committees	Political/ Bureaucrat
National agencies (National RBOs)	Political/ Bureaucrat
Development and donor partners	Special interest
Private sector entities	Special interest
National research institutes and academic communities	General interest
Civil society groups, NGOs, other community based organizations in LMB countries	General interest

(Table 4.4)

Source: Author's elaboration, 2013

The network of actors extends up to international level where the commission heavily relies on funding its programmes and its activities. Generally speaking, the funds come from the MRC's members contribution and financial assistance from its donors and development partners. The funding mechanism for each programmes are separated into two; the managerial and administrative fund come from the regular budget of the commission which directly provided by the member countries; and lastly, the funds to cover all the activities for all the core programmes are provided by the development and donor partners of MRC although some activities, member states provide kind-in contribution. One may think that the too much dependency of the commission to international donor makes it susceptible to threats of sustainability of the project. To be specific, the funds and assistance for the realization of Basin Development Plan Programme are provided by the MRC together with its development partners; DANIDA, SIDA and AusAid.

4.3.5. Reception by its civil society

Historically, the riparian countries in The Mekong River basin are very weak in nature – and to some extent, existence is nowhere to be found - in relation to civil society; but, over the last decades, its landscape is changing rapidly across the regions. There have been growing and strong number of locally-based organization (NGOs or academic and research communities) specifically in Thailand, Vietnam and Laos. And these organizations embrace a multitude of interests related to environment and social issues.

In general, the BDP programme is well received by the civic actors but there is emergence of issue between their patterns of interaction. There appears that the stakeholder participation approach is just a matter of principle rather than essential for an effective development. Despite efforts at communications and relationship building, knowledge about the MRC and the programmes need to be improved. The BDP needs to be able to present itself more clearly, and to be seen as a programme that is responsive to the interests of its civil society.

The discontentment of the civil society can be regarded with the characteristics of stakeholders' participation that is done in a much institutionalized system. For an instance, in Thailand where there is a strong and high civil society organizations, there is a clear belief among them that bringing local people, NGOs and grassroots organizations into the

development planning process allows for an improved development. Even state representatives admitted that their agencies own mistakes of the past are largely due to not knowing enough about local circumstances, not listening to people and not taking their recommendations on board (MRC, 2010:76). The very crucial aspect for MRC is on how to present its interests in suitable manner and without being insensitive on the issues raised by the marginalized groups and how can they optimize the strong technical capacities of NGOs (particularly in Thailand) in wide range of fields which may provide a great potential knowledge resource.

4.4. Measures on civic engagement

The review of case studies, regardless of their institutional arrangements, present measures of civic engagement that may possibly open new opportunities and reflection to the case of Pasig River Rehabilitation. These civic engagement measures are the following:

Box 1.0

Nairobi River experience- Kenya

Gender empowerment and livelihood opportunities

One of the significant milestones of the programme is the intensive capacity building efforts for the river side communities. Since local government units remain incapacitated, the program sees community involvement, to strengthen local capacities, as one of the key success to the success of the program. In particular, such programmes seek for gender-sensitive approach. According to Jo Beall (1996), Gender is an essential construct within which to frame a set of questions regarding the processes and outcomes of marginalisation in the urban environment. Socially conferred roles and responsibilities differentially determine how women and men may contribute to and benefit from city life. For an instance, in community-waste management schemes, the utilization of women's knowledge and past experience has been utilized and heavily relied upon.

In addition, as the UNDP report suggests, Women's involvement at every level is essential to developing a sustainable management scheme. Household waste comprises of the majority of Nairobi's waste and women's domestic role often places the responsibility for removing waste from the house, whether it is discarded materials, food leftovers, or litter from the compound on the women's hands. Women are currently involved in community based

organizations which focus on waste recycling and income generation activities in forest areas near the river.

According to Dublin Principle no.3, women play a pivotal role as providers and users of water and guardians of the living environment. It states that acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all level in water resources programmes, including decision-making and implementation, in ways defined by them.

Apart from mobilizing women in community involvement, youths are well engaged in several sub projects of the programme and secure, at the same time, intra personal development. They are particularly involved in sub-projects of waste and garbage management of the program. As African Development Bank Group reports (2010) says, youth employment in the project, create a sense of ownership of the infrastructure and hence reduce chances of vandalism during operational phase. The project will also result into reduced cost of sanitation services as well as promote local entrepreneurship. Therefore, employment of local residents will increase their income and well-being. Lastly, together several NGOs - such as the National Youth Service - intensively work on empowering youth in environmental management skills and construction business related skills to promote long term jobs from biodiversity resources and to take advantage of the building industry boom in the country.

Box 2.0

Ping River experience - Thailand

Local empowerment through capacity building activities

As mentioned earlier, the momentum of the civil society awareness has started decades ago; however, in spite of several formulations of community-based groups with strong network to other community groups, NGOs and local agencies, these groups need to intensify their knowledge and unify their vision towards the Ping river basin management. Therefore, capability building activities with technical assistance are highly desirable for them to effectively partake in inclusive policy formulation and implementation of the project.

The basic approach of this project is to train selected local people to act as community facilitators and community members on training sessions and provide capacity building activities that enhance their social capital - building relationship, trust and network – and involvement in local governance. The activities were well received by the local communities as they had had long desired of an empowerment from the higher authorities. In addition, the capacity building efforts of the project has been expanded for other societal groups particularly women’s groups and youth groups, so as to start developing a wider base of resource person and possible leaders of the future related to the management of Ping River basin.

In the case of Ping River project, local government units recognize their lack of ability to effectively manage the issue of water resource management. As a result and given from the deconcentration-of-power approach of the central government, such institutions have to be molded and equipped with skills needed in handling complexities of water resource management as they play a very critical role in the river basin management. These capacity building activity focuses on educating further the local leaders about their role as a local institution in developing local plans within their jurisdiction and how they effectively implement their missions and respond to local demand for quality services.

Project-related local knowledge activities

Local participation and relevant knowledge, experience and skills are very important in a pilot project such as this in this project. Knowledge and skills particularly significant to the central themes of efforts under this project is about water resource management and livelihood program. These subject areas include a wide range of issues for which local knowledge and experience with local the conditions is highly critical; besides, it is only at the local level where local knowledge and experience are effectively integrated with additional knowledge and information from outside sources to develop more innovative and effective approaches to addressing local problems. Lastly, since the project calls for collaboration of multi stakeholders that embody local interests and a much wider society it is, therefore, relevant to have a reasonable number of people in sub basin who are familiar with the concepts and tools employed by outside organizations (MoNRE,2005)

Box 3.0

Mekong River experience- Mainland Southeast Asia

Stakeholders' participation and network building

The programme embraces importance of legitimacy on public eyes through the notion of collaboration among multitude of actors that may create a sense of local ownership for them. Given the complexity and transnational in nature of the river, the programme employs an institutionalized measure of stakeholder analysis so as to evaluate and appraisal the key and relevant actors amongst the multitude of actors claiming their involvement is a necessity into the programme. The identified actors are broadly categorized such as directly affected people, indirectly affected people, academic and research communities, NGOs and its alliances, private sectors and international organizations.

