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Proceedings of the Thematic Workshop on Local Government Financing for Water, Sewage and Sanitation

12 - 16 December 2006
Haikou City, Hainan Province, PR China

The East Asian Seas Congress 2006

Global Environment Facility

United Nations Development Programme

International Maritime Organization

Partnerships in Environmental Management for the Seas of East Asia

United Nations Environment Programme - Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

The World Bank

PROCEEDINGS OF THE THEMATIC WORKSHOP ON LOCAL GOVERNMENT FINANCING FOR WATER, SEWAGE AND SANITATION

United Nations Environment Programme - Global Programme of Action for the Protection of the Marine Environment from Land-based Sources (UNEP/GPA),
The World Bank
and
GEF/UNDP/IMO Regional Programme on Building Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)
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East Asian Seas Congress 2006
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1. INTRODUCTION

1.1. The urgent requirements for pollution prevention and reduction facilities and services in the East Asian Seas region are well recognized. Water resources development and wastewater management remain at the heart of the struggle for economic growth, poverty reduction and sustainable development. It is in this context that the Thematic Workshop on Local Government Financing for Water, Sewage and Sanitation was conducted as part of the International Conference on Coastal and Ocean Governance of the East Asian Seas (EAS) Congress 2006, which was held in Haikou City, Hainan Province, PR China, on 12-16 December 2006. The thematic workshop addressed the financing issues of a sector that traditionally is non-profitable — it is severely under-funded in East Asia, with some countries achieving only one percent coverage in sewerage and sanitation. The presentations focused on the challenges facing the sector, the conditions required to overcome the challenges and successful case studies that can be replicated. With increasing demand and deteriorating environmental quality, coupled with increasing financing requirements, there is a need to improve performance for this sector — financially, technically and operationally. Investing in water supply, sanitation and waste management infrastructure involves a long project cycle. If the targets for the UN Millennium Development Goals (MDGs) and commitments to the Global Programme of Action for the Protection of the Marine Environment from Land-based Sources (GPA) implementation are to be achieved, major changes and innovative approaches need to be developed and executed to reduce the time span from policymaking to service provision.

1.2. Responding to the need to enhance delivery of targeted outputs of the World Summit on Sustainable Development (WSSD) Plan of Implementation and the UN MDGs, the first workshop focused on Public and Private Sector Investment in Water, Sewage and Sanitation: Approaches and Case Studies. The workshop was held on 12 December, and was co-organized by The World Bank and PEMSEA, and co-sponsored by the United Nations Environment Programme/Global Programme of Action for the Protection of the Marine Environment from Land-based Sources (UNEP/GPA). It focused on issues surrounding investments and private sector participation in water, wastewater, sanitation and, in part, solid waste management,

as well as the necessary reforms, policies and institutional arrangements, including regulation and incentives.

1.3. In recognition of the outcomes of the Second Intergovernmental Review (IGR-2) Meeting of the GPA, the second workshop on GPA Implementation — National and Local Government Challenges was held on 13 December, and co-organized by UNEP/GPA and PEMSEA. The workshop discussed the actions to be pursued at the local, national and regional levels to overcome constraints concerning GPA implementation and the pollution reduction and coastal management initiatives that can be replicated.

1.4. The third workshop on Policies and Incentives for Scaling up Investments for Pollution Reduction, held 13 December, focused on the challenges facing East Asia in increasing pollution reduction investment. Examples of successful revolving funds, best practices and the concept of the proposed GEF Project Preparation Revolving Fund (PPRF) for East Asia which will be implemented by The World Bank, United Nations Development Programme (UNDP) and PEMSEA, were discussed.

1.5. The three workshops provided an opportunity to review some of the innovative approaches being planned and implemented. In some cases, there were lessons learned from the experience, while others have just started the process. There were discussions on why a particular approach was chosen, and the challenges to moving forward. An evaluation was made on how local government units and the private sector can be further engaged in the application of new and improved methods of financing water, sewage and sanitation services, and the roles of national governments, international agencies and donors in such efforts.

1.6. The thematic workshop program is shown in Annex 1 and the list of speakers in Annex 2.

2. THEMATIC WORKSHOP KEYNOTE SPEECH

2.1. The keynote speech “Local Government Financing for Water, Sewerage and Sanitation: Overview of Issues” was delivered by Dr. Cielito F. Habito. Having been involved in the EAS Congress 2003 in Putrajaya, Malaysia, particularly as chair of the Workshop on Finance, Investment and Corporate Responsibility, he started his presentation with the outcomes of this workshop. Water was observed as the next crisis point, with the poor often paying much more for water than the rich.

