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Framework planning for basin-level management - the Philippine approach

by

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Contributions are most welcome - in English or in Bahasa Indonesia.

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Acknowledgement

The paper incorporates indispensable information and observations drawn from publications and presentations by numerous colleagues, as included in the references. Also, good use has been made of the recent Policy Study on River Basin Management in the Philippines prepared by DENR with support from ADB (TA 4552-PHI).

Summary

In the Philippines, basin-level water resources management is in a state of dynamic progress. The institutional landscape is complex, and the water-related development agenda is comprehensive, with far-reaching social, economic and environmental implications.

A whole suite of management modalities have been implemented, reflecting specific needs and opportunities, from the widely autonomous Laguna Lake Development Authority to a variety of commissions, councils and committees, as well as multi-sector project management offices.

In the process, valuable experience has been achieved, invariably confirming the benefits of inter-sector coordination, inter-agency collaboration, and a functional public participation. Also, the experience is positive regarding the directions and guidance provided by the national IWRM and basin management framework planning.

Acronyms and abbreviations

DENR:	Department of Environment and Natural Resources (Philippines)
IRBM:	Integrated river basin management
IWRM:	Integrated water resources management
LGU:	Local government unit
LLDA:	Laguna Lake Development Authority
MDG(s):	Millennium development goal(s)
MTPDP:	Medium-Term Philippine Development Plan
NEDA:	National Economic Development Authority (Philippines)
NGO:	Non-governmental organisation
NWRB:	National Water Resources Board (Philippines)
PMO:	Project management office
RBCO:	River Basin Control Office (Philippines)
RBO:	River basin organisation

Glossary

Apex body: An administrative *'top'* body (placed above other bodies) (for example a National Water Resources Coordination Council). (Apex is Latin, meaning *'mountain peak')*

Framework plan: An over-all plan, establishing priorities and directions for more detailed planning

IWRM (integrated water resources management) (as defined by Global Water Partnership): A process which promotes the co-ordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems

Local government unit (LGU) (the Philippines): Instituted by the Local Government Code (1991), these comprise regions, provinces, cities and municipalities. There are 17 regions (but only one of these, the Autonomous Region in Muslim Mindanao, is regarded as an LGU); 80 provinces; 33 highly-urbanized cities; 5 independent component cities; and one independent municipality (Metro Manila). Including some territories outside this classification, there are 135 LGUs (December 2008) (Wikipedia)

Watershed: In the Philippines (like in USA), a watershed is the same as a drainage basin. (Elsewhere, a watershed is the boundary of the drainage basin)

Watershed management: (i) Management of land use in headwater areas; (ii) several other definitions apply from case to case

1 Introduction

The present paper has been compiled from recent workshop presentations by the author and by many colleagues. It describes basin-level management modalities in the Philippines, some of which are well consolidated, while others are in a state of consolidation or early implementation.

Valuable experience has been achieved in support of further strengthening and the continuous adaptation to new challenges and opportunities.

2 Context

Geography

The Philippines have 421 principal river basins, 20 of which are larger than 1,000 km2 and 18 of which are larger than 1,400 km2. The largest one by area is Cagayan (25,649 km2).

Agenda

Water-related management challenges include

- Increased coverage of safe water and sanitation;
- absence of RBOs in some of the major and principal river basins;
- a rising trend of floods and other water-induced disasters;
- inadequate river control and drainage facilities;
- pollution of surface water and groundwater as a result of urbanization, industrialization, and inadequate sewerage and sanitation facilities;
- indiscriminate land use and land development causing catchment degradation; and
- governance concerns due to overlapping functions among agencies working on water and water-related projects and programs.

The Philippines is not far from its MDG target for safe water (87 percent by 2015) and is ahead of its MDG target for sanitation (84 percent by 2015). Still, challenges remain: From 1990 to 2005, the government successfully provided water for an additional 23 mio. people; however, the population increased by 24.5 mio. over the same period.[1]

Institutions

General water resources management and water-related development is supported by the following key institutions:

- National Economic Development Authority (NEDA): The country's premier social and economic development planning and policy coordinating body

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[1] Alikpala (Dec 06)

- National Water Resources Board (NWRB): The national apex body for water resources management and development
- Department of Environment and Natural Resources (DENR): Responsible for the conservation, management, development and proper use of the country's environment and natural resources
- River Basin Control Office (RBCO) (under DENR): Responsible for management and development of priority river basins

The River Basin Control Office (RBCO)

RBCO was formed under DENR in 2006 by Executive Order 510 with the mandate to rationalize various river basin projects and programs in the Philippines and formulate the country's Integrated River Basin Development and Management Framework Plan