On the other hand, the river management issues are brought closer to different level of state actors and relevant external actors by dialogues that allow basin perspectives from various levels and stakes to mesh together for effective processes of the programme. This, however, serves as a common ground between local communities (with NGOs back up) and private sectors (project investors in the river basin) to voice out their interest and needs and come up with a common agreement. The involvement of stakeholders also includes the last cycle of the programme, which is the selection of the projects to be implemented in the river basin.

Role of mass media as a communication device

This programme highlighted a very strong and powerful way to enhance its communication with the key stakeholders since the water and its related issues encompass international in nature and wide ray of addressees which makes its very problematical to come into play relevant and necessary actors.. The programme sees social media as an effective medium to weave the communication gap and mesh the sensitive interests of the most marginalized and woman groups.

With a routine communication through press releases, newsletter, videos, brochures and publications and etc, the strategy ensures sort of groups well informed and actively receive and contribute information into the basin development plan process. What has to be highlighted in this theoretical strategy is the active participation of MRC to informal and formal regional initiatives related raised by various civic actors; this process employs the programmes basic communication principles of openness and transparency in terms of information and development processes.

Source: Author's elaboration, 2013

4.6. Emerging opportunities

These case studies demonstrate essential components to better understanding processes and frameworks of governance with respect to river rehabilitation, and to some degree, environmental management. The very nature of these cases is an exact manifestation on how many countries today deal with environmental governance in reactive way. On the other hand, they provide opportunities for better reflection with respect to evaluating and addressing complexity of governance and reconsidering role of civil society as a key actor in a collective environmental action. This section is devoted to briefly discuss the learned lessons with regards to the case studies.

4.6.1. Integrate formal and informal institutions

Firstly, the significance of integration of environmental activities is viewed as a requirement to collectively address wide array of issues not only by just integrating various policies and activities but as well actors that are deemed to be relevant in decision making processes. As UN states, it is necessary to design a package of different instruments, including regulatory frameworks, voluntary measures and economic instruments because one single instrument will not fix the problem.

Integration of environmental activities means of good interaction in a multi scalar approach. The strong local initiatives and network of civic actors are clearly demonstrated in the case of Ping River and the attempt of state actors to involving themselves in a formalized organization to closely work together. Interaction with respect to all types of state and non-state actors is very evident as well in the case of Nairobi. However, interaction should not only mean of participation in data analysis and volunteering activities but as well as participation on decision-making processes in relation to environmental development.

The presence of an international intergovernmental organization in the case of Nairobi and Mekong both provides a reflection that an extensive collaboration under the initiative, or let's say substantial efforts, by an external actor is very crucial to its realization because of their coherent policies in sustainable development and enabling resources that heavily influence actors' behaviors and their pattern of interaction. However, this study believes, dependency in international actors might be vulnerable to fragility with respect to

governance. The case of Nairobi has demonstrated that the initiative of UNEP has been a success for it was able to come into play relevant actors and implemented the programme with pilot projects but since then the government of Kenya has not sustained the effectiveness of the programme. While in the case of Mekong River, the presence of international donors and partners may lead to ineffectiveness of cooperation and its activities once financial support diminishes. Therefore, roles and functions of actors involved must be clearly defined under the authority of national government. And, central authorities must deploy substantial efforts and financial support to initiative river management.

4.6.2. Horizontal coordination (Principle of devolution)

Building networks or alliances seem to be a very critical element also that surface from the case studies. It appears that strong local initiatives and alliances are correlated on how political actors take societal demands seriously; like in the case of Ping River in which central agency subsidized several responsibilities to local actors because of strong voice and bottom-up organizations which somehow changes political outcomes.

On the other hand, the study believes that in these particular cases, the role of institutionalized organization is crucial in bridging these informal organizations to build consensus and bring them into a collective action. What has to be highlighted here is that interlinkages tend to share responsibilities and roles in a shared identity and goal; so the task of top-down collaboration appears to be a necessity to gather scattered bottom-up collaboration into a formalized collective action for effective and flexible governance. This case is very evident in the Nairobi river rehabilitation in which a number of actors are gathered into a specific network or alliance that has specific responsibility, such actors in network comprises of actors from research communities, non-governmental organizations and the likes, and link with other actors for information sharing. Lastly, in engaging informal networks in a formalized organization, it somehow opens and introduces itself to a much complex issues and actors, and practices the very basic right of citizens – social equality.

4.6.3. Local empowerment

The crucial issue of civic engagement has been an integral element of the case studies. Although, as shown in previous sections, this idea of engagement is not effectively employed with regards to its purpose, these case studies have demonstrated strong local empowerment in different ways and suitable mechanisms if they were properly measured. The significance of local empowerment has been the very nature of the case in Nairobi and Ping wherein gender mobilization, particularly women and youth, has been given great consideration to be a potential approach in response to cross cutting issues of sustainability. Local leadership of such gender demonstrates a significant role in shaping solution and mitigating impacts to environment through their local lay knowledge and experience that are regarded as an important factor when dealing with environmental issues primarily because they are the prime source of pollution and they know very much the place they live in than anybody else. However, involvement does not come along with just a mere immediate involvement; it must as well come along with an appropriate capacity – knowledge, financial, to some degree, and information – support for their effectiveness in a given action.

Capacity building, which is being regarded as a very crucial mechanism for empowerment, is the very nature of response by the case studies. It is being considered as the immediate response to engaging civil society by widening their knowledge and information through training sessions , which inevitably takes time - that enhance their social capital - building relationship, trust and network - and effectiveness in local governance. On the other hand, capacity building is not limited to civil society, as shown in the case of Ping; local authority is in range of this mechanism. Generally speaking, local authorities are the less committed state actor due to a variety of reasons but their role as a reinforcing element of national-local level issues and activities is very crucial for policy consistency. The case of Ping and Nairobi have shown capacity building in local authorities to mold and strengthen their role to local jurisdictions and mold their technical capacity in respect to water resource management.

