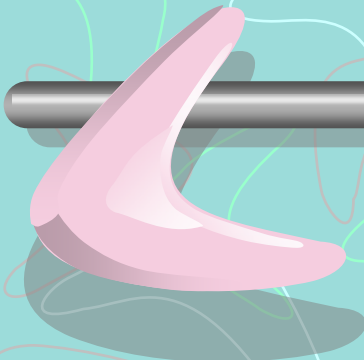


Urban River Rehabilitation: A Case Study in Marikina City, Philippines



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The Paper

Objectives:

- Present a local initiative toward rehabilitating a degraded river
- Illuminate some of the requirements and challenges of rehabilitating urban rivers in a developing country

Outline:

- I.(Urban) river rehabilitation in the Philippines
- II.Marikina river rehabilitation program in its two phases: physical restoration & water quality improvement
- III.Initiation and management of the river rehabilitation program: requirements & challenges of urban river rehabilitation



Philippine Rivers

- 51% of the classified rivers still met the standards for their most beneficial use while the rest were already polluted from domestic, industrial and agricultural sources (EMB, 2007)
- Major source of water pollution is domestic wastewater (48% of the total pollution sources)
- One-fifth of the pollution is generated by Metro Manila alone



Philippine Rivers

- In terms of biochemical oxygen demand (BOD) loading in Metro Manila, 58% comes from domestic waste and 42% from industrial waste (Manila Times, 2004)
- River pollution related to over-exploitation of resources, encroachment and the (ensuing) lack of basic infrastructure and services (Aragon-Choudhury, 2004; Cruz, 1997; Tava, 2005)



River Rehabilitation in the country

- Difficulties in rehabilitating rivers not only rest on the unavailability of technology and a general lack of funds for the implementation of programs but also on bureaucratic procedures and other socio-political factors.
 - Pasig River Rehabilitation Program grappled with problems of coordinating a multi-agency, long term-program that crosses the term of politicians (Cruz, 1997)
 - Between 30% and 40% of the relocated people return to the riverbanks as relocation sites were distant (Murphy and Anana, 2004 on Pasig River rehabilitation Program)
 - Fragmented, uncoordinated initiatives of various sectoral groups and the lukewarm attitude and token gesture of local governments are among the problems in rehabilitating Butuanon River (Muego, 2006)



River Rehabilitation in the country

- DENR lists the rehabilitation of rivers as one of the key challenges faced by the country today
- EMB selected 19 priority rivers, including Marikina River for monitoring under its *Sagip Ilog Program* (Save Rivers Program)
- Manila Third Sewerage Project (MTSP) is underway with WB financing



METRO MANILA

PHILIPPINES



Marikina, Philippines (1992)



Source: Borje *et.al.*, 2004a, 2004b, 2004c



Marikina Rehabilitation Program

Phase I (1992-1996)

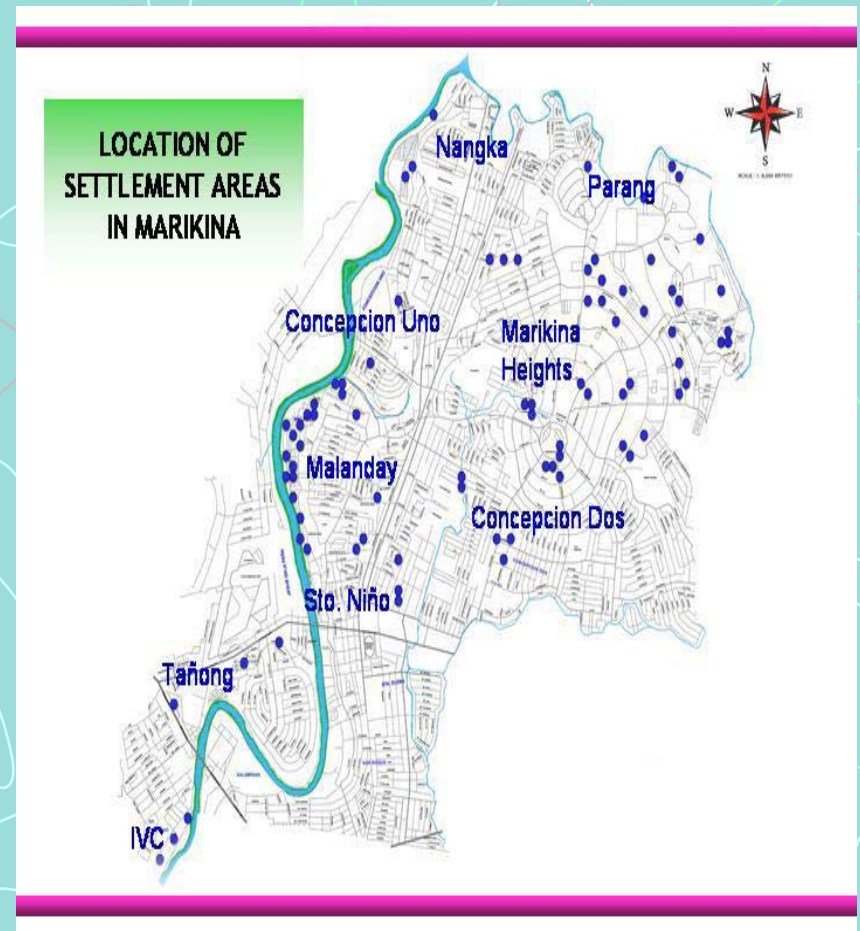
- Relocation & resettlement of slums
- Establishment of easements & protection areas, solid waste management
- Dredging & other eng'g work for flood mitigation
- Creation of linear parks

