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IWRM in the Davao watersheds

by

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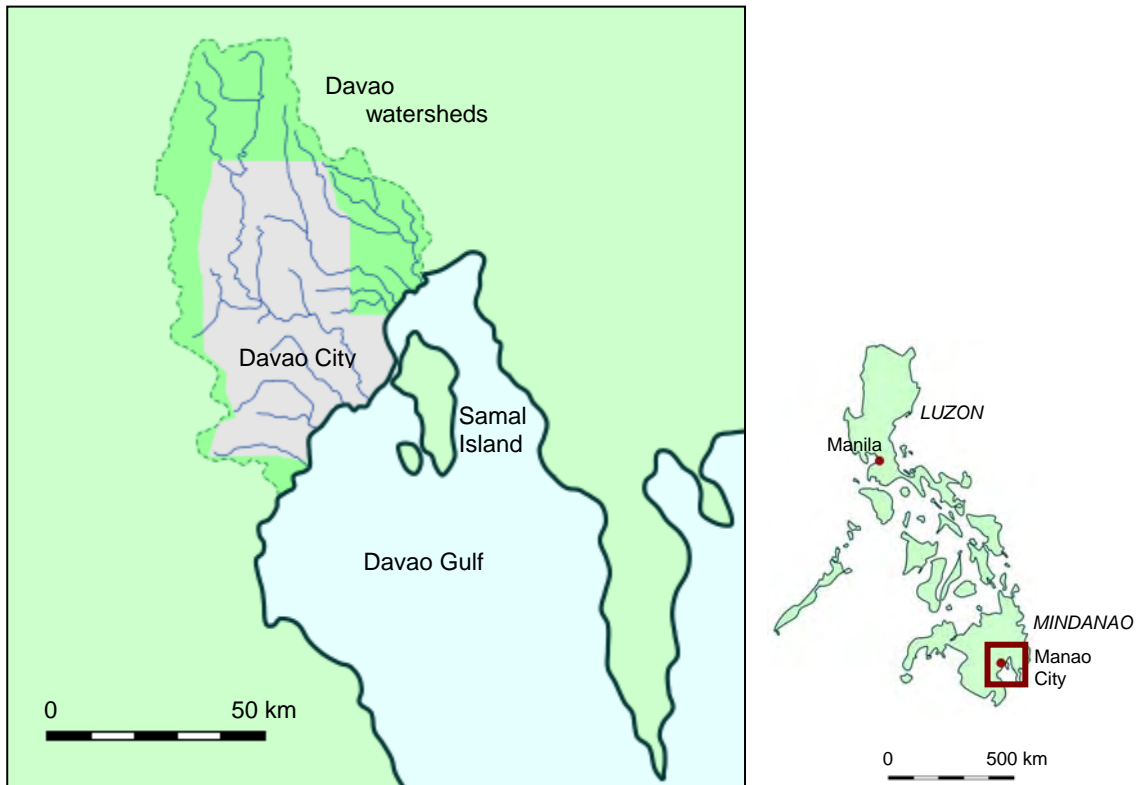
Acknowledgement

This paper builds on work since 2004 by the HELP Davao Network, collaborating with government representatives, scientists, civil society and communities.

Acronyms and abbreviations

BWMC:	Barangay Watershed Monitoring Council
CRS:	Catholic Relief Services
DCWD:	Davao City Water District
DENR:	Department of Environment and Natural Resources
DRCCC:	Davao River Conservation Coordinating Committee
GWP:	Global Water Partnership
HELP:	Hydrology for the Environment, Life and Policy (a UNESCO programme)
IWRM:	Integrated water resources management
NEDA:	National Economic Development Authority
PCEEM:	People Collaborating for Environmental and Economic Management (formerly the Philippine-Canadian Environmental and Economic Management Project)
WMC:	Watershed Management Council
WMMC:	Watershed Multipartite Monitoring Council

Location map



Summary

IWRM can enable a virtuous circle of basin-level governance, covering responsive policy, wise stewardship, participatory governance and sustainable innovative responses.