The author finds that openness to key actors is an important ingredient of multi level governance simply because it implies a shift of responsibilities from state actors towards

non-governmental actors which therefore permits the latter actor to participating in normal political processes. Similarly in the case of Mekong and Nairobi, nongovernmental actors are given the responsibility to collaborate in a formalized collective action and, in particular in Mekong case, given decision- making power to identify potential river development. More so, agencies and organizations outside of a formalized organization are seen as a mechanism to devolving some responsibilities through building of development networks thereby allowing a polycentric collaboration of actors while central authorities still on top.

To briefly summarize, the case studies demonstrate very crucial issues that are relevant to developing environmental policies and guide to reflecting possible framework of governance. It therefore guides the author to deriving three emerging components that, the study believes, may open for opportunities of reconsideration in the case of Pasig River rehabilitation; they are integrating formal and informal institutions, local empowerment through gender mobilization and re-defining roles of non-state actors, and horizontal coordination thru the principle of devolution of responsibilities. However, these emerging components does not warrant a simple replication to the river rehabilitation simply because all cases are unique in their own nature – economics, political and social issues – and that evidence from the arguments prove that there is no single syndrome of participation that may work in related cases, but rather widen the possible opportunities of reconsideration.

5.0 Discussion, Conclusion and Case-specific recommendation

5.1. Discussion

5.1. Introduction

It has already been asserted by literatures and empirical evidences that the traditional mechanism, command-and-control strategy, is regarded to be ineffective, prescriptive and unrepresentative because determining political outcomes and defining environmental policies are only based from institutional knowledge. It has been exemplified in this paper that institutions acting alone cannot accomplish its goals without the contribution and participation of civic actors which now being regarded playing a crucial role in resource governance. With all these, the author has drawn the following discussion from the central objective concerning the pivotal role of civic actors in water governance.

5.1.2. Civic engagement thought

5.1.2.1. Above all, why institutional and non-institutional actors need to be coordinated as a 'collective actor'?

The first question is driven by the positive thought concerning a number of potential outcomes when the two actors act collectively and efficiently. As literatures and empirical evidences have shown, if these two type of actors work collectively then there would be greater chances of modification of issues that formal institutions may address. Rational and pivotal roles can be allocated to the once powerless non-institutional actor which can in turn widens the scope of consideration from pure economic-political issues to socio-political and socio-ecological issues. In short, diverse interests and challenges that are often ignored by institutional actors within this context of dilemma can be tackled and be given space for determining actions and activities. The case of Nairobi shows how such actors work and act

collectively under a formalized organization that makes it possible for civic actors to be given significant consideration in deciding policy outcomes and distribution of crucial responsibilities. All these sums of the practical views of Susan Fainstein's 'Justice' (2010) concept which breaks down in the idea of equity and democracy in decision outcomes and diversity of stakeholders interest from low-income residents or those that are often marginalized in society.

The second thought lies at the context of water problems as a societal 'commons' dilemma. The very nature of this problem has already been regarded by literatures and even evidences in this paper that it is a human-caused dilemma and is the result of personal and economic interests of institutions and its society. Through coordination between these actors who have the real knowledge on this cross cutting issues can be regarded as a sustainable way of addressing the dilemma. This question is driven by the thought of making these sources of the problem as the catalyst of sustainable change because these actors, particularly civic actors, can provide the best possible solutions as they are the chief actors causing pollution in the river. However, genuine engagement of non-institutional actors in the 'co-production' of decisions and policies require a real shift in operation of formal institutions. It requires new skills for political actors such as being negotiator and collaborator.

5.1.2.2. Why pursue civic engagement as a tool for environmental decision-making process?

Findings have shown that rehabilitation is a borderless issue that runs at all aspects of development that requires equally borderless solutions. Then, definition of solution must come from a rational group of actors that truly are affected and vital in addressing this issue. Civic actors per say are regarded vital for their societal concerns and most likely to demonstrate environmental stewardship than any other actors. Their day to day stewardship which lead to volunteerism, social networks and financial resources flourish to human resources of a formal institution, as greatly shown in the case of Pasig River rehabilitation. Their stewardship that is frequently community-based is seen to be very crucial as a tool in enhancing environmental decision-making processes. Although sometimes stewards might turn out to be politicized but generally speaking this moral is

regarded rational. Susan Fainstein the importance of participation as the vehicle through which power asserts itself.

In the light of their community ethics, civic actors are able to help re-vision purposes of urban waterways. Although immediate appropriators are the ones that readily pollute waterways, their intrinsic territorial attachments to rivers are undeniably strong. Given proper technical capacities and knowledge, they are able to input issues that are deemed not just to successfully rehabilitate the river but also to create a new shared territorial identity for waterways. In this way, civic engagement does not only socially develop formal institutions in outcomes but also flourish personal development amongst other civic actors.

The very basic components of social capital are regarded very important particularly for the state because it intrinsically depends on social stability and widespread popular support. However, in some cases, government policies may damage or hinder social capital, depending on how wide the state's recognition to it. These components according to Robert Putnam (1995) are features of social organization and networks, bound by trust and norms, which can improve the efficiency of society by facilitating coordinated action. He adds that, these linkages among civil society nurture a strong foundation of community-based commitment exemplified by a unified voice and interests towards societal issues. The World Bank reinforces this idea by extending the importance of social capital to a formalized institutional relationships and structures that acknowledges the capacity of various social groups to act in their interests.

5.1.2.3. Does civic engagement make environmental decision-making process more efficient? Does it promote sustained change? If so, how do we sustain it?

The second set of question is motivated by the issues attached to civic actors' roles and its effectiveness. As literatures and evidences have shown, there seems to be a clash between the knowledge and practice concerning civic engagement. Despite acknowledgement of civic actors' crucial role from several literatures, evidences have shown that their engagement is very much concentrated at the lowest level of processes and are only understood as contributors or receivers of actions. The assumed efficiency of civic engagement in theories is definitely an overwhelming task to perform in practice, as clearly exemplified in the case of Pasig River. As civic engagement is associated to diverse interests

and time investment, formal institutions tend to constrict public participation from defining societal policies and determining decision outcomes by only allowing them at the implementation level. But given proper and substantial role they can help straighten cross-cutting socio-ecological issues, for instance informal settlement, and contribute also to a more accountable and transparent political function of formal institutions.