In July 2009, by Executive Order No. 816 of the President of the Philippines, RBCO's mandate was expanded as follows:

- RBCO to serve as the lead government agency for integrated planning, management, rehabilitation and development of the country's river basins;
- RBCO to serve as oversight office in the implementation of IRBM/IWRM plans, projects and programs;
- RBCO to provide national policy coordination for LGUs and NGOs in the development and sustainability of river basins, and to recommend on related approvals and funding;
- RBCO to serve as the central fund administrator for the river basin appropriations provided under the DENR budget

A large number of central and de-central agencies are involved in water supplies and sanitation, water quality management, groundwater monitoring, watershed management, irrigated agriculture, fisheries, hydropower, and flood management.

The country is divided into 12 water resource regions coordinated by Water Resources Regional Councils (WRRCs).

Five types of RBOs have been implemented [2]:

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 (PMO) (such as the Bicol River Basin PMO, the Cotabato-Agusan River Basin Development PMO and the Cagayan River PMO; and

5 Inter-agency Committee such as the Manila Bay River Basin Coordinating Committee and the Mindanao River Basin Task Force.

An important de-central management level is the 135 local government units (LGUs).

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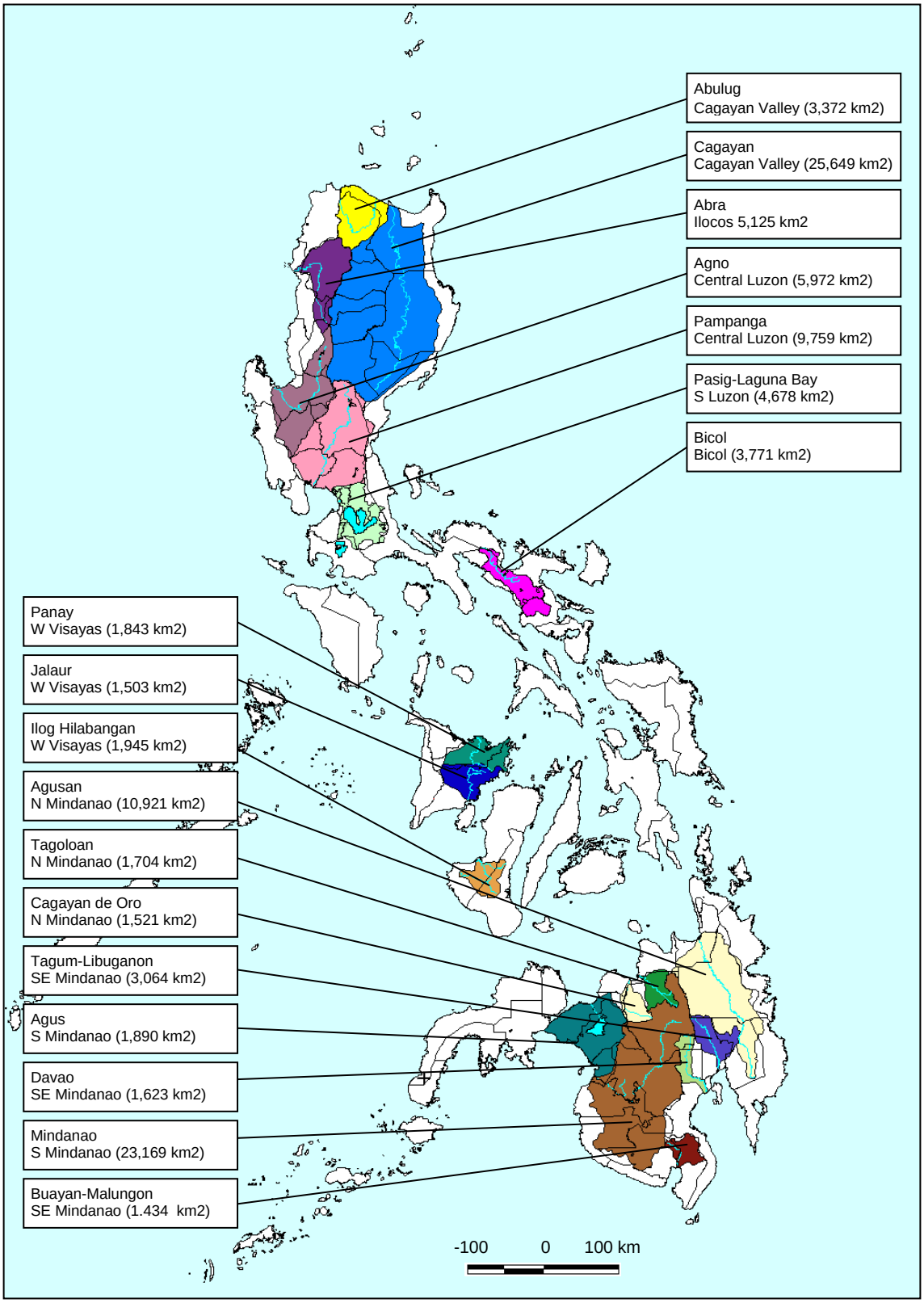
[2] Cabrido, Candido (Feb 09)