This paper describes the demand and opportunities for IWRM in the Davao watersheds on Mindanao Island, and the Davao Water Partnership and its action planning.

At the national level, the Medium Term Development Plan 2004-2011 prepared by NEDA clearly adopts an IWRM approach to basin-level development. A National Framework for IWRM (2007) was subsequently developed and endorsed by multiple government and non-government agencies.

At the city level, the Davao City Watershed Protection, Conservation and Management Code was passed in 2007. It introduces a Watershed Management Council and de-central bodies for its implementation.

A scope remains for horizontal and vertical streamlining of efforts across the region. Efforts at the basin level must align with efforts at the national level and the community level, for the sake of adding value to the benefits pursued at each level.

1 Introduction

This paper describes the formation, consolidation and contributions by the Davao Water Partnership, including action planning in support of IWRM mainstreaming in the management of the Davao watersheds.

2 The agenda

The Davao watersheds¹

The Davao watersheds are formed by a cluster of 8 small rivers that discharge to the Davao Gulf - from north to south the Tuganay, Lasang, Bunawan, Davao, Matina, Talomo-Panigan-Tamugan, Lipadas and Sibulan Rivers. They cover an area of 4,200 km², including the entire 2,444 km² area of Davao City (plus some upstream parts).

A substantial part of the area is in various states of degradation, due to unsustainable land use. There is a high demand of land for plantations, and an increasing demand of water to serve Davao City and other purposes.

Davao City (1.5 million people in 2010) has the status of a '*chartered city*' (that is not placed under a province). Metro Davao is a semi-formalized network of Davao City and 6 nearby towns and areas. Davao Region (or Region XI) is one of the 17 regions of the country.

Davao City Water District (DCWD) is a state-owned water company that serves Davao City. Today, its raw water is mostly drawn from the Talomo aquifer, but there are plans to serve an increasing demand by surface water from Tamugan River.

Meanwhile, the planned Tamugan Hydropower Project, a cluster of 3 mini-hydroelectric dams on Tamugan, Panigan and Suwawan rivers, would generate about 34 MW.

The 55,000 ha Mount Apo National Park was established in 1936. It is located some 30 km west of Davao City. The Mount Apo volcano, with its 2,954 m peak, is the highest mountain in The Philippines.²

IWRM implementation

At the national level, the Medium Term Development Plan 2004-2011 prepared by NEDA clearly adopts an IWRM approach to basin-level development. A National Framework for IWRM (2007) was subsequently developed and endorsed by multiple government³ and non-government agencies.^{4 5}

¹ In this paper, '*watershed*' is synonymous with '*river basin*', reflecting Philippine terminology

² The height of the mountain is disputed, as reflected by many entries on the Internet

³ including NEDA, Department of Finance and DENR

⁴ See Tuddao Jr. (Nov 09)

⁵ This and the following paragraphs from Hearne (2011)

In Davao City, a Watershed Management Council was established under the Davao City Watershed Code 2007. However, while a small number of meetings were held in late 2008, the Council has remained largely inactive.

Davao City Watershed Protection, Conservation and Management Code

The Watershed Code (City Ordinance 0310-07) was approved by the City Council on 23 February 2007. It is not yet fully implemented.

The code regulates the use of 34,000 ha of watershed areas that are classified into conservation areas, agro-forestry non-tillage areas and prime agricultural lands. Infrastructural development and mono-crop plantations are banned in the first two of these categories.

The code will be implemented by 3 bodies, yet to be formed:

- The Watershed Management Council (WMC), the policy-making body which is headed by the mayor;
- the Watershed Multipartite Monitoring Council (WMMC) which would monitor violations and intrusions into conservation areas; and
- the Barangay Watershed Monitoring Council (BWMC) which is tasked with monitoring agricultural activities and delineation of areas covered by the watershed code⁶.