Given that civic engagement makes water governance more efficient with proper allocation of substantial role, a reflection arises on how social capital can be sustained in formal institutions. This last question is driven by the thought of the pivotal role of civic actors in a sustainable change of water problems. As the conventional knowledge of sustainability asserts, 'social development' component completes the total picture of a sustainable development. Hence, in order to attain sustainable change, social capital has to be harnessed. It has been proven that effective water governance requires sustained interlinkages between state and non-state actors. The continuous presence of local level actors are highly dependent on how higher authorities capacitate, and allocate responsibilities and competencies to them. The following sections show two perspectives on how civic engagement may possibly be sustained.

The first perspective is within the context capacity building. Case studies exemplified that local building capacity shapes the foundation of continuous engagement of local level actors – Institutional and non-institutional actors. By means of assisting them in building their capacities, it ensures that locals and interest groups have input and can provide decision makers with their local knowledge. The case of Nairobi River shows how gender empowerment may help contribute to shaping local policies with their local lay knowledge, particularly the domestic role of women and promising role of the youth for their future resource appropriation. On the other hand, effective enforcement of policies at the very local level requires a dominant local institutional actor that oversees its implementation therefore an effective and capacitated local actor must be regarded. The case of Ping River has shown the importance of capacitated local actors as it also leads and protects the interests of its communities in decision processes and is accountable for monitoring of the local coordination.

The second perspective is within the context of interlinkages which are essential in resilient socio-ecological systems. A formalized collective action that depends on adaptive co management, social networks are very crucial for success. Social networks are key because of their capacity to promote innovation, facilitate communication between entities, and foster the flexibility necessary for successful environmental management, which requires interplay between fluid ecological systems and rigid institutions (Folke et al. 2005, Green et al. 2012). Hence, building social network in local level is essential in resilient socio-ecological systems. This holds true in the case of Ping River where informal networks were later on recognized, due to strong local initiatives, and then involved in a formalized action not only to help facilitate communication and information sharing but also as a sign of public legitimacy and acceptance.

5.2. Conclusion

Cross cutting issues concerning water challenges have paved the way for civic actors to a pivotal position within a formal institution. Their increasing recognition and engagement have influenced institutions in making a strong stand in social issues at the midst of environmental and political discourses for effective outcomes of water governance. This paper does not only carried discussion on how society itself may possibly be a significant input in governing common's problem but also positioned them as a rational resource for a formalized organization. The study sought to answer the following: In which contexts does civic participation contribute to effective water governance? Which measures of civic engagement do foster it? By and large, this thesis has found that urban waterway rehabilitation is a complex challenge that requires equally complex solutions. Study reveals that there is no prescription or single-issue that makes successful rehabilitation outcomes rather it needs collaboration and open communication with the rest of the society.

In the cases considered in this paper, main finding is that civic engagement helps reconstruct or re-creating a vision for the identify of a waterway through their social responsibilities and initiatives. Civic actors together with political actors create a shared and new territorial identity for an urban waterway. Their engagement also enhance political functioning of a formalized institution by inputting borderless issues into its framework and help molding the way it defines environmental-political decision outcomes. Given proper

positions and importance, civic actors are the potential catalyst of a sustainable change for they are the immediate appropriators of an open resource. Since society itself is regarded as one of the prime contributors of resource degradation then therefore they can provide the best possible solutions and local lay knowledge to a sustainable rehabilitation of resources. Measures of gender empowerment and horizontal organization provide lasting effect of both direct and indirect civic engagement. Effective engagement demands political support for a genuine devolution of roles and responsibilities to civic actors and other stakeholders with whom they are engage. However, all these can be restricted by political constraints and tensions which then may lessen the magnitude of civic actors' efficiency.

In spite of what have been noted in literatures that resource governance revolves around institutional and non-institutional actors as single entity, involvement of civic actors in practice has only attained, in most cases, the lowest level of participation. So, the challenge remains on how to take full advantage in practice the potential contribution of civic actors in governing their resources.

5.2.1 Recommended future research

Clearly, the scale of this topic is very extensive and multifaceted issues therefore future research for further attainment of larger picture of civic engagement in governance is recommended. There is a need to identify how do institutional arrangements affect the magnitude of civic engagement within a formal institution and how can civic actors counteract it. This paper might have fairly discussed the issues but a complete set of research is ideal to have a larger picture of this situation. There is also a need to identify how civic actors can persuade political outcomes over a socio-environmental conflict in river rehabilitation, particularly resettlement issues. The case of Pasig River clearly shows how strong contention between informal communities and PRRC concerning resettlement programmes and consultation.

5.3 Case-specific recommendation

5.3.1. A number of case-specific reconsiderations have been identified which may provide new opportunities for civic engagement and help to improve governance process that is taking place in the context of Pasig River rehabilitation. These recommendations look at the case of civic actors and to some extent what PRRC can do to strengthen civic engagement.

Reconsideration 1: Community-based development

5.3.1.1.: Gender empowerment: Women and youth

As a response to sustainability measures, gender empowerment is intended to build capacities of society to shape how local communities function with respect to river rehabilitation and maintenance. Given that the Philippines is known for having high gender equality, empowerment of women and youth may possibly be a good reconsideration as part of sustainable change scheme of the programme. As evidences exemplified, women population in households near the river has posted high percentage then therefore it can possibly be an opportunity to capitalize on their potential engagement through their domestic role which deemed to play vital in sustainable change of the river's condition. Capacity building to boost further their river awareness is very desirable.

Similarly, youth civic engagement in this particular large-scale programme is deemed to be very crucial. Youth involvement in Pasig River rehabilitation seem to be very 'episodic' supporter for they appear only when a project is at their vicinity or part of their service learning. Therefore, this programme can capitalized on the existing 'weak' in nature youth councils in the Philippines as part of social network construction to initiate strong social interaction and network ties amongst youth. Capacity building to boost further their river awareness and knowledge is as well very desirable.

5.3.1.2. Exploit non-institutional 'social' networks

As a response to political functioning contribution of civic engagement, PRRC may use a mechanism that employs network building to existing civic community alliances and delegate specific responsibilities such as monitoring, negotiation, and implementation. Creating interlinkages of social networks under PRRC and devolve responsibilities to these

social networks can strengthen their rational position and promote transparency of political and environmental decisions. This collaboration can be executed through ties with the university consortium in Metro Manila and other epistemic communities, existing NGOs and POs, and grassroots communities and establish legitimized committees where both actors work closely and input societal issues that are relevant and need immediate response. In this way, it may address the issue of fragmentation or that important actors and constituents are outside the political processes.