2.2. Organized sewerage and sanitation systems remain extremely limited in coverage. Meeting MDGs for water and sanitation will cost $100 billion, but only up to $5 billion can be raised from public resources. Although water supply, sewage and sanitation services are public goods, public-private partnerships (PPP) are inevitable given the limited sources. Official development assistance (ODA) and donor resources have dwindled, while private financial flows have grown geometrically. Financing options that therefore remain are resources from users and taxpayers.

2.3. People, including the poor, are prepared to pay for natural resource services and environmental protection. However, market forces alone are not sufficient to create

demand for sustainability, i.e., there is a need for deliberate efforts on public awareness and education.

2.4. The key challenges involve rigidities in the policy environment; short-sightedness among investors, service providers and politicians; access to technology, which is usually proprietary and expensive in developing countries; and barriers of trust among governments, civil society, private/business sector and financial institutions. Effective champions are not made overnight, and a wider dissemination of good practices and working models is needed to spread the good news on investment. “Imitation” may not always be attractive, so adoption and adaptation of what works may be more desirable.

2.5. There are necessary ingredients to promote and realize investments in environmental improvement infrastructure. The first set involves politics and institutions. Government leaders — both national and local — must have a vision of sustainable development and the political will to push for reforms and implement essential investments in water, sanitation, pollution reduction and resource management. Improved governance (public and corporate) is needed to stimulate private investments, especially in ensuring transparency, accountability and making the policy and regulatory environment an enabling tool rather than being prohibitive and restrictive. Building partnerships with various stakeholders, having community support and social acceptability are crucial — from the project identification and planning stage to the implementation stage, which involves sustaining the operations and financing. There must be effective champions of the environment, from local leaders, media, youth, etc.

2.6. The second set of necessary ingredients for environmental investments involves economic and financial aspects. There is a need to put in place appropriate user fees and tariff structures that balance full-cost recovery and affordability and equitable access, especially for the poor. To encourage more local governments to invest in these types of projects, which have long-term gestation periods, low-interest and long-term financing schemes have to be developed. On the part of the private sector, appropriate risk-sharing arrangements and loan guarantee systems are considered to be more efficient than direct loans.

2.7. There are various financing options, but with different degrees of availability/accessibility, especially at the local level, such as national government revenue transfers, local taxes and other revenues; external grant assistance (ODA, philanthropy, etc.); concessional loan facilities (municipal development fund, trust funds); bank borrowing; public borrowing (municipal/local bonds); and PPP arrangements.

2.8. Local governments are best placed to meet the challenge for the following reasons:

1. Efficiency:
    - **more responsive**: local government is more accessible, more sympathetic, quicker to respond to people’s needs
    - **fosters accountability**: closeness between people and the local government makes it harder to hide irregularities
    - **reduces costs**: due to stronger accountability and stronger ownership, resource allocation is determined by the beneficiaries themselves

- **mobilizes local resources better**: citizens are more willing to invest their time and resources if they have a role in decisions affecting their welfare and future
- **encourages innovative solutions**: by fostering self-help, localized and tailor-fit approaches (vs. one-size-fits-all solutions) are more likely to emerge

2. Equity:
   - **more democratic***:* promotes participation of people directly affected by decisions
   - **protects minorities***:* permits some degree of self-determination for minority communities
   - **promotes broad-based development:** helps avoid bias for urban centers and the national capital region; better serves rural development
3. Sustainability:
   - **promotes ownership***:* participation in planning projects gives people a personal stake in their success and provides incentives to ensure effective implementation and monitoring
   - **promotes political stability***:* avoids winner-takes-all outcomes; permits sharing of political power

3. WORKSHOP ON PUBLIC AND PRIVATE SECTOR INVESTMENT IN WATER, SEWAGE AND SANITATION: APPROACHES AND CASE STUDIES

3.1. Introduction

3.1.1. The Workshop was conducted on 12 December, co-organized by The World Bank and PEMSEA, and co-sponsored by UNEP/GPA. The first session on Local Government Approaches to Leveraging Environmental Investments was chaired by Mr. Aldo Baietti (The World Bank). The second session on Innovative Financing and Revenue Generation at the Local Government Level was chaired by Dr. Cielito Habito (Ateneo de Manila University Center for Research and Development). The workshop program is shown in Annex 1; the list of speakers in Annex 2.

