

# Water Operators' Partnerships in Asia

## Case Study I

**GWOPA**  
Global Water Operators' Partnerships Alliance

**UN HABITAT**  
FOR A BETTER URBAN FUTURE



Metro-Cebu Water District  
Cebu, Philippines

City West Water  
Melbourne, Australia

Water Operators' Partnerships in Asia  
**Case Study I: Metro-Cebu Water District and City West Water**

Published in Marseille, March 2012

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**HS/014/12E**

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Photos: page 4 © Cesar E. Yñiguez;  
pages 6, 9, 10, 11, 13, 15 and 20 (left)

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**Printer:** France Document, Marseille



## Introduction

A water operators' partnership (WOP) is any kind of association between water or sanitation operators conducted on a non-profit basis with the aim of developing capacity. These partnerships are being promoted as a way of helping the world's public water and sanitation operators to sustainably deliver adequate water and sanitation for all.

This report presents three interesting Case Studies on water operators' partnerships in Asia. The aim is to provide readable and accessible reports on WOPs in practice – how they work, and what kind of difference they make. The authors have looked at how the partnerships were set up, implemented and monitored; the changes and improvements they brought about in the partner utilities; and their impact – both achieved and anticipated – on service delivery, future investment, and replication.

These studies were conducted for the Global Water Operators' Partnerships Alliance (GWOPA), hosted by UN-HABITAT, under our obligation as the United Nations city agency to help the world meet the water and sanitation target of the Millennium Development Goals.

As part of our World Urban Campaign for better cities, we consider the partners doing this excellent and vital work as city changers making a real difference on the ground for many, many households and in many countries.

It also forms part of our remit to share and promote knowledge and understanding of water operator partnerships. Together with GWOPA's growing online database of WOP profiles, the case studies help fill the huge knowledge gap around this important and high-potential practice. They aim to shed light on how the partnerships are currently carried out, what works, what doesn't, and how they can be improved for greater impact and wider adoption.

Indeed, the WOPs (including what some refer to as public-public partnerships) are being implemented by a growing number of organizations around the world, and they vary greatly in their scope, form and content.

Those presented here are not meant to be taken as prototypes or best practices, but as a sampling of the diversity of not-for-profit partnerships possible between water and sanitation operators.

It is our fervent hope that the excellent partnerships presented here will inspire more operators to take up the practice, learn some lessons, and also help financial supporters and facilitators build more effective partnerships.

## Acknowledgements

The main author, Cesar E. Yñiguez, and the supporting consultant, Digby Davies, could not have produced the study without the goodwill, help and cooperation of many people and they wish to express their gratitude to all of them. They include Armando H. Paredes, Ms. Maria Rowan E. Teñedo, Ernie T. Delco, Michael M. Balazo, Noel R. Dalena, Jose Eugene B. Singson Jr and Ferdinand E. Nicanor of Metro Cebu Water District, Philippines; and Matthew Giesemann, Ms. Danielle Roche, Max Anderson, Peter Nastasi, Bruce Collins and Gary Richardson of City Water West, Melbourne.

Special thanks are also due to Advisory Panel members Nancy Barnes, Arthur McIntosh, David Milnes, Darren Saywell and Siemen Veenstra for their valuable expert inputs and comments on drafts. Jared Farrell and Anke van Lenteren are to be thanked for their collaboration and creative design.

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## Key facts

### Partners

City West Water – **Melbourne, Australia**  
Metropolitan Cebu Water District – **Cebu, Philippines**

### Facilitator

Asian Development Bank

### Approx. cost

USD 127,000

### Aim

Reducing non-revenue water and improving operational performance

### Approach

Capacity building, exchange visits, training and demonstration

## Key facts

12 months (initial WOP), plus 6 months (1<sup>st</sup> extension), and 12 months (2<sup>nd</sup> extension)

### Duration

Non-Revenue Water reduced in pilot area, new techniques (e.g. for asset management) introduced

### Results

Policy reform and reorganization requiring legal and political support

### Long-term outlook

Continuation of partnership, Metro Cebu Water District engaging with other Water Districts in the Philippines, City West Water undertaking other Water Operators Partnerships

### Success indicators

## The background

Metro Cebu is the main urban centre in the province of Cebu in the Central Visayas islands group of the Philippines. Located along the central eastern portion of Cebu Island, it also includes the nearby island of Mactan with its industrial districts and international airport. Metro Cebu encompasses Cebu City, the oldest in the Philippines, and an additional seven cities and six municipalities.