Reconsideration 3: Community-local political actors' social commitment

The research finding suggests that civic engagement is highly dependent on how open and effective institutional arrangements are. Hence, recommendation also includes strong local leadership particularly from MMDA and local government units. They should be given a rational position and strong stand in behalf of their citizens, especially the urban poor, so that the latter actor has some protection and direct relation to the earlier actor. Since LGUs' mayor league is a member and as the representative of MMDA to PRRC, then it may be an opportunity to empower their technical and social capacities in order to enhance their competencies and use this as a tool to influence their local commitment towards their communities. Same goes for MMDA, its strong to civic actors, especially NGOS, show its strong likeliness as a mediator between NGOs and PRRC concerning socio-ecological issues.

Reconsideration 4: Maintain societal actor's leadership

In spite of undervalued civic engagement, it is still suggested to stabilize the leadership of societal actor in PRRC. The logical position of this societal actor from institutional actors' perspective for pooling further economic resources and public legitimacy can be regarded, on the other hand, a strategic way for the civil society to relatively input more socio-ecological and socio-political issues into PRRC. The presence of this societal actor is also means of continued capitalize on mass media as its tool to convey education, awareness and campaign to much wider society participation.

Appendix

Chronology

“Pasig River became dark and devoid of life.”

(Pasig River, River of Life)

Timeline of deterioration

1930: decreased in fish migration

1950: noticeable drop in the people’s bathing activities

1960: obvious drop in both bathing and washing activities

1970: the river began to smell bad and water quality fell below Class “C” level

1980: all fishing activities stopped

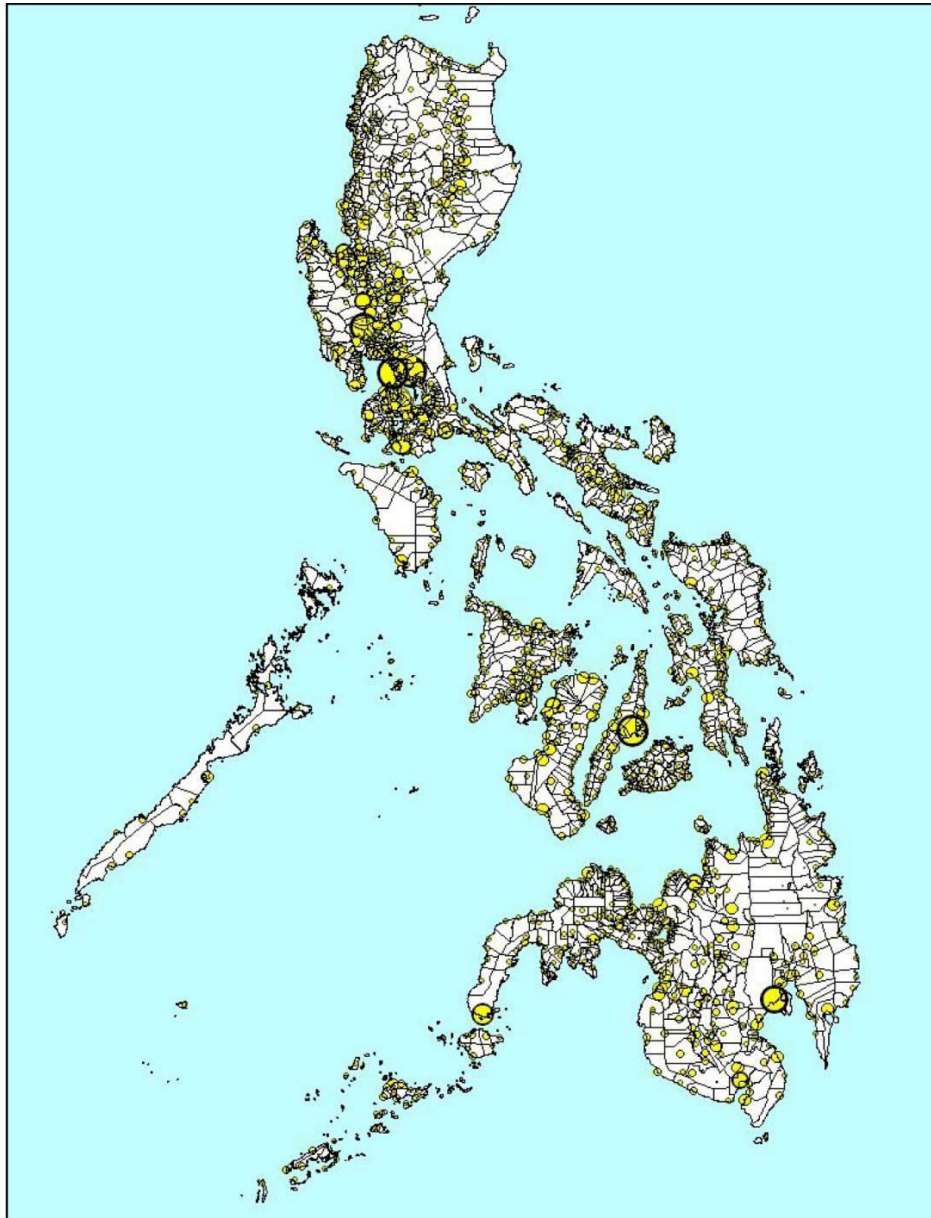
1990: was declared biologically dead

The state of the Pasig River and its environs at the start of the 1990s is characterized by dark, murky waters, islands of floating garbage, sunken boats and derelicts, colonies of makeshift shanties, proliferation of factories discharging untreated wastewater, and frequent flooding (Imelda Baleta, 2009)