3.1.2. The mobilization of new and additional financial resources is an indispensable component of initiatives for pollution prevention and reduction facilities and services, which are well recognized urgent requirements in the region. With the continuing decline in the volume of overseas development aid and the inability of countries to allocate sufficient portions of their national budget to environmental protection and restoration, finding innovative ways to meet the financial shortfall to counter the continuing degradation of marine and coastal resources in the region has become critical.

3.1.3. It is in this context that a number of initiatives — responding to the need to deliver the targeted outputs of the WSSD Plan of Implementation and the UN MDGs — have been undertaken in the region, and globally. These initiatives utilize innovative approaches to financing and managing water, sewage and sanitation facilities.

3.2. Workshop Presentations and Discussion

Session 1: Local Government Approaches to Leveraging Environmental Investments

3.2.1. Challenges in Promoting Private Participation in Water and Wastewater: Towards a Financially Sustainable Framework

3.2.1.1. As an introduction to the workshop and first session, Mr. Aldo Baietti of The World Bank discussed the challenges in promoting private sector participation in water and wastewater. This sector is faced with: a) low service coverage in the backdrop of increasing demand; b) traditional financing constraints — scarce resources with lingering subsidy mentality; c) tariffs not recovering costs; d) low capacity to service existing debts; e) inherently inefficient systems and poor operating performance resulting in high losses; f) non-existent or ineffective regulatory framework; and g) governance issues, e.g., non-transparent transactions.

3.2.1.2. With such significant challenges ahead, it is essential that the performance of the sector be improved, and to make most use of the investments that have already been committed and not squander them due to ineffective policies. The way to attract additional investment and financing starts with closing the revenue gap, cover costs and look toward reliable sources of financing for covering operating and investment costs. Water services and management are always paid for by someone, inevitably consumers (through user tariffs) or taxpayers (from fiscal resources) — or, to a much smaller extent, by bilateral/multilateral assistance. Subsidies can play an important role but these must be used prudently, since they can be utilized in the short term to bridge a finance gap but primarily in cases where affordability is an issue and for the benefit of poor communities. With tight budgets and competing commitments, most governments cannot rely on continuing subsidies for the sector, particularly in efforts to build up coverage to meet the MDGs. Closing the revenue gap is thus essential, with consumers playing a more important role.

3.2.1.3. While water is a basic human need, there is a definite cost incurred in its delivery to communities. In most cases, users are not paying for the cost of water, but only for the delivery service. However, the higher the willingness of users to pay, the more financing options exist. With more financing options, the more services can be extended to needy communities. Only operators or water managers that generate sufficient cash can operate and maintain present systems and attract investments for expanding services and improving management. Unless the source of funding is a reliable one, little advance will be made in commercializing the operation and attracting private financing. Closing the revenue cycle depends both on reducing costs and increasing revenues.

3.2.1.4. Long-term financing is critical to investments in water and wastewater. Water investments to be affordable must be amortized over a long life. Typically, in many developing countries, a 15-year amortization is the practical minimum required in order to produce a tariff that is both affordable and politically acceptable. This can vary substantially, however, and will generally depend on the willingness and ability among consumers to pay the tariff as well as the technical configuration of the system. Small systems, particularly, can be extremely costly and even with a relatively long amortization period will not render an affordable tariff for consumers.

3.2.1.5. Donor financing with tenors reaching or exceeding 15 years provides an adequate financial cushion for most utilities by allowing them to honor their debt service commitments. However, private financing schemes, generally fail in this regard since most project loans currently available through private sources cannot finance investments affordably beyond seven to eight years in foreign currencies; and domestic loans are typically of shorter maturities or not available altogether. Moreover, the tremendous interest to make export finance available for private power and telecommunications does not exist generally for water projects. Water projects do not involve a high foreign content and are comprised largely of local civil works. For this reason, financing for water projects should ideally be through local sources.

3.2.1.6. With cost implication, credit enhancements may be available to extend maturity periods on foreign-denominated loans. For domestic loans, the availability of long-term funds rather than maturity risk is currently a fundamental constraint, especially in the absence of well-established domestic capital markets in developing countries. Thus, private finance schemes generally fail to meet the amortization requirements of water projects, leaving a fairly significant financing gap if they rely solely on such schemes to foster development in the sector.