Phase II (2006-ongoing)

- Improving water quality & ecosystem health

Phase I: Physical Rehabilitation (1992-1996)

- Organized settlement sites
 - Riverbank settlers relocated to in-city settlement sites (6)
- Effective solid waste management system
 - No noticeable stench & only a few pieces of trash drift by, from upstream (Julie Borje of CentEx, Marikina)



Source: Borje *et.al.*, 2004c

Phase I: Physical Rehabilitation (1992-1996)

- Marikina River Park
 - Loss of some P10 million (US\$250,000) in taxes & revenues from removal of slaughterhouses & other industries compensated by rise in property values around 10-fold (WB & NDCC, 2004)

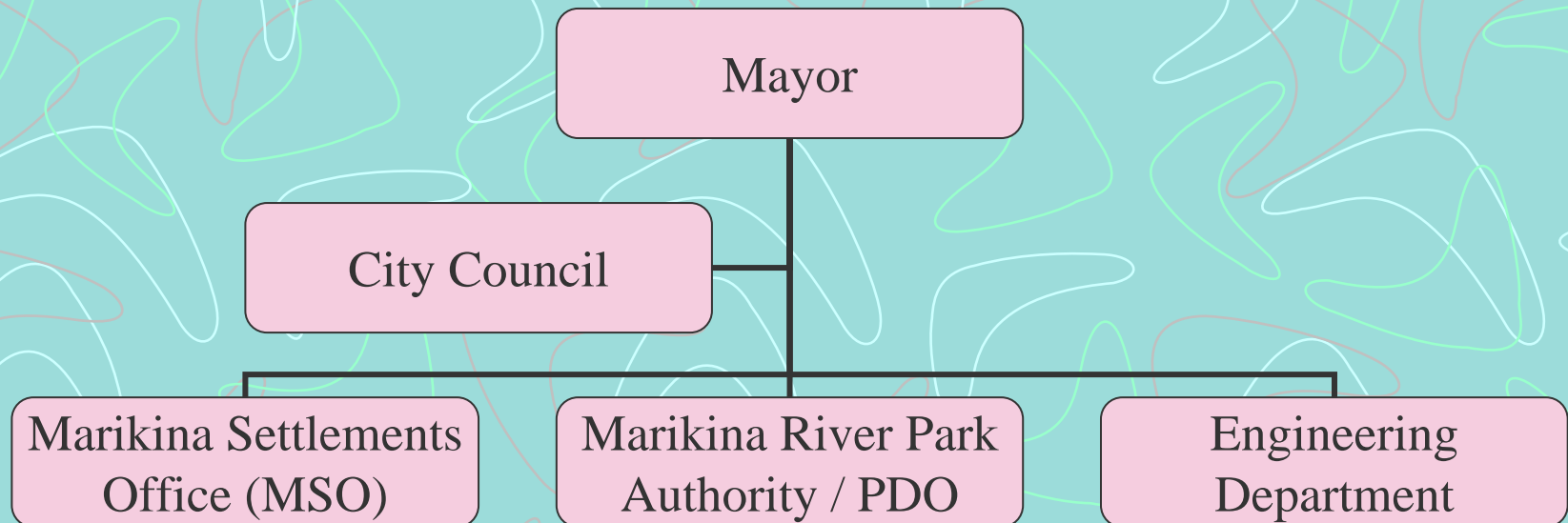


Source: Marikina City website



Phase I: Physical Rehabilitation (1992-1996)

- Utilized legal bases (local government code) & emphasized river's historical, social, environmental significance
- Organizational structure for program management





Phase I: Physical Rehabilitation (1992-1996)

Implementation

Public Information Tools

-Mayoral campaigns,
public information,
citywide registration,
survey, etc.