The local public drinking water utility has insufficient water sources, uneven distribution of water supply (hours and pressure) and is constrained from extending service in part by its very low tariffs. Reducing non-revenue water is one

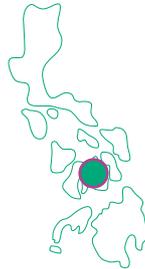
way of supplying more water to its customers and extending supply to those not currently connected. The utility has an ongoing PHP 87 million (approx. USD two million) seven-year non-revenue water reduction program of service connection replacement. Nearly all leaks (98 per cent) are from old failing polybutylene pipes. There is an overall need to replace water distribution mains which would mean very high capital investment.

The Asian Development Bank, headquartered in Metro Manila, has been active in investing in the water supply and sanitation sector in many Asian countries. For the last three years, ADB has had an active Water Operators Partnerships programme as part of the Waterlinks platform. By the end of 2009 there were 11 partnerships in progress. More are being added and a further six received the bank's support in 2011 ■



Detailed map of part of MCWD's distribution system

### Metropolitan Cebu Water District



#### Location

Cebu, Philippines

#### Populations Served

1.8 million in an area of 677 km<sup>2</sup>

#### Ownership

Government Corporation

#### Service Area

Cebu City and 7 other adjacent cities

#### Services

water supply

#### Employees

900

#### Service Connections

120,300 service connections with about 800 km of distribution mains

#### Coverage

50-60%

#### Production

With a total annual production of 61 BcL

#### Challenges

NRW, water sources, uneven pressure, deteriorating infrastructure, incomplete network coverage

#### Source

103 deep wells and one surface water source

### City West Water



#### Location

Melbourne, Australia

#### Population

4 million

#### Ownership

State of Victoria

#### Service Area

central business district and the inner and western suburbs of Melbourne

#### Services

water supply and wastewater services

#### Employees

300+ people

#### Volume

90BL/y drinking water annually

#### Assets

4,217 km<sup>2</sup> of water mains

#### Source

3 reservoirs managed by Melbourne Water and transfers 94% of sewage and wastewater collected to a Melbourne Water Sewage Treatment Plant (STP) for treatment and disposal

## The partnership agreement

Metro Cebu Water District was introduced to the Asian Development Bank Water Operators' Programme during a training workshop on performance benchmarking for South East and South Asian water utilities in Bangkok in early 2008. The bank then approached the Water Services Association of Australia for a suitable mentor for the Filipino partner and City West Water was duly proposed. In June 2008, two City West managers conducted a survey of Cebu City. Together with the Metropolitan Cebu Water District managers, they developed a programme to improve Cebu's operational performance. At the end of the visit, an agreement was signed between Metropolitan Cebu Water District and City West Water to implement the programme.

The water operators partnership was to run initially from July 2008 to May 2009. It began in earnest in August 2008 and during implementation it was extended twice – first from June to December 2009, and second, from January to December 2010.



Signing the Twinning Agreement

## Objectives

The partnership set out to identify and address priority operational improvements and to train Metro Cebu staff on key operational processes. Agreed focus areas were non-revenue water reduction, water distribution, data collection and management systems. The partners set out to institutionalise a system of process benchmarking, with the aim of achieving measurable improvements in two or more by the end of the partnership period ■

### Four main tasks emerged:

- 1 Reducing non-revenue water in a pilot area using district metering and associated technology;
- 2 Improving water supply distribution performance through hydraulic modeling;
- 3 Using Geographic Information Systems (GIS) for more effective asset management;
- 4 Improving overall Management Information System.

# Implementing the agreement

## Exchange visits

Between July 2008 and December 2010, the Australians conducted eight visits to Cebu, usually for one week at a time. A team of five Cebu managers travelled to Melbourne in January 2009 for exposure to City West Water operations.

## Non-revenue water

The partners sought to reduce non-revenue water from 39 per cent to 15 per cent in the selected pilot district metered area. Visiting City West Water staff oversaw the establishment of the metering in the pilot area and the investigations into water loss within it. Work was carried out over a period of six months, during which meters were monitored. After the pilot study, the City West Water team conducted an audit that validated the processes used, and verified the meter readings and non-revenue water calculations.