3.2.1.7. Governments should continue to draw private participation in the sector in terms of both management and financing. This approach will reinforce the notion of third party-binding relationships and appropriate risk allocation. To the extent that the sector is not yet ready for private participation, the government should nevertheless move quickly ahead with establishing such binding relationships and commercial arrangements as well as allocating risk appropriately among the various government and state-owned enterprises. Proper roles must be defined for each of the parties involved in these transactions and these should be backed by binding and fully enforceable legal agreements or contracts that hold any party for failure to uphold their commitments, irrespective of whether the entities are private or not. Under such binding arrangements, the transition to private management and financing in the sector will be greatly facilitated.

3.2.1.8. The new trend is for hybrid models that combine public with private financing. The two alternative routes were presented. The traditional route leads from direct public management (default option) to management contract, then to lease or affermage and to concession. The second route involves first introducing private financing, followed by the introduction of private management, if possible.

3.2.1.9. There are criticisms for both approaches. The traditional route is often criticized as being too slow, not going far enough and admittedly, the results on the ground of the gradualist approach have not been very encouraging. This needs to be balanced with the political-economic considerations involved in more accelerated approaches. Most new PSP (Private Sector Participation) transactions are management contracts or leases/affermages. These contracts bring the professional competence of the private sector, but bring little or no private financing. Other ways of financing than through the operating company need to be found.

3.2.1.10. The second approach has been criticized as being a poor substitute for reform — the argument being that reform may not take place or may not be enduring in what is essentially a public sector approach. Both sets of criticisms are valid. The key is to enhance these models to make them more effective.

3.2.2. Regulation of Water and Sanitation Services

3.2.2.1. Mr. Alfonso Guzman of Castalia Strategic Advisors discussed the challenge of attracting investment in water, sewage and sanitation services. He also reviewed the issue of balancing investments with regulation through tariff setting, while ensuring cost recovery, reasonable rates of return and profit to the utility operator, and affordability and quality of service to consumers.

3.2.2.2. Water supply, sewerage and sanitation utilities are often natural monopolies (single or very few suppliers) due to high capital costs, different operating cost structure and captured market. This means that customers cannot choose between competing suppliers, so operators of these utilities may be able to exert monopoly power and charge high prices. There is also no competitive pressure to ensure that they provide the services, which customers want. Thus, some economic regulation may be necessary.

3.2.2.3. Economic regulation would require providers to offer services that their customers want, and to charge reasonable tariffs — in the sense that tariffs are enough to cover the efficient cost of providing the service, including allowing a reasonable return on capital employed. The tariff setting process should provide assurance to investors that, if they operate efficiently, reasonable costs will be recovered.

3.2.2.4. There are two main traditions for regulating privately operated utilities. The first relies on courts or arbitrators to address disagreements. This approach is common: a) when services are by a private sector provider under contract with the government, with the public sector retaining ownership of the assets and giving decisionmaking responsibility to a government department or minister; or b) when establishing a performance contract/license with a publicly-owned service provider. The second approach relies on government regulatory agencies and is most common with privately-owned systems.

3.2.2.5. Establishing a separate regulator for government-owned facilities/utilities can increase transparency, reinforce the incentives for good governance and make it politically easier to implement reasonable tariff increases. Creating a separate regulator, however, is not without its potential drawbacks. The decision to create a separate regulator for public water utilities should depend on sector objectives, governance and incentive structures, as well as institutional capabilities.

3.2.2.6. Different jurisdictions can use different organizational structures to perform similar regulatory functions. When choosing a regulatory approach, policymakers should consider: a country's social, political and legal traditions; its institutional capacity; and the potential impacts on existing sector reform programs. There is no one "best practice" approach to economic regulation in water supply, sewage and sanitation.

3.2.2.7. In the case of Metro Manila, Philippines, the rules for regulating the concessionaires are set out in Concession Agreements, which are virtually identical for two zones. The Concession Agreements provide for the creation of a special Metropolitan Waterworks and Sewerage System Regulatory Office (MWSS-RO) to regulate the contracts, and set out the functions of the Regulatory Office (RO). The RO was envisioned to be a quasi-independent body, but operates under the jurisdiction of MWSS and reports to the MWSS Board of Trustees ('the Board'). The RO has five regulators with five-year terms. The Board has nine members. When the RO issues a resolution, it is passed to the Board for approval. In many respects, this is a form of "regulation by contract," but with a special regulatory body established to regulate the contracts. The problem is that the regulators were often unable to make credible decisions on the concessionaire's appeals, especially with regard to tariff levels. The RO was unclear as to whether its role was to enforce the regulatory rules set out in the contract, or to try and exercise discretion and effectively change the rules. As a result, it was unable to find a workable solution to the problems caused by the peso devaluation, or to enforce concession payment obligations. The confusion also led to many of the RO's decisions being subjected to interference by the Board or other politicians, or being legally disputed.