Figure 1: Major river basins in the Philippines



The figure shows basins with an area of at least 1,400 km2

3 National and basin-level planning

3.1 Overview

Planning of water resources management and water-related development is structured as follows:

National level:
- Medium-Term Development Plan 2004-2010
- The IWRM framework plan
- The national river basin framework plan

Basin level:
- Individual framework plans, master plans and roadmaps for specific river basins

3.2 National over-all development planning and IWRM planning

The Medium-Term Development Plan 2004-2010 was prepared in 2004 by National Economic Development Authority (NEDA). The plan aims *'to fight poverty by building prosperity for the greatest number of the Filipino people. The country must open up economic opportunities, maintain sociopolitical stability, and promote good stewardship—all to ensure better quality of life of its citizens´'*. [3]

The plan covers all important aspects of national development. Regarding water resources, the plan clearly adopts an IWRM approach with broad emphasis to basin-level management in general and for specific priority basins in particular.

The national IWRM Framework Plan (2007) was prepared by a task force assembling 18 government agencies, 3 non-government organisations and 1 academe, coordinated by the National Water Resources Board (NWRB) [4]. Guidance and reviews were provided during numerous consultation workshops.

The framework plan is intended to meet challenges such as

- an overly centralized, fragmented and sub-sectoral management approach;
- a need of IWRM mainstreaming at the regional and local levels;
- insufficient investment for water supply and sanitation;
- lack of technical capability of implementing agencies (including the LGUs);
- a need of efficient and effective information flows; and
- a need to link freshwater management with coastal management.

In this perspective, the plan addresses

1 Effective protection and regulation for water security and ecosystem health

2 Sustainable water resources and responsive services for present and future needs

3 Improved effectiveness, accountability, and synergy among water related institutions and stakeholders

4 Innovative responses to future challenges

The structure of the plan is shown in Appendix B.

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3 NEDA 2004

4 This and following paragraphs quoted from Alikpala (Dec 06 and Apr 07)

3.3 The river basin framework plan

The national *Integrated River Basin Management and Development Framework Plan* has been prepared by RBCO as a *'live document',* providing guidance and directions for the action-oriented planning at the basin level.

The framework identifies essential aspects of sustainable basin-level development and their corresponding management regimes, which represent one or more priorities depending on the specific conditions:

1 Prevention and response management of natural and human-made disasters;

2 water use and supply management;

3 water pollution and waste reduction management;

4 water security and livelihoods management; and

5 creation and mobilization of RBOs.

Key areas in the governance component of the framework include:

1 Establishment and adoption of policy reforms, shared visions and missions, long-term strategies and action plans that express intention, direction, targets and timeframe for integrated and sustainable basin-level management;

2 operationalisation of RBOs with inter-agency and multi-sectoral coordinating modalities that involve stakeholders in planning, implementation and evaluation;

3 development and implementation of national legislation and/or local administrative orders, in support of new and existing IWRM and river basin policies;

4 implementation of effective communication strategies and modalities ensuring that stakeholders are well informed about the benefits and threats to their local ecosystems, and about upcoming initiatives to enhance such benefits and reduce such threats;

5 institutionalization of measures to support water resources conservation and required river basin infrastructure improvements through public and market-based mechanisms, such as annual budget allocations; user fees, tariffs, taxes, penalties and fines; and adoption of corporate management approach within utilities and resource management; and

6 incorporation of capacity development as an indispensable component of all aspects of basin-level development programs, from inception and implementation to monitoring and evaluation; and, in particular , equipping local personnel and managers with the essential technical and management skills to plan and manage river basins and their water resources.

The framework

... adopts IWRM as a process and approach in dealing with water resources development and rehabilitation;

... employs integrated and holistic strategies in order to harmonize and rationalize river basin plans and programs; and

... covers river basin in scope and strategies in order to achieve manageable spatial boundaries for effective planning and river basin management.