Source: Website of the Durian Post, <https://durianpost.wordpress.com/category/watershed-code/>, 1 November 2010

Within the region there are also various initiatives led by non-government agencies from private and civil society groups.

Figure 1: Fishing in the Matina River. Marginal communities remain heavily dependent on healthy rivers



Photo: D. Hearne, 2009

⁶

Under an executive order from the City Mayor the Watershed Management Council was reconstituted in July 2011. Since the Mayor's Order a number of meetings have been initiated, however the budget allotted for 2011 is considered insufficient to start real action on the ground. The WMMC and the BWMC have yet to be formed

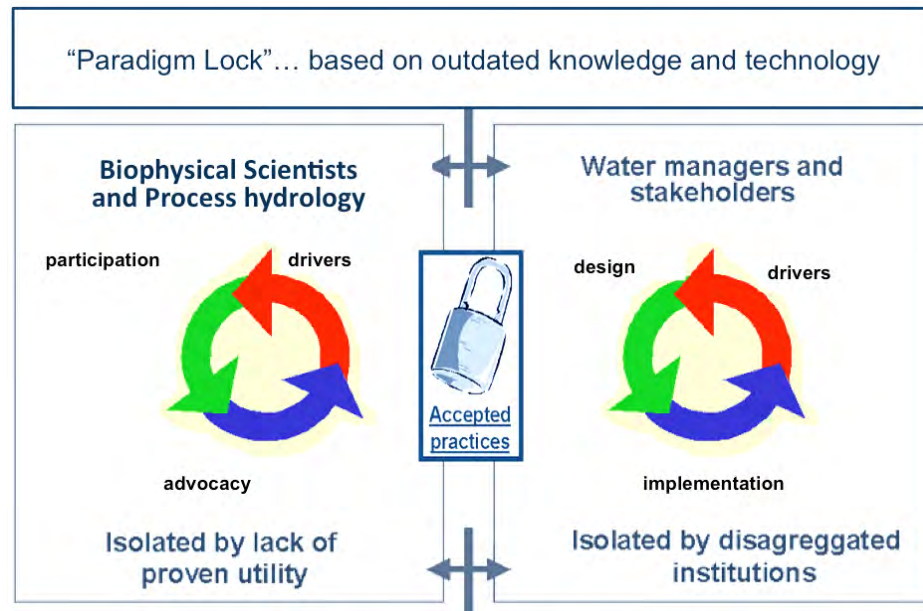
3 The need of IWRM mainstreaming

The Davao Water Partnership action planning is intended as a step towards better coordination of IWRM-related initiatives. It provides leaders with a user-driven list of priorities, providing a catalyst for more effective action on water management.

Hereby, it is assumed that the benefits from IWRM can only become reality if leaders have commitment and invest resources to build effective partnerships with government, the private sector and civil society.

The *'business as usual'* approach must be recognized for what it can and cannot achieve. This has been better understood through building awareness of the accepted practices that form a *'paradigm lock'*. This lock highlights the need to break down the fragmented nature (or silos) that water scientists, policy-makers and end users tend to operate in. To date, in Davao, this approach has built better social capital; but further action is required in order to unlock the potential of IWRM to enable *'better prosperity, lower poverty, greener growth, and greater resilience in the face of climate change and other land/water changes'*.⁷

Figure 2: A proposed shift of paradigm



4 Three decades of progress

4.1 1st decade (up to 2000): Shifts towards multi-sectoral approaches

In the late 1990ies, a number of local initiatives started building awareness and capacities in IWRM in Davao City. These efforts focused mainly in the Talomo-Lipadas and Davao Rivers. The Talomo-Lipadas Rivers overlay the major aquifers that provide the majority of piped water for Davao City. The Davao River forms the largest basin in the territory of the City. It plays a key role in ensuring water supply for much of the rural and peri-urban populations, and it is critical for other factors including food production and ecological services.