Incentives

-24sq.m. land at P250-400
(US\$6.25-10) per month to be
paid in installments in 20-25
years, housing, services, etc.

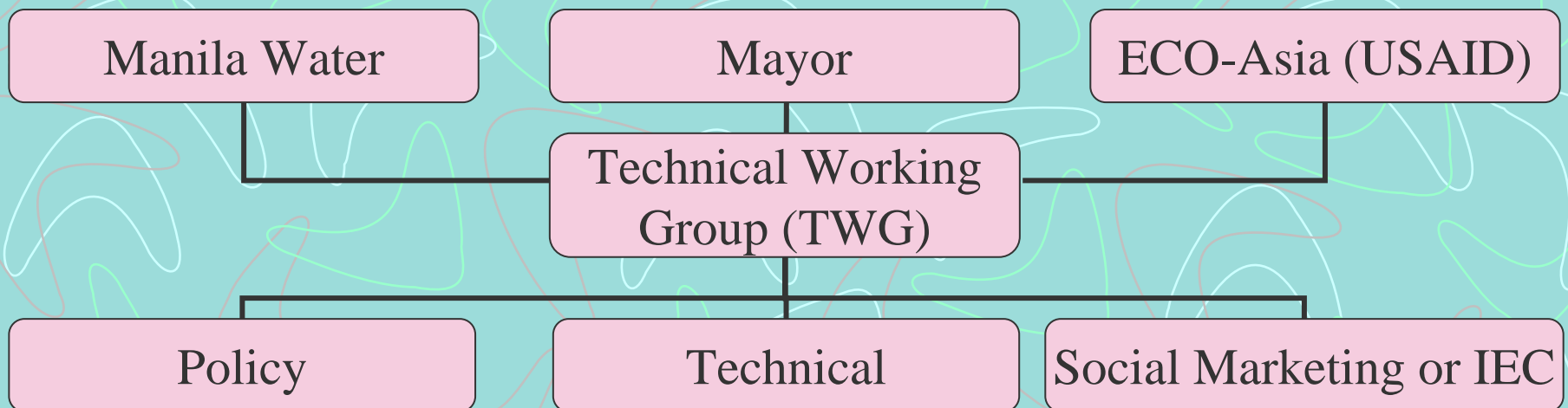
Regulation

-Enactment & strict
enforcement of local
ordinances & regulations



Phase II: Water Quality Improvement (2006-present)

- Legal bases of the program (Clean Water Act of 2004, Water Concession) & ECO-Asia-Marikina City partnership (pilot project on community WTP & sanitation action planning seminars)
- Organizational structure for program management





Phase II: Water Quality Improvement (2006-present)

Implementation

Information Tools

- Multi-stakeholder, participatory workshop: LGU, NGA, local NGOs, academe & private sector representatives
- Stakeholders action planning seminars, FGDs, surveys

Regulation

- Septage management ordinance for enactment



Analyses & Contrasts

	Phase I	Phase II
Nature of problem & potential solutions	Local & may be confined	Complex & transboundary, need short & long-term plans
Planning & decision-making	Exclusive to LGU	Consultation with partners/stakeholders
Resource availability	Available: Activities prioritized & staggered	Limited (local & national): rely on third party & community involvement/mobilization
LGU capacity	Yes: Technical & Community Management	Limited knowledge (no baseline data) & experience
Locus of control	Internal	Shared & may be external (Clean Water Act & Partnerships requiring participation)



The challenge of rehabilitating

- Lack of (financial) resources, experience & capacity including law enforcement coupled with low public awareness & involvement
- Trans-boundary nature of river/water versus rehabilitation efforts that remain local; no steering committee nor legal and institutional framework in managing the entire Marikina river basin
- Policies that limit participation especially of those directly affected by the program



Conclusion

- Local initiatives at rehabilitating rivers can generate improvements and enthusiasm AND at the same time limited in improving the overall condition of a publicly shared resource.
- Planning & management need to adapt to changes in circumstances. Regulations, enforcement and leadership are equally vital.
- (Politically) decentralized approaches at rehabilitating & managing a river are limited in the ecological realm of integrative resource management: Nature does not follow boundaries set by men.



Thank You!