The framework is strengthened by four supplemental framework components:

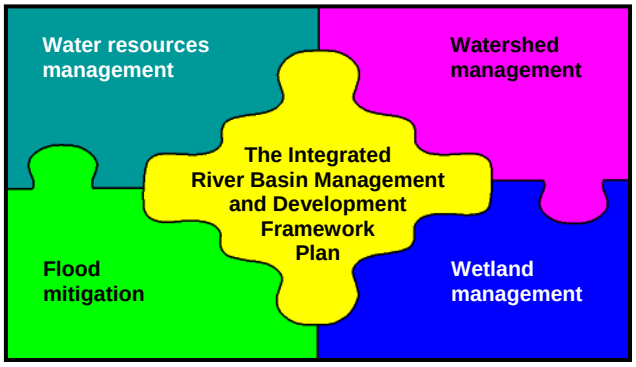
(i) Water quality protection and monitoring;

(ii) information and decision support systems;

(iii) river and coastal area protection and rehabilitation; and

(iv) river basin organisation and governance.

Figure 2: Framework plan components



3.4 Basin-level planning

By 2009, implementation of IWRM-based projects and programs is in a healthy state of progress in priority basins around the country. Examples are provided below:[5]

Agusan River Basin

- The Master Plan for the Agusan River Basin Project was completed in early 2009 by DENR with support from ADB. One of the objectives was to review options for formation of an RBO. A short extract is attached as Appendix C

Bicol River Basin

- The Bicol River Basin Water Management Office has been formed in order to address the persistent problem of rural poverty, with particular regard to recurrent flooding and other issues. Tasks include flood control and mitigation; water-related institutional development and support to inter-sector coordination; upgrading of irrigation systems; and watershed management.

Bohol Island

- Issuance of a Provincial Executive Order Establishing the Bohol IWRM Board with representatives of a multitude of sectors.
- Creation of Watershed and Management Council - which expanded the existing structure to cover the whole river basin (upstream down to the coastal area)

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5 This section is drawn from Alikpala (Jun 09); Bagalihog (Apr 09); Bongco (Apr 09); Rana (Apr 09); Tuddao Jr (Apr 09 and Sep 09); and Walag (Apr 09)

- Preparation of Water Supply Master Plan Study for Bohol Island - to identify potential water supply source

Cagayan River Basin

- The Cagayan River Basin Project Management Office is being established under DENR, with responsibilities related to environmental management, flood management, and economic development

Cebu Island

- No RBO at present
- IWRM-based master planning initiated in 2009.
- IWRM-based investment roadmap preparation initiated in 2009 on a pilot basin for Central Cebu watersheds

Laguna Lake Development Authority

LLDA was formed in 1966 and is the oldest river basin organisation in the Philippines.

The Authority is responsible for the preservation, development and sustainability of the Laguna de Bay and its tributary rivers. It undertakes resource-related and environmental

- policy formulation ad planning;
- development; and
- related regulation.

Its Board of Directors convenes representatives from central and local government bodies and the private sector.

Manila Bay

- Formation of the Manila Bay River Basin Coordinating Committee

Mindanao River Basin

- Creation of a Presidential Task Force for the Mindanao River Basin Rehabilitation and Development

Negros Island

- Study of Raw Water Pricing piloted in two municipalities in Negros Oriental. The objective is to test raw water pricing modalities. It has been found that implementation is difficult at the LGU level but less so at the basin level.
- Creation of Negros Island IWRM Council in agreement between the two provinces in order to manage the water resources in the whole Negros Island.

Pampanga River Basin

- Implementation of the *'Study on IWRM for Poverty Alleviation and Economic Development in the Pampanga River Basin'* - aiming to prepare an IWRM plan and to recommend on an institutional structure to manage the basin

5 Evaluation

National water resources management is governed by the Constitution (1976), the Water Code (1976), and the 1977 Environmental Code (1977).

In the course of time, the implementation of these instruments has progressed along a clear course towards IWRM-based, holistic management, in pursuit of the potential synergies between discrete, sector-specific development needs and initiatives, and a functional balance between central and de-central management tasks. The river basin has become a favoured unit for water resources management, and a participatory approach has been instituted.

The institutional framework has evolved accordingly, with for example the LLDA (1966), the NWRB (1974), and the RBCO (2006). Today, a variety of basin-level management bodies exist, and more are in the pipeline.

In the process, valuable experience has been achieved, invariably confirming the benefits of inter-sector coordination, inter-agency collaboration, and a functional public participation.

Also, the experience is positive regarding the directions and guidance provided by the national IWRM and basin management framework planning.