3.2.2.8. In the case of the Egypt Water Irrigation Project, advice was needed on a range of issues: the most effective type of economic regulation to implement; the most appropriate institutional arrangements to establish; and how to address the need for tariff adjustments. The decision of whether to adopt an institutions- or contract-based form of economic regulation considered predictability, legal traditions and local capabilities. A key lesson from Metro Manila was to avoid mixing the two types of regulation.

3.2.3. Private Specialized Operators of Water and Sanitation Utilities in Small- and Medium-size Municipalities: The Colombia Case Study

3.2.3.1. The main problem of water and sanitation utilities in developing countries is political, institutional weakness and inefficiency (i.e., no autonomy; no accountability; no customer orientation; no market orientation; and deficient service provision).

3.2.3.2. Dr. Menahem Libhaber of The World Bank discussed the Colombia case as an example to show why the incorporation of specialized operators (private sector) in the provision of water, sanitation and sewage treatment services is an effective method for rapidly improving the performance of inefficient public utilities. PSP or PPP (Public-Private Partnership) bring in specialized operators to provide the services, protect the utilities from political intervention, provide financing and the drive and capacity for achieving additional required financing. PSP or PPP in environmental investments has been proven successful in Soledad, Nátaga, Cartagena and Barranquilla in Colombia, as well as in La Paz (Bolivia), Buenos Aires (Argentina), Havana (Cuba), Chile and many other cases.

3.2.3.3. To attract the private sector to enter the business of small utilities, financial viability of the utilities must be assured. In the PSP models discussed in this presentation, the financial viability was achieved by government subsidies for the poor communities, using the minimum subsidy approach (also known as the negative subsidy concept) and full-cost pricing for the rest of the population.

3.2.3.4. The Government of Colombia, with World Bank support, launched its Water Sector Reform Project aimed at supporting medium-sized municipalities with up to 400,000 people and communities of under 12,000 residents, using the support of specialized private operators to improve the delivery of water and sanitation services. The government provided the municipalities participating in the project with an adequate level of subsidies on three principal conditions: a) commitment to incorporate private operators to ensure institutional improvement; b) commitment to increase tariffs to the maximum socially acceptable level which covers at least O&M costs; and c) subsidies to be directed to benefiting only the poor (while the non-poor pay the real cost of services) and to environmental investments. As a rule, operators were required to commit to providing only the part of the required investment that can be financed by tariffs, with

the rest coming from the public sector. Operation and maintenance of the systems are not subsidized and a cap on public contribution is stipulated in bid documents.

3.2.3.5. Two PSP models have been developed under the project, one for medium utilities and the other for small utilities. For medium utilities, operators must be private companies or joint ventures with experience in operating similar-sized water and sewerage systems, and they must be able to mobilize required funds for investment. They function under the "Operation with Investment Contracts," lasting 20–30 years. These Contracts stipulate the required investment and include financing commitments by the operators covering parts of the work for which they are responsible. Public funding is allocated to a specified work, approved by the government and municipality, without going through the operator's books. However, the operator designs and manages those works, and acquires operating rights to the resulting assets. This arrangement ensures that the infrastructure provided by the government is totally satisfactory to the operator.

3.2.3.6. For small communities, "Constructor-Operator Contracts" apply, which last 10–15 years. They are aimed at attracting small and medium-sized construction companies, possibly in a joint venture with small consulting firms. The firms do not need to have operating experience of water utilities, though they must have a track record in managing commercial firms and the appropriate capacity and ability to be trained. For small utilities, the contract is basically a concession with capital investment being financed largely by the public sector. And unlike the medium-city contracts, operators are also system constructors. Operators must establish special purpose companies with separate accounts, to construct and operate the water and sewerage systems.

3.2.4. PPPs for Sewage Treatment and Solid Waste Management in Guangzhou, PR China

3.2.4.1. Sewage treatment projects are one of the public service projects in PR China. In the past, public benefits are more emphasized than financial benefits; therefore, the local government undertook more responsibility. The sewage treatment projects were mainly invested by the local government, bearing the huge investment pressure to improve the environment.