## Hydraulic modeling

City West Water recommended developing an appropriate water distribution hydraulic model to help Cebu deal with the uneven distribution of water supply through its 800 km of distribution mains. In March 2010, City West Water conducted a five-day water supply hydraulics seminar for 15 Metro Cebu Water District engineers.

## Workshops

The initial seminar was followed four months later by another week-long workshop for 10 of the engineers who attended the first seminar, on

the WaterCAD Hydraulic Modeling and Pumps Systems. This group of engineers was nominated as Cebu's hydraulic modeling team and was then tasked with gathering distribution system data. Further discussions on how to develop and calibrate an appropriate hydraulic model for Metro Cebu were held in November 2010 with guidance from visiting City West Water staff but the partners were unable to come the obstacle of inadequate physical data in the given time frame.

## Organizational improvement

While the main tasks were being undertaken, City West Water and Metro Cebu staff held discussions on organizational reform, performance management, key performance indicators and management reporting.

Tutorials for Metropolitan Cebu Water District senior and associated affected personnel managers were provided as well as in customer service and financial management. City West staff recommended Metro Cebu restructure to remove duplication of efforts, clarify accountability and focus on performance.

## Performance indicators and incentives

City West Water encouraged Metro Cebu Water District to tie its management bonus scheme more closely to the achievement of key performance indicator targets related to its core business. The two utilities reviewed Cebu's business and came up with a master list of indicators focusing on outcomes rather than processes. It was recommended that Cebu focus on improvements in these key indicators.

## Reporting

The two utilities jointly reported to the Asian Development Bank. The first formal report was submitted at the end of Stage 1 in May 2009, covering project administration, approach, outcomes, lessons learned and recommendations for an extension. A second formal report was submitted to ADB in December 2009 at the end of the extension period which updated the first report and concentrated on the project outcomes and the reform processes that had been put in place by the Metro Cebu Water District as a result of the Water Operators' Partnership.

## Management and coordination

The Manager for Asset Management at City West and the Manager for Corporate Planning of Cebu were assigned to coordinate the partnership activities. Before each of the one-week visits a work plan was prepared. Every visit began with a review of progress since the last visit, and ended with a review of agreed steps to be undertaken prior to the next visit. This continuous joint assessment process enabled the partnership to keep its focus while providing the flexibility to introduce new issues as they arose.

One-on-one discussions took place at key intervals during the partnership between the general managers of the partner utilities. This dialogue enabled clarification and elaboration on the challenges faced by Cebu and served as a check on the appropriateness of the expert advice City West Water was providing. The general manager of the Australian utility was consulted often and the Metro Cebu counterparts regarded him as an exemplary resource person ■



MCWD Visiting City West Water

## Partnership outcomes

Using the District Metered Area approach to detect and repair leaks, the partners successfully reduced non-revenue water in the pilot area to 11.6 per cent, well below the target of 15 per cent. However, they acknowledged limitations in using the district metered area approach as a non-revenue water reduction strategy for the wider Metropolitan Cebu area. In addition to known difficulties applying the approach to old distribution systems, like that of Metro Cebu, Metropolitan Cebu Water District cannot now afford to carry out the widespread rehabilitation and repair programme that would be needed.

The partners operated with a degree of flexibility and periodically adapted the work plan to respond to changing circumstances. As the water operators partnership progressed, the City West Water team recommended additional efforts to improve leak detection competency and suggested using different equipment.

Efforts to reduce non-revenue water shifted focus towards improving Metro Cebu Water District's asset management practices. City West Water guided its partner in the development of asset management strategies through both office and field-based asset management tutorials. The approach was more challenging than initially presumed due to the absence of up-to-date inventories. Metro Cebu Water District therefore began an asset inventory on Mactan Island, where more information was available on the pipes, fittings and equipment than in the older parts of the service area.

The partners discussed organizational reform issues, and agreed that although not all desired outcomes had been achieved, there were many useful lessons that Cebu would eventually be able to apply in reducing non-revenue water and managing water supply evenly in its distribution system.

Reducing non-revenue water throughout Cebu's service area will be a decidedly long-term endeavour, as will be completing the hydraulic modeling of its distribution system. The partnership helped Metro Cebu address some major problems, even if results are unlikely until the medium to long-term ■



MCWD observing leak detection at City West Water



Repairing leaks in Cebu's District Metered Area

## Non-revenue Water

Non-revenue water in the pilot area was reduced to 11.6 per cent – a dramatic impact but in less than 1 per cent of Cebu's service area. Key problems here were a lack of financial resources.