⁷

<http://www.adb.org/Documents/Brochures/Water-Brief/awdo-a-preview.pdf>

Under these circumstances, formal organizational initiatives were launched. The Philippine-Canadian Environmental and Economic Management Project, funded by the Canadian Government⁸, commenced in 1998 to help improve the conditions of the Talomo-Lipadas Rivers. In the Davao River Basin, a multi-sectoral Davao River Conservation Coordinating Committee (DRCCC) was formed in 1999. During this period, GIS mapping of the river systems began. A proposal to create a Davao River Authority reached congress, but failed to secure the necessary support.

Figure 3: IWRM milestones in the first decade



4.2 2nd decade (2000 – 2010): Enhancing policy for IWRM

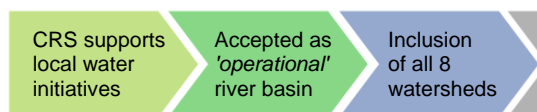
Stakeholders were now organized in the Talomo-Lipadas Rivers under PCEEM and the DRCCC was advocating for integrated planning for the Davao River. Recognizing that the development of IWRM could play a vital role in poverty alleviation in developing countries like the Philippines, the Catholic Relief Services (CRS) sought to support local watershed initiatives.

In January 2004, CRS and DRCCC jointly submitted a proposal for the inclusion of the Davao River Basin to the international HELP network of river basins under UNESCO. Using the profile of the Davao River; the Basin was classified by HELP UNESCO as an Operational Basin in June 2004.

HELP

HELP (Hydrology for the Environment, Life and Policy) was launched in 1999 as a UNESCO programme within the framework of International Hydrological Programme (IHP), in close cooperation with the World Meteorological Organization (WMO) and the Global Energy and Water Cycle Experiment (GEWEX). HELP aims to deliver social, economic and environmental benefits to stakeholders through research towards the sustainable and appropriate use of water.

Figure 4: IWRM milestones in the second decade



In early 2005, with the disbandment of the DRCCC (for various reasons, including a lack of capacity to engage all stakeholders), CRS led a series of workshops involving key local actors to localize the HELP concepts. A consensus was reached to use the HELP Network as a driver for the integration of existing initiatives in Davao City. The complexity of issues and the limited resources available framed the challenge of trying to develop an appropriate integrated river basin management approach for the City. Stakeholders and local policy-makers agreed on three immediate interventions:

⁸

Today known as 'People Collaborating for Environmental and Economic Management' (PCEEM)

- Build capacity and understanding for IWRM.
- Expand the focus of the HELP-Davao River Basin to include not only Davao River but all eight watersheds overlapping Davao City.
- Draft an Integrated Watershed Management framework for all eight watersheds.

International expertise was tapped through a twinning program with the Murrumbidgee '*HELP Demonstrational*' River Basin in Australia. Hereby, the network of technical cooperation was expanded; and key actors gained exposure to a wide range of watershed management options and approaches.

Apart from the capacity built under the twinning program, a major output from the partnership was the completion of geological and topographic studies of the terrain of the Talomo-Lipadas watershed. Recognizing the value of the study, the city government scaled it up to cover the entire City. The study, now known as the Terrain Analysis, revealed that

- the groundwater aquifers are also recharged by neighbouring river basins;
- socio economic practices have a potential to impact on the groundwater aquifers; and
- there are critical environmental areas, non-tillage areas and prime agricultural lands.

Due to the collaborative nature of the studies, there was extensive public interest in the Terrain Analysis report. The outputs of the study came shortly before a controversial decision to ban aerial spraying in banana plantations. Calls for the ban had been driven by concerns for human and environmental health. With this technical study in one hand, and calls for evidence-based policy from civil society on the other, decision-makers were compelled to seriously consider the potential impacts of aerial spraying in the City. (The ban was enacted by the City Council, but is now going through local and regional courts where its legality is questioned).