3.2.4.2. The Guangzhou government is trying to attract more foreign investment into sewage treatment and solid waste management to lessen the investment pressure on the local government, and enhance the local enterprises' management level. Ms. Yuan Xiuli of Guangzhou Municipal Sewage Treatment Ltd., Co. presented examples of private sector participation in solid waste and sewage management in Guangzhou, the benefits derived and lessons learned. Private sector involvement helps to separate the double

roles of the government as manager and constructor, and enhances the government's management responsibility as supervisor and regulator.

3.2.4.3. Around RMB1,005 million were invested by a foreign company to construct the Xilang sewage treatment plant, which was built by co-investment from the local government (33 percent) and a foreign company (67 percent). RMB120 million was invested in Jinsheng sludge treatment by a local company, which was established using the build-operate-transfer (BOT) process. The Shijing and Longgui sewage treatment plants are also going to be built using the PPP procurement process. Currently, the total sewage treatment capacity is 16,151 m^3 per day. Based on these huge investments, the sewage in Guangzhou is well treated, and the water quality is better than before.

3.2.4.4. For the Xingfeng sanitary landfill, which disposes domestic solid waste from Guangzhou City, there is a design-management contract with a French company (Onyx, now Veolia). This arrangement helped solve the problem of the local government's lack of experience in technical design and management of such a facility. With construction being the responsibility of local government, the building period was also shortened.

3.2.4.5. A key lesson learned in Guangzhou is that there are various options for financing sewage treatment and sanitary landfills and different types of partnership agreements with the private sector. Investment arrangements should be chosen according to the needs of the local community and its benefits, and should not simply be copied. Local government should have more of a supervisory role and act as regulator rather as the operator and manager. A negotiating team must also be established by the local government to deal with private investors.

3.2.5. Manila Water Company: A Case Study on PPP

3.2.5.1. Ms. Lala D. Fabella of the Manila Water Company, Inc. presented a brief background of the concession framework, and the key factors that contributed to the improved performance of the concessionaire.

3.2.5.2. The Metropolitan Waterworks and Sewerage System (MWSS) was the public utility previously engaged in the provision of water supply and sanitation services for Metro Manila's nearly 10 million population. It was faced with under-investment in assets, high system losses, very poor service level, high non-revenue water and a huge debt. In 1997, the Philippine Government auctioned two 25-year concessions for water, sewerage and sanitation services through competitive bidding. The winning consortia, Manila Water Company for the East Zone and Maynilad Water Services for the West Zone, took over the responsibility for water and wastewater

treatment, water distribution, bill collection, and overall management. The government retains ownership of assets.

3.2.5.3. Since then, Manila Water faced significant challenges, including the Asian financial crisis in 1997 and the El Niño phenomenon in 1998. However, the company managed to pull through, posting significant achievements in operating results: a) it more than doubled its billed volume from 440 million liters per day (mld) to 938 mld; b) it increased provision of water supply from 300,000 households to 803,000 and provision of water to over 900,000 low-income people; c) it reduced non-revenue water (NRW) from 63 percent to 30 percent; and d) it improved 24-hour water availability from 26 percent to nearly 97 percent of its covered area. The financial viability of Manila Water significantly improved from a net loss in 1997 to a PhP2,011 million net income in 2005. This was achieved through a successful corporate transformation, business expansion, fiscal discipline and implementation of appropriate tariff adjustments. A price review, which was successfully conducted in 2003, resulted in an overall rate adjustment of over 70 percent. Manila Water was also successful in getting the support of its local and foreign creditors which now includes the German Development Bank (GED) and the International Finance Corporation (IFC). It also established a transparent and professional relationship with the regulator, and forged partnerships with NGOs.

3.2.5.4. The company developed a “We Care” corporate philosophy in 1999 to enhance customer focus and employee empowerment. To sustain its customer focus, the company established several strategic Service Areas — each servicing the needs of about 60,000 to 70,000 households. Each Service Area is further subdivided into smaller hydraulic territories managed by Territory Teams which focus on water supply and demand, NRW monitoring and control, and customer service. Incentives were also given to employees. Manila Water employees have become shareholders of the company through an Employee Stock Option Plan.

3.2.5.5. The company has just started implementing the Manila Third Sewerage Project, a $64 million landmark project with the World Bank to improve sewerage and sanitation service for more than three million people. The project will involve construction of sewage and septage treatment plants, procurement of de-sludging tankers and information-education campaigns on proper wastewater disposal and environment preservation.