Appendix

Maps

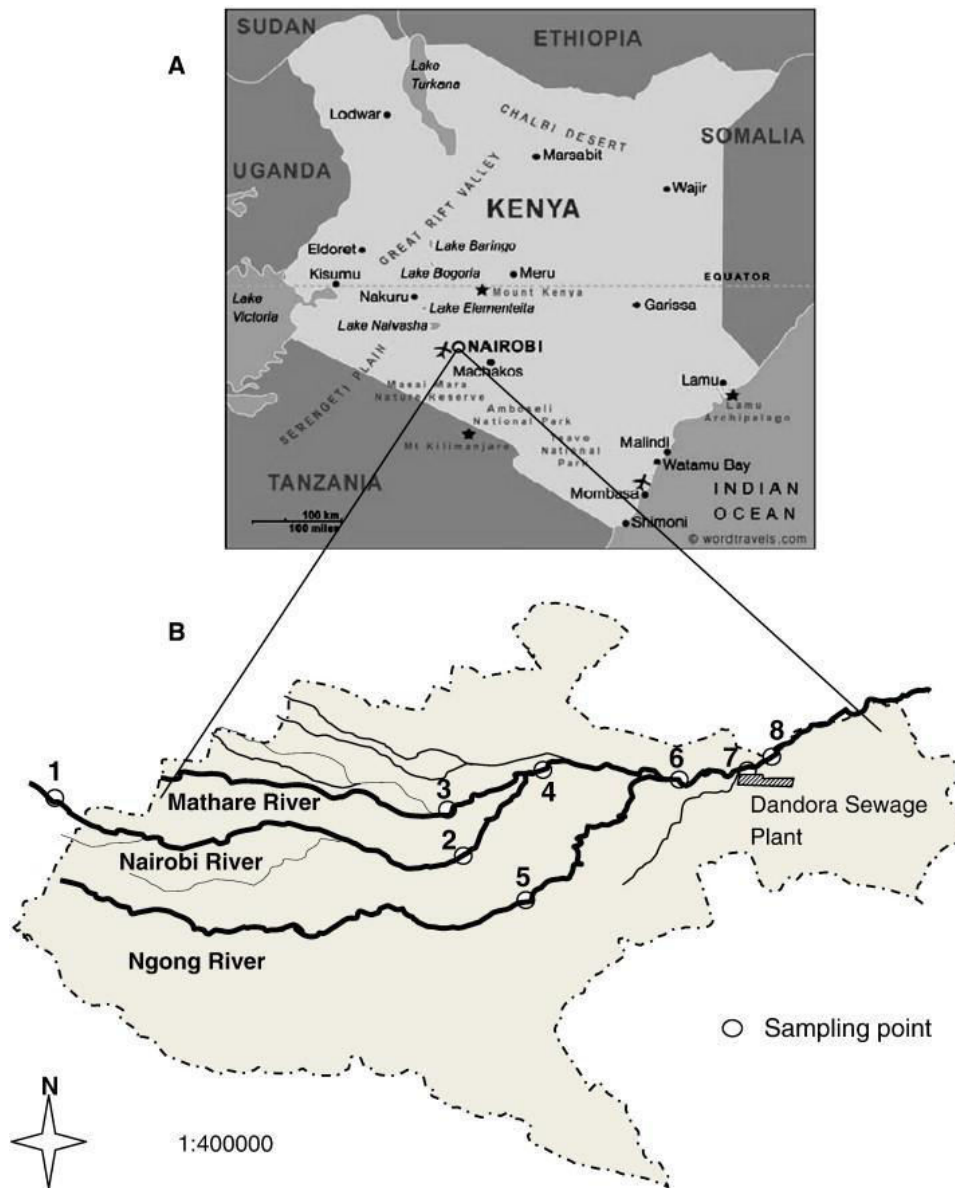
Philippine urban regions



Source: Corpus, 2007.