There is a need of further strengthening in many ways, including a broad and deep capacity-building. Also, it is required to maintain a dynamic adaptation in response to new knowledge (including the experience gained); new technology; new challenges; and new development opportunities.

6 Bottom line: Keys to success

- The Integrated River Basin Management and Development Framework Plan has become a useful guide for national agencies, LGUs and stakeholders, is support of sustainable basin-level development initiatives and programmes
- A flexible and pragmatic approach can allow for a basin-level management modality that is practical and fits the specific agenda and resources - be it an autonomous and powerful authority, a coordination committee, or a project management office
- Good inter-sector and inter-agency collaboration can add a substantial value to sector-based planning and development
- A participatory approach can (i) improve the quality and the value of the planning; (ii) provide ownership; and (iii) support implementation

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Appendix A: History of national IWRM implementation

National water resources management has passed the following milestones: [6]

1974: Creation of NWRB. The country was divided into 12 water resources regions and 421 principal river basins

1976: Enactment of the Water Code of the Philippines- a law governing the ownership, appropriation, conservation and protection of water resources

1976: Executive Order 192 - Sets the Philippine direction on environment and natural resources management hinged on ecosystem-based management

1998: Master plan study on national water resources management

2002: World Summit on Sustainable Development (Johannesburg) - countries agreed to formulate and implement IWRM and water efficiency plans by 2005

2004: Medium-Term Philippine Development Plan (MTPDP); adoption of IWRM approach as the general strategy in water resources management

2006: Creation of the River Basin Control Office (RBCO)

2007: The National IWRM Framework Plan - a directional plan in mainstreaming IWRM and preparation of river basin plans

Appendix B: The National IWRM Framework Plan

Sustainable outcome		***Strategic themes***
1	Effective protection and regulation for water security and ecosystem health	Ensuring rational, efficient and ecologically sustainable allocation of water
		Enhancing effectiveness in groundwater management and aquifer protection
		Achieving clean and healthy water
		Managing and mitigating risks from water related disasters and climate change
2	Sustainable water resources and responsive services for present and future needs	Promoting water conservation/stewardship and improving water use efficiency
		Expanding access and ensuring availability of affordable and responsive water supply and sanitation services
3	Improved effectiveness, accountability, and synergy among water related institutions and stakeholders	Promoting participatory water governance and supportive enabling environment
		Strengthening knowledge management and building capacity for IWRM
4	Innovative responses to future challenges	Exploring new pathways to water resource management: Water sensitive design and water rights trading

[6] Alikpala, Ramon (Jun 09)

Appendix C: Observations from the Agusan study

This study was reported in February 2009 by DENR and ADB (TA 4552-PHI). Its findings reach well beyond the Agusan River Basin.

RBOs are a special type of organisation that rely on cooperation, participation and joint management with other authorities and agencies.

Two RBO models are applied in the Philippines:

(i) The *'authority model'* (with the LLDA as the only example); and

(ii) the *'basin-wide coordination model',* which exists in several forms, including councils, commissions and project management offices (PMOs).

These models address two different needs:

- The *'authority model'* addresses the need for intensive management and protection of high value water resources subject to high levels of stress, while
- the *'basin-wide coordination model'* addresses the need to coordinate programs and resolve inter-provincial impacts of water use and development.

There are two variants of the *'basin-wide coordination'* model:

- The *council* or *commission* involves the direct participation of LGUs in a cooperative forum. This is a useful model for managing the water issues that cross province and municipal boundaries.
- The *PMO* is suitable for the identification and implementation of development projects, including projects within different sub-sectors in the same river basin, such as hydropower, irrigation, urban water supply, flood control works, and other water-related projects. The PMO is less suited for improving the coordinated management of river basin water resources in the longer term and experience indicates a limited sustainability. The reasons are
    - a lack of legal power;
    - an unsupportive perceived competition with national agencies and LGUs;
    - fixed-term, project-oriented funding; and
    - human resources and institutional capacity oriented towards design and construction, as much as management of water resources.

The difference between *'managing water resources'* and *'coordinating aspects of the management of water resources'* is not widely observed, partly due to a lack of good working models of the latter. Keys to success are considered to be:

- Direct and (at least initially) high-level participation in the RBO by the relevant LGUs;
- a formal agreement or written expression of support for the RBO;
- identification of basin-wide issues that require significant coordination, and local acknowledgement of these issues;
- identified sources of long-term funding;
- a clear, practical and agreed sharing of responsibilities and tasks between the RBO, national agencies and LGUs - who will do what.

Source: Cabrido and Taylor Feb 09

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