Session 2: Innovative Financing and Revenue Generation at the Local Government Level

3.2.6. Managing Phnom Penh Water Supply

3.2.6.1. Mr. Long Naro, Deputy General Director of the Phnom Penh Water Supply Authority (PPWSA), presented the key measures undertaken

by the local water utility to improve its service. PPWSA is responsible for ensuring direct access to clean water for people living in the city of Phnom Penh. PPWSA was transformed into public enterprise in 1997 with full financial and administrative autonomy under Sub-decree 52 of December 1996 of the Royal Government of Cambodia. PPWSA is operated under the supervision of the Board of Directors comprised of a representative member from each of the different ministries of the Government. PPWSA has 569 permanent employees, which translates to 4 employees per 1,000 customers.

3.2.6.2. Through the Master Plan in 1993, and with support from bilateral donors, such as the Japanese Grant Aid, French Grant Aid, ADB and The World Bank, the PPWSA has completed the major rehabilitation of the existing facilities and part of the expansion. With all the negative elements and inefficiencies facing the utility before 1993, the first step that PPWSA began was the 'changing of culture' based on educating, motivating and disciplining its staff and the public.

3.2.6.3. The second step taken by PPWSA was to restructure the whole organization. Higher management were given more direct responsibility. More dynamic personnel from younger generations with better qualifications were promoted to higher levels with more responsibilities. Inefficient 'old timers' in high positions kept their positions, but were moved into more dormant roles.

3.2.6.4. The third step was to ensure self-sustained operations through continuous improvement on the consumer database, upgrading of the computerized billing system, reducing non-revenue water, and improving collection.

3.2.6.5. Water production has increased from 63,000 m^3/day in 1993 to 235,000 m^3/day at the end of 2003, with the new main water transmission and distribution system extending more than 1,200 km. Ninety percent of the total population, which is equal to 147,000 customers, received direct access to clean water. The non-revenue water has been reduced from over 72 percent in 1993 to 8 percent by end of 2005. The collection ratio also increased to 95 percent. The next objective of the PPWSA is to expand the water supply network to the suburbs of the city in order to provide direct access to clean water, especially for poor customers. In order to achieve this objective, PPWSA has to work continually with external assistances, such as The World Bank, the French Government and JICA, to build and strengthen capacity through training, technology transfer to the staff of PPWSA, and public education.

3.2.7. Challenges and Experience of Local Governments on Wastewater/Sewage Treatment: The Case of Indonesian Cities

3.2.7.1. The Indonesian population is about 213.6 million (2002) of which about 53 percent (120 million) live in Java. The majority live in rural areas, but it is projected that by 2025, the population living in urban areas will increase by 60 percent. The sewage and sanitation situation in Indonesia is daunting. Everyday about 400,000 m^3 of domestic wastewater is discharged directly to the rivers and to the ground without any treatment. Centralized sewerage only exists in 11 cities, serving only 2.5 million people (13.95 percent of the population in 11 cities or about 0.54 percent of total Indonesian population). Each year, about 100,000 children die due to diarrhea. In the period 1990–1999, BOD_5 increased to about 11 mg/liter. This situation resulted in an incremental production cost of 25.22 percent from the national average water tariff. The cost incurred for wastewater treatment is 5–6 times higher than the cost for drinking water.

3.2.7.2. Ms. Yuyun Ismawati, Director of BaliFocus Foundation, discussed the major issues confronting sanitation and sewage treatment in Indonesia and the challenges being faced by ongoing initiatives. In terms of policy framework, the development of sanitation facilities is integrated with the development of water supply systems, related to protection of water resources. Based on the national policy on water supply and sanitation development (Law No.7/2004), three basic types of management have been identified, namely: a) management by an institution, or Type A; b) management by the community, or Type C; and c) joint management by an institution and the community, or Type B.

3.2.7.3. One ongoing initiative in sewage treatment facilities in Indonesia is SANIMAS, which has been implemented since 2003 in urban poor settlements in 22 provinces/88 cities, and has benefited approximately 100,000 people. In the last three years, investment costs for infrastructure is a shared contribution from BAPPENAS (National Planning and Development Agency) and the Ministry of Public Works (20–22 percent), local governments (55–60 percent), Bremen Overseas Research and Development Association (BORDA) network (15–17 percent) and the community (2–5 percent). The sanitation and sewage treatment facilities are managed by community-based organizations, and user fees are collected to cover operating and maintenance costs. Site selection is based on competition so communities have to show their commitment — from project proposal to planning to operation stages. Key challenges are capacity building for facilitators (on technical and social aspects), facility operators and community-based organizations, linking the program/project with the city's sanitation and sewage policy and scaling up at the national level.