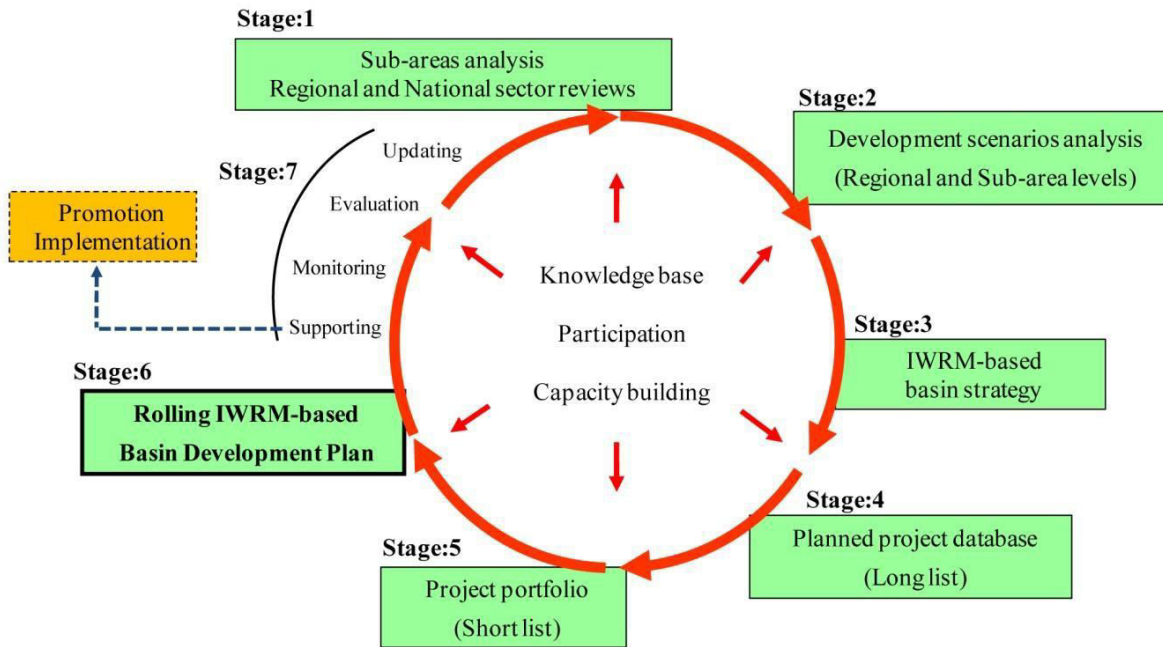
Appendix

Maps



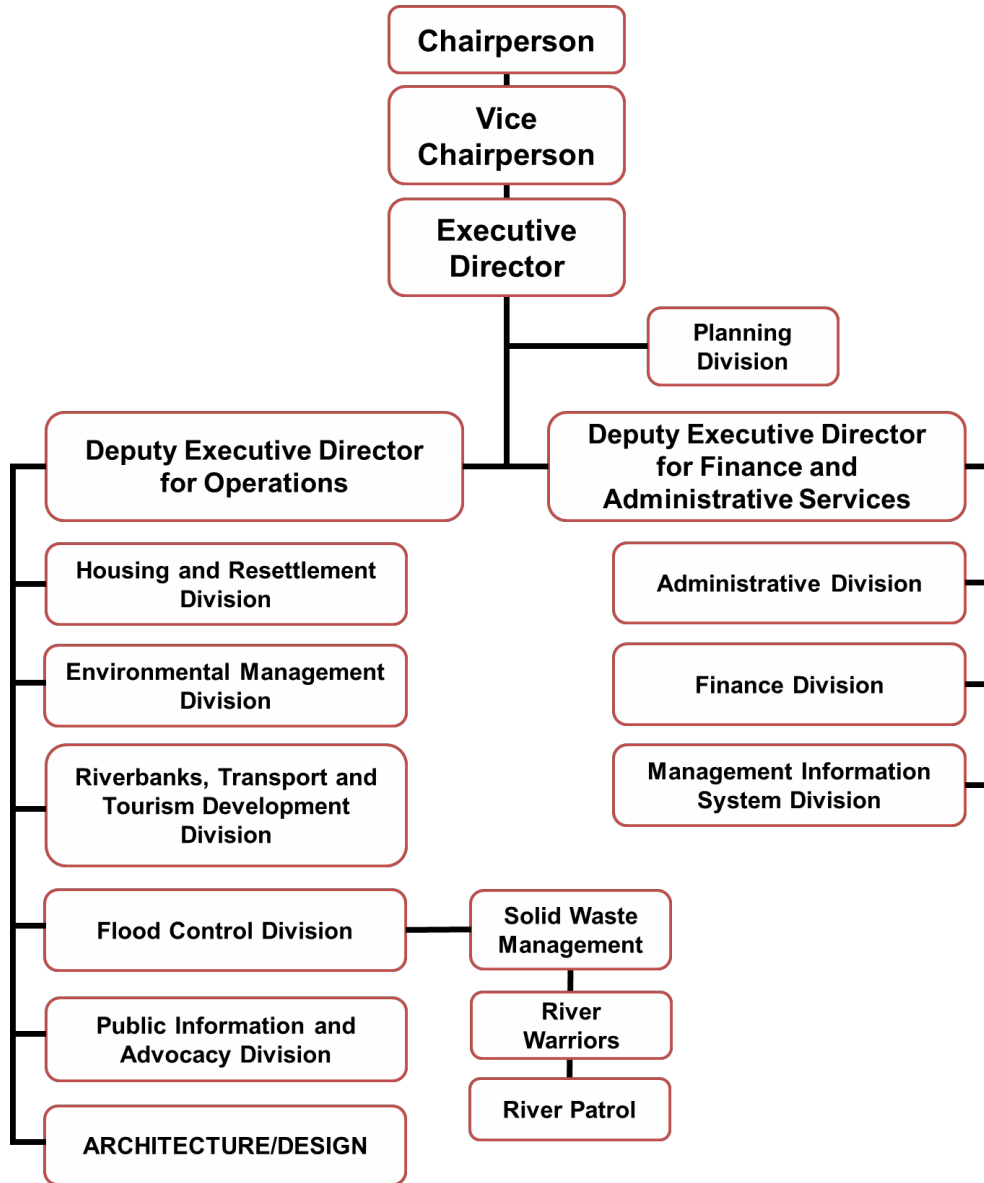
Appendix

MRC basin Development Plan Diagram



Appendix

Pasig River Rehabilitation Commission structure Diagram



Appendix

Table 1. Urban Growth in Philippine Regions, 1960 - 2000

Urban Growth in Philippine Regions						
Region		Level of Urbanization				
		1960	1970	1980	1990	2000
Philippines		29.8	31.8	37.5	47.0	48.0
NCR	National Capital Region	98.1	100	100	100	100
CAR	Cordillera Administrative Region	-	-	20.1	30.1	35.6
I	Ilocos	17.6	19.4	23.6	32.3	38.2
II	Cagayan Valley	14.1	14.1	17.7	21.5	22.2
III	Central Luzon	26.5	30.2	41.8	54.3	60.5
IV	Southern Tagalog	26.8	30.6	37.1	53	58.2
V	Bicol	21.9	19.2	21.9	26.8	27.6
VI	Western Visayas	30.5	26.7	28.4	37.1	30.3
VII	Central Visayas	22.2	27.9	32.1	42.5	46.4
VIII	Eastern Visayas	18.9	19.4	21.8	28.1	19.5
IX	Western Mindanao	16.8	15.8	17.6	31.5	26
X	Northern Mindanao	20.2	20.9	25.6	42.3	40.5
XI	Southern Mindanao	20.9	26.6	34.3	38.4	38
XII	Central Mindanao	-	15.6	24.3	32.8	32.7
ARMM	Autonomous Region of Muslim Mindanao	-	-	11.8	22	21.2
XIII	Caraga	-	-	30	36	27.2

Source: National Statistics Office.

Table

Appendix

Table

Table 5 Interregional migration rates by sex and by region of destination (1975-1990)

Percent of Interregional Migrants by Sex and Region of Destination and Net Migration Rate: 1975-1980 and 1985-1990							
Region		1975-1980			1985-1990		
		Male	Female	Net Migration Rate ¹	Male	Female	Net Migration Rate ²
NCR	National Capital Region	39.93	60.07	3.70	41.83	58.17	2.12
CAR	Cordillera Administrative Region	-	-	-	47.66	52.34	-
I	Ilocos	46.19	53.81	-1.79	47.44	52.56	-0.85
II	Cagayan Valley	91.67	8.33	-0.17	50.72	49.28	-0.97
III	Central Luzon	45.77	54.23	0.25	47.26	52.74	1.63
IV	Southern Tagalog	49.24	50.76	1.43	49.07	50.93	1.43
V	Bicol	49.77	50.23	-2.25	50.15	49.85	2.97
VI	Western Visayas	48.76	51.24	-1.97	49.01	50.99	-1.43
VII	Central Visayas	48.22	51.78	-2.01	48.40	51.60	-1.17
VIII	Eastern Visayas	49.35	50.65	-3.13	49.75	50.25	-2.27
IX	Western Mindanao	52.20	47.80	-0.47	52.08	47.92	0.59
X	Northern Mindanao	51.64	48.36	1.69	51.82	48.18	0.66
XI	Southern Mindanao	51.62	48.38	1.07	51.79	48.21	0.48
XII	Central Mindanao	50.80	49.20	0.99	50.79	49.21	-0.61

Source: Philippine Yearbook, 1992 and 1997

* No data published on interregional migration beyond 1990.