## Hydraulic modeling and asset management

Development of a hydraulic model for Metro Cebu's water distribution system could not be completed during the WOP period due to inadequate physical data to produce and calibrate the model. Nevertheless, the seminar and courses on pipeline hydraulics and hydraulic modeling, and the tutorials on asset management were valuable and have allowed MCWD to continue work on these components.

## Organizational improvement

As mentioned above, MCWD started implementing the first stage of organizational restructuring that will see the creation of a service department to improve MCWD's performance in relation to its customers. CWW provided a number of wider recommendations during the WOP on improving MCWD's organization structure. But there are local legal and social factors that make it impossible for MCWD to embark on a wholesale programme of organizational reform. Nevertheless MCWD is mindful of the need for change and will engage with stakeholders on these matters in future years ■

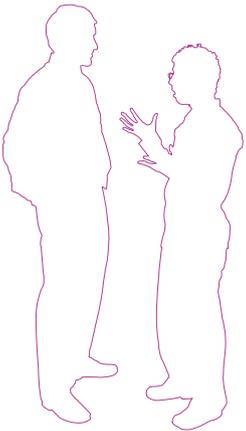
## What the Partners say

### Metro Cebu Water District

- The water operators' partnership provided an effective, low cost approach to non-revenue water reduction through competency development and use of improved leak detection equipment;
- Insights into new policy approaches and best practices were gained from courses in asset management, organizational structure, performance management, key performance indicators, customer service and financial management;
- Staff development improved;
- The water operators partnership enabled networking with other utilities in the region through participation in water operators' partnership conferences;
- Asset management – fundamental to water utility management worldwide – was introduced;
- Metro Cebu is now better equipped to solve its problems based on the experience.

### City West Water

- The partnership has been a great way to develop new staff, while providing fresh inspiration for long-time employees;
- It has been an effective way to exercise their corporate social responsibility;
- The partnership has also been an inexpensive way to lift the company's profile internationally and provide those involved with unique perspectives and privileged insight on the state of the world's water.



The activities were undertaken despite the differences in culture, operating environment, initial communication difficulties, and differences in practices among the Filipino and Australian twinning partners.

Based on their experience in the partnership, and exposure to other partnerships in the region, the two utilities made some recommendations for improving future partnerships.

## Recommendations

Funding agencies need a long-term view – it takes at least six months for confidence and trust to be built;

Partnership activities need to emphasize sustainability;

Sufficient time must be set aside for capacity development and knowledge transfer;

Exchange visits need to be longer (two to three weeks) in order to track progress, reinforce recommendations, and adequately guide the recipient through the process;

Equipment is needed for the partnership. These investments need to be planned and budgeted for;

Learning should be properly documented for sharing with others in developing other partnerships;

The partnerships need marketing and promotion at all levels.



Jeepney transport plying the Mandaue-Cebu route which spans MCWD distribution network

## Partner contributions

Contributions to the partnership from CWW and MCWD comprised staff time in Cebu City and Melbourne, materials and other incidental expenses. Staff time was also spent by CWW and MCWD senior managers in participating in ADB conferences and events organized by ADB to attract more partner pairs to the ADB WOP programme.

CWW staff contributed about 20 person-weeks in Cebu, 8 person-weeks in Melbourne, and 10 person-weeks promoting WOPs in Canberra, Manila, Korea, Bangkok, Beijing, and Brisbane for an equivalent cost of AUD 143,200.

MCWD staff contributed 25 person-weeks in Cebu, mostly for the NRW pilot project, 10 person weeks in Melbourne and 4 person-weeks promoting WOPs in Korea, Bangkok, Beijing and Manila for an equivalent cost of PHP 381,800.