Key lessons from the technical studies, and the narrow scope of the aerial spraying ban, led stakeholders and decision-makers to recognize the need for more holistic and integrated approaches for the management of water resources. In 2006, the HELP-Davao Network developed a draft IWRM framework for the eight watersheds. This was then used as a guide for the development of the Watershed Management Code, which was enacted by the City Council in 2007. Later in the same year, the Implementing Rules and Regulations for the Watershed Code were approved.

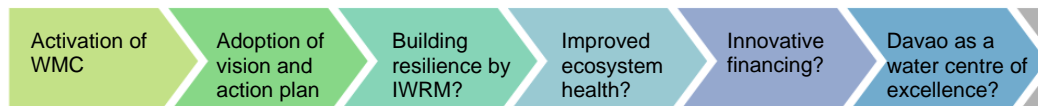
The management of the eight watersheds is now integrated under the Code. This means that the local government can take the lead in using a broader, integrated approach in development planning and conservation through the multi-sectoral Watershed Management Council. Once institutionalized, the council can initiate the formation of the Barangay Watershed Management Councils (WMCs) and the multi-sectoral monitoring team. The uniqueness of each river basin can be considered under the stewardship of the Barangay Watershed Councils, which can freely explore various appropriate strategies, as long as they are within the common framework as defined in the Code. Unfortunately, except for a small number of meetings held in late 2008, the WMC has remained largely inactive.

4.3 Entering the 3rd decade of IWRM in Davao (2011 – 2020)

Ongoing challenges

As we enter the third decade of IWRM in Davao, the challenge is how to consolidate the strengths of the sectoral initiatives and harmonize efforts in order to reach greater and longer-term goals. Recent issues (such as pollution of waters from pesticides, groundwater abstraction, water and energy conflicts, and flash floods) have increased the awareness of groups to collaborate and to seek solutions based on reliable information.

Figure 5: IWRM milestones proposed for the 3rd decade



Networking and collaboration have become a common strategy, and the government has taken a progressive stance with the development of technical studies and ongoing support to civil society groups. The formation of river basin organizations will be crucial in promoting more adaptive management approaches and building more productive and resilient communities. In Davao City, the WMC continues to have the support of a wide range of stakeholders, and expectations remain high that the necessary leadership and resources will be provided to the WMC so that it can effectively fulfill its mandate.

Looking forward

The scientific approach as advocated by civil society groups has reinforced the paradigm shift in local governance - from decisions based on politics to decisions based on scientific principles and reliable information from various stakeholders. Harnessing this technical cooperation will be advantageous for the Watershed Management Council.

IWRM proceeds step by step, gradually following a '*spiral*' process.⁹ Such a spiral approach is useful for the conceptualization and implementation of IWRM, particularly when preparing for establishing the formal river basin organization.

This has recently been initiated through the HELP-Davao/ Davao Water Partnership action planning. Along with the development of the IWRM Action Plan itself, the stakeholders also defined a water vision, and called for a new, open and inclusive partnership that would provide more leadership, commitment and resources that are essential for the effective delivery of IWRM. This is elaborated in the following chapter.

The endorsement of the IWRM Action Plan by the Regional Development Council sets a formal framework for intensifying IWRM efforts in Davao City and scaling up these efforts across Region XI.