Appendix

Images

Author's personal photos (September 2013)



Bibliography

Bailey Nicholas, Barker Alison, MacDonald Kelvin. Partnership Agencies in British Urban Policy (The Natural and Built Environment): Published by UCL Press, 1995

Bobbio, Luigi, Dente, Bruno and Spada, Alessandra. Government or Governance of Urban Innovation? A Tale of Two Cities: *disP* 162 No 3/2005, p41-52

Cabrido, Candido. Overview of river basin organisations and water related agencies in the Philippines: Policy Study on River Basin Management in the Philippines: DENR and ADB, 2009

Carr, Edward, De Oliveira, Thierry, Have, Claudia ten, Stabrwa Anna, Sharma Nalini, Wilson Clarice Interlinkages: Governance for Sustainability. United Nations Environment Programme, 2007

Fainstein, Susan. *The Just City*: Cornell University Press. New York, 2010

Hardin, Garrett. "The Tragedy of the Commons". *Science* 162: 1243-1248, 1968
<http://www.sciencemag.org/cgi/content/full/162/3859/1243>

Helmer, Richard and Hespanhol, Ivanildo. *Water Pollution Control - A Guide to the Use of Water Quality Management Principles*: United Nations Environment Programme, the Water Supply & Sanitation Collaborative Council and the World Health Organization, 1997

Hirsch, Philip and Jensen, Kurt Mørck. *National Interests and Transboundary Water Governance in the Mekong report*: Collaboration of DANIDA, University of Australia and Australian Mekong River Centre, 2006

Hirsch, Philip and Miller, Fiona. *Civil Society and Internationalized River Basin Management*: University of Sydney Printing Service, 2003

Jompakdee Wasan. Environmentally sensitive river engineering and the role of civil society: Chiangmai experiences: Chiang Mai University, 2004

Lee, Sangheon and Eyraud, Francois. Globalization, Deregulation and Workers: Changes and Outcomes: ILO and Korea Labor Institute, 2007

Merino, Matthieu. Shared Waters Shared Opportunities: Hydropolitics in East Africa. The Setbacks of Mismanaged Urbanisation: Pollution of Rivers in Nairobi: Mkuki na nyota Publishers Ltd Dar el Salam, Tanzania, 2010

Newig, Jens & Fritsch, Oliver. Environmental Governance: Participatory, Multi-Level - And Effective?: Environmental Policy and Governance, 2009

Porio, Emma. Urban Transition, Poverty, and Development in the Philippines: Ateneo de Manila University, 2009

Putnam, Robert. Bowling Alone. America's Declining Social Capital: Journal of Democracy, 1995.

Ribot, Jesse C. Democratic Decentralization of Natural Resources: Institutionalizing Popular Participation: World Resource Institute, 2002

Secchi, B. "A new urban question. Understanding and Planning the Contemporary European City", in: Territorio, 2010.

Sibal, Jorge. Measuring the Informal Sector in the Philippines and the Trends in Asia: 10th National Convention on Statistics (NCS) EDSA Shangri-La Hotel, 2007.

Tuddao Jr. Vicente B. Framework planning for basin-level management - Philippine approach. Report prepared by Center for River Basin Organizations and Management, Solo, Central Java, Indonesia, 2009

UN-ESCAF. Urban Environmental Governance: For Sustainable Development in Asia and the Pacific: A Regional Overview: United Nations publication, 2005

Vikrom Mathur, Öjendal Joakim and Sithirith Mak. Environmental Governance in the Mekong: Hydropower Site Selection Processes in the Se San and Sre Pok Basins: The Stockholm Environment Institute (SEI), 2002

World Bank. The Philippines: Country Environmental Analysis: World Bank, Washington, 2009

Young, Oran. The Effectiveness of International Environmental Regimes – Causal Connections and Behavioral Mechanisms: MIT Press, Cambridge, Massachusetts, 1999

Sitography/websites

Alphonse Magati, Sustainable Urban Environment (SUE) Campaigner and Expert. Blog Nairobi River Woes, The picture of Kenyans in the waste-laden waters <http://magati2020.blogspot.it/2011/04/nairobi-river-woes-environmental.html>

Asian Development Bank. Civil Society beliefs: Philippines: Publication Stock No. ARM124416 February 2013. <http://www.adb.org/sites/default/files/pub/2013/csb-phi.pdf>

Asian Development Bank- Pasig River Rehabilitation Commission: The Importance of Community Mobilization in Achieving the Pasig River Development Plan, 2009. <http://share.pdfonline.com/c18c486bba174852afdd566cc76a2e15/OHJEEZ.htm>

Asian Development Bank evaluation report. Pasig River Environmental Management and Rehabilitation Sector Development Program, 2012 <http://www.adb.org/documents/philippines-pasig-river-environmental-management-and-rehabilitation-sector-development-pro>

Baleta, Imelda. Role of Civil Society Organizations in the Pasig River Environmental Management and Rehabilitation Sector Development Program,2009. http://www.forum-urban-futures.net/files/Baleta_NGOs%20Pasig%20River_0.pdf

Bochenek, Carrie. Mekong River Basin, Under Climate Change: March 23, 2010
[http://www.ce.utexas.edu/prof/mckinney/ce397/Topics/Mekong/Mekong\(2010\).pdf](http://www.ce.utexas.edu/prof/mckinney/ce397/Topics/Mekong/Mekong(2010).pdf)

-
Bureau of Agricultural Statistics <http://www.bas.gov.ph/>

Einsiedel, Nathaniel Von. Governance and Planning in Metro Manila. 2009.
http://www.eastwestcenter.org/fileadmin/resources/seminars/Urbanization_Seminar/Governance_and_Planning_in_Metro_Manila_Nathaniel_von_Einsiedel_.pdf

Ecological footprint of the Philippines (2012)
http://www.footprintnetwork.org/images/article_uploads/Philippines_Footprint_Report_2012.pdf

Library of Congress – Federal Research Division (2006)
<http://lcweb2.loc.gov/frd/cs/profiles/Philippines.pdf>

Mekong River Commission (2013) <http://www.mrcmekong.org/>

Mekong River Commission (MRC). Stakeholder analysis for Basin Development Plan report.(2010) <http://www.mrcmekong.org/assets/Other-Documents/BDP/BDP-SHA-Final-Mar-2010.pdf>

Ministry of Natural Resources and Environment final project report. Participatory Watershed Management for the Ping River Basin (2006)
http://www.onep.go.th/download/ping_wb/ping_wb_eng.pdf

Nairobi River Rehabilitation UNEP website http://www.unep.org/roa/nairobi_river_basin/

Network for Water and Sanitation (NETWAS). Nairobi River Rehabilitation Phase III report http://www.unep.org/roa/Nairobi_River_Basin/Downloads/Assessments/PollutionMonitoringNETWAS.pdf

National Statistics Office Census-Philippines <http://www.census.gov.ph/>

Pasig River Rehabilitation Commission <http://www.prrc.gov.ph/>

Urban Poor Associates (NGO) Dennis Murphy, Tedy Anana, 2004. <http://www.hic-net.org/document.php?pid=2668>

World Risk report 2011 <http://www.ehs.unu.edu/file/get/9018>