ADB reimbursed the cost of travel and accommodation of CWW and MCWD staff for the exchange and twinning promotion visits with a budget of about USD \$37,000. It also provided the services of two consultants who facilitated the diagnostic visit that determined the terms of the partnership, the joint preparation of the work plan, and helped put these together in the memorandum of agreement ■

Source	Type of input	Value
City West Water	38 Person-week equivalents	143,200 <sup>AUD</sup>
Metro Cebu	39 Person-week equivalents	381,800 <sup>PHP</sup>
Asian Development Bank	Travel Accommodation Diagnostic consultants	37,000 <sup>USD</sup>
<b>Total value of WOP</b>		<b>127,000<sup>USD</sup></b>

## Next steps

The participants agreed that the partnership had been valuable, and the Asian Development bank shared this view. The WOP provided CWW with awareness and useful tools for resolving many of its key issues. The pilot work and capacity building on non-revenue water paid off and will continue to benefit MCWD as time goes by. It can be seen with hindsight, however, that the ambitions on asset management and hydraulic modeling were too high, given Cebu's current resources and upstream challenges that could not be addressed in the scope of the WOP. The radical organizational reform measures recommended were also not feasible for MCWD, now or in the near future, but may provide a model for the longer term.

MCWD needs external investment if it is to apply the new skills and practices acquired through the partnership. It also needs political support to enable reforms such as tariff increases and reorganization. During the WOP, City West Water observed that MCWD operates with impressive efficiency given the significant constraints it faces. The partners believe that the WOP has put MCWD in a better position to attract not only the investment but also the political backing needed.

In late 2011, the WOP is still alive and CWW and MCWD continue to communicate and share advice as a result of the trust and friendship that were developed during the partnership. The impacts of the partnership will continue to be felt well into the future, as MCWD gradually implements the plans and road-maps the partners developed ■



Clustered meters of low income consumers

# Timeline

• Metropolitan Cebu Water District taken into ADB's WOPs programme

Early 2008

May 2008



Diagnostic visit to Cebu



• MOU signing

June 2008

• Start of WOP

Aug 2008



A visit to Cebu



Nov 2008



A visit to Cebu



Jan 2009



A visit to Melbourne



Preparation

Phase 1

# Timeline



This timeline is not exhaustive, but highlights some key events in the WOP.

# Sample study tour schedule

## Typical City West Water twinning trip work plan

Time	Monday 11 December	Tuesday 12 December	
8.15	Pick up from hotel (MG, DR)	Pick up from hotel (MG, DR)	
8.30	<p>Week's Agenda (MG)</p> <p>Presentation by Metropolitan Cebu Water District</p> <p><b>Progress on:</b></p> <ul style="list-style-type: none"> <li>• Non revenue water</li> <li>• Strategic plan</li> <li>• Organizational reform</li> <li>• Performance management</li> <li>• Feedback on Metropolitan Cebu Water District contracts (DR)</li> <li>• SCADA</li> <li>• GIS</li> </ul>	<p>Working Session: Water Distribution</p> <p>Presentation by MCWD on current distribution management</p> <p>Discussion on options and formation of an action list to address gaps</p> <p>Development of a work plan for 2010 – what, where, when and who</p>	
12.30	Lunch	Lunch	
13.30	<p>Tutorial (MG)</p> <p>Asset Management (1)</p> <p>Topic: 'Asset Management in the Office'</p> <p>Presents a top down view of asset management in a utility business</p>	<p>Tutorial (MG)</p> <p>Financial Management and Reporting</p> <p>Topic: 'Financial Management Fundamentals'</p> <p>Presents an overview of financial management in a utility business and follows with some key requirements</p>	
16.30	Return to hotel	Return to hotel	
18.30		'Christmas' dinner hosted by City West Water at Marriott Hotel (GM & AGMs, MG, DR)	