3.2.7.4. Another initiative on capacity building is a three-year project — Indonesia Sanitation Sector Development Project (ISSDP) implemented in six cities (Denpasar, Bali; Surakarta, Central Java; Blitar, East Java; Jambi, Sumatera; Payakumbuh, West Sumatera; and Banjarmasin, South Kalimantan), financed by the Dutch Trust Fund through the Water and Sanitation Program (WB), and administered by BAPPENAS. This project is focused on the development of a national enabling environment and policy and city strategy on sanitation sector, capacity building and raising awareness among stakeholders on hygiene and sanitation.

3.2.8. Environmental User Fee System and Trust Fund for Coastal Management and Sustainable Tourism in Puerto Galera, Philippines

3.2.8.1. The main income of the municipality comes from tourism and related activities. The large influx of tourists and the extensive tourism development, however, has resulted in a number of problems, such as destruction of ecosystems, declining environmental quality and multiple-use conflicts — seriously affecting the sustainability of Puerto Galera's ecological, recreational and production values. Located along the Verde Passage and in the Sulu-Sulawesi Marine Ecosystem, which is considered a center of marine biodiversity, Puerto Galera consists of coastal forests, beaches and coves surrounded by coral reefs that offer habitat to diverse marine life as well as related benefits to man — food, shoreline protection and tourism and recreational opportunities. Its protection is therefore a priority of the local government.

3.2.8.2. Among the action programs put forward by the municipal government is the investment in environmental facilities and services as well as the strengthening of policy and regulatory measures to promote environmental investment opportunities and sustainable tourism development. Mayor Aristeo E. Atienza (Puerto Galera, Oriental Mindoro, Philippines) presented the sewerage system and wastewater treatment facility in Puerto Galera and its innovative financing mechanism.

3.2.8.3. As a potential investment, an environmental facility or service will normally involve a tariff scheme to cover capital and operational costs. Being a third class municipality with limited funds, a financing strategy has to be developed and a sustainable financing mechanism has to be set in place. A crucial question is whether local consumers and tourists would be willing to pay for the service.

3.2.8.4. To assess the viability — technically and financially — of this investment opportunity, a pre-feasibility study was undertaken. Preparing a private sector arrangement requires evaluation of the technical considerations as well as the financing and revenue implications.

3.2.8.5. Another effort was to get information on the level of public awareness about environmental issues and assess public perception regarding waste management through the conduct of a survey using the contingent valuation method (CVM). The local government, in collaboration with the World Wide Fund for Nature (WWF), Sustainable Coastal Tourism in Asia (SCOTIA), and PEMSEA, conducted the willingness-to-pay (WTP) survey among three sectors, namely: local and foreign tourists, households and business (resort and non-resort) establishments. Through this survey, estimates of demand for these services or 'willingness to pay' were determined as well as the factors affecting preferences. Moreover, from this WTP survey, a range of 'prices' were obtained, which were then used in ascertaining the environmental user fee (EUF) that can be collected, in the conduct of financial analysis, and in the drafting of the ordinance. The WTP survey concluded that foreign tourists were willing to pay $13 per visit, while local tourists were willing to pay $1.66 per visit. The willingness to pay of households and establishments was $1 per month and $3 per month, respectively.

3.2.8.6. With the investment involved, the commitment of the local government and the support of the communities and local private sector have to be concretely shown to attract investors and private operating companies. An ordinance for the establishment of the environmental user fee system was drafted by the municipality with inputs from WWF, SCOTIA and PEMSEA. This ordinance set the amount of EUF that will be collected from tourists and the purpose of the EUF; and established a collection system for the EUF, a special account Trust Fund, the uses of the fund, and the management of the fund. This EUF ordinance went through a series of public hearings and stakeholder consultations for consensus building. Finally, the municipal council agreed to pass the ordinance. The initial environmental user fee (EUF) was set at PhP50 ($1) per tourist. With this amount and assuming a million tourists visiting Puerto Galera per year, the sewerage and treatment system can be financed as well as the other coastal resource management projects of the municipality. The challenge lies in making the collection of the EUF efficient and transparent.

3.2.9. Wastewater Tariffs in Thailand

3.2.9.1. Dr. Wijarn Simachaya (Pollution Control Department, Ministry of