⁹

Please refer to UNESCO and NARBO (March 2009)

5 Action planning for IWRM

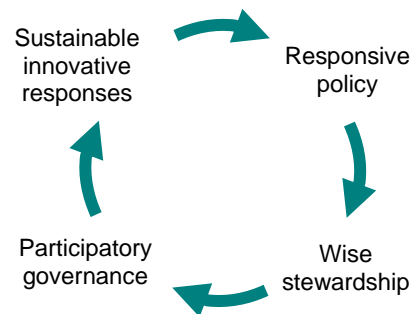
While ongoing coordination efforts have clearly built social capital for better water management in Davao Region, there is little evidence that this improved social capital has yet been translated into improved ecosystem health or economic benefits for the rural and urban communities across the region. This is not seen as a failure of IWRM but rather a recognition of the need for more focused and integrated actions that are backed by clear and measurable indicators.¹⁰

Responding to the challenges

The action planning sought to help stakeholders reflect on the range of activities that have been delivered and the positive outcomes from these efforts. Recognizing the need for IWRM - through identification of needs and problems in the basin - can become a catalyst for improving water resource management in the individual basins. The UNESCO-NARBO guidelines on IWRM highlight the importance to proactively '*recognize*' needs, and our understanding of the situation can be measured by how well we can make others understand – and act.

Prior discussions with key water stakeholders had identified the need to adapt the national level framework to better match specific local conditions. With the high-level outcomes provided by the National Framework,¹¹ 4 key local action areas were identified in order to catalyse better action on water that is in line with national level objectives. These are shown in the figure below.

Figure 6: The virtuous circle of basin-level governance



Policy recommendations

High-level decision makers must not only have a deep understanding of the IWRM process, but also share ownership of the successes and failures. With this in mind the participants in the action planning made a number of policy recommendation for adoption by the RDC XI Economic Development Committee, the RDC XI Social Development Committee and the elected heads of local Government across the Davao Region including Davao City.

Recommendation 1: The Davao Water Vision

The Davao Water Vision should be adopted and implemented as a shared aspiration of all water stakeholders in the Davao Region: '*Water for a healthy, vibrant and productive society for all Davaoeños*'.

¹⁰ Chapter extracted from Hearne (2011)

¹¹ Please refer to Tuddao Jr. (November 2009)

Recommendation 2: The Davao Water Action Plan

The Davao Water Action Plan should be adopted as an integral component of the Regional Development Agenda. The Plan provides a roadmap for local actions for the years 2011 – 2012, aligned with national IWRM objectives.¹²

Recommendation 3: The Davao Water Partnership

The Davao Water Partnership should be consolidated and institutionalized as an 'open and inclusive partnership to build leadership, commitment, and investments for effective IWRM' that will strive to 'catalyse a full spectrum of stakeholders to manage water - based on sound science, sustainable economics and through competitive partnerships'.

Recommendation 4: Adoption and implementation of IWRM in the Davao Region

IWRM should be adopted as the framework for enabling 'responsive policy, wise stewardship, participatory governance and sustainable innovative responses'.

The GWP definition of IWRM is applied: 'A process to promote the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems'.

In order to catalyse delivery of IWRM it is recognized that government alone cannot deliver the required changes. Partnerships are required between government, the private sector, science and society. The Davao Water Partnership can serve as a vehicle for driving IWRM forward across the River Basins in Davao City and the wider Region XI.

Recommendation 5: Recognition and involvement of the HELP Davao Network

The HELP Davao Network should be recognized and involved as an 'important partner in providing science-based responses to water challenges and spearhead actions towards the attainment of the Davao Water Vision'.

6 Observations

The following observations were made during the work:

- Broad support must be mobilized and maintained - from politicians, the government system, different water users, opinion leaders, NGOs and civil society;
- this, in turn, can require time (and patience);
- even a bit of progress (even if modest at times) can amplify itself, and can be an indicator of success in its own right. Pick the low-hanging fruit while keeping the aim of more far-reaching achievements.

A scope remains for horizontal and vertical streamlining of efforts across the region.

Efforts at the basin level must align with efforts at the national level and the community level, for the sake of adding value to the benefits pursued at each level.

¹²

The action plan is available from the Davao Water Partnership website: www.davaowaterpartnership.org

Figure 7: Local water champion: Davao City Council Chairperson for Environment leads discussions during a field visit to flood-affected communities



Photo: D. Hearne, 2011

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