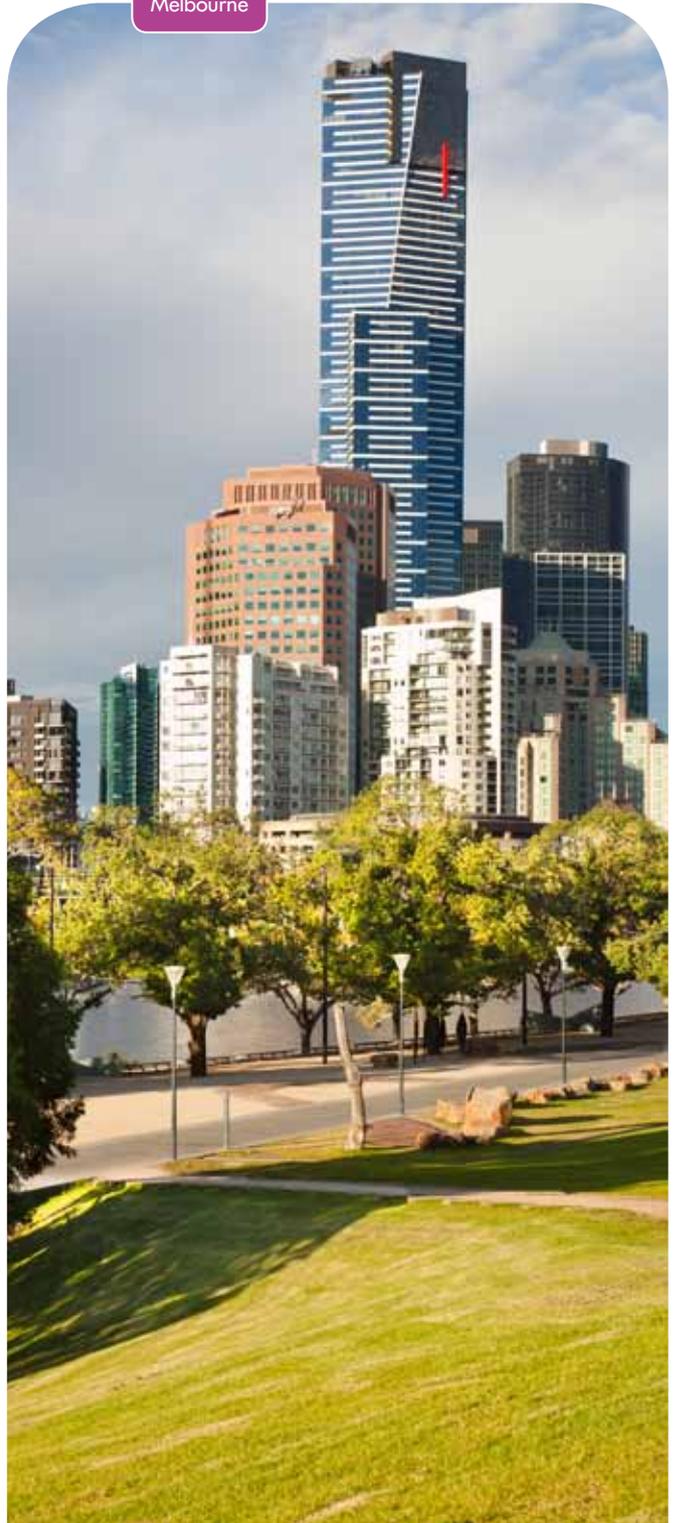
# Sample study tour schedule

	Wednesday 13 December	Thursday 14 December	Friday 15 December
	Pick up from hotel (MG, DR)	Pick up from hotel (MG, DR, BC)	Pick up from hotel (MG, DR, BC)
	<p>Working Session: Non Revenue Water</p> <p>Development of a work plan for 2010 – What, when, where and who</p>	<p>Working Session: Key Performance Measures</p> <p>Presentation by MCWD on current key performance measures</p> <p>Overview of good performance management practices</p> <p>Discussion on issues and possible next steps</p>	<p>Presentation by CWW:</p> <p>Summary of week</p> <p>Agreed actions</p> <p>Report to ADB</p> <p>2010 Work Plan</p> <p>Travel to airport (MG, DR)</p>
	Lunch	Lunch	Lunch
	<p>Tutorial (MG)</p> <p>Asset Management (2)</p> <p>Topic: 'Asset Management in the Field'</p> <p>Presents a bottom up view of asset management in a utility business</p>	<p>Tutorial (MG, DR, BC)</p> <p>Customer Service Management (includes elements of stakeholder management)</p> <p>Topic: 'Managing Customers'</p> <p>Presents the elements of good customer service and follows with stakeholder engagement</p>	<p>Key performance indicator development (BC)</p>
	Return to hotel	Return to hotel	
		Dinner hosted by Metropolitan Cebu Water District at Marco Polo Hotel (GM & AGMs, MG, DR)	



Cebu

Melbourne





## Abstract

Water Operators' Partnerships (WOPs) are peer support relationships between two or more water or sanitation operators, carried out on a not-for-profit basis in the objective of capacity development. This is one of a series of three impact-oriented case studies conducted on WOPs in Asia. It is intended for water and sanitation service providers, governments, development banks, donors, WOPs facilitators and all who are interested in gaining a better understanding of this solidarity-based approach to helping public operators improve their capacity to sustainably deliver water and sanitation services for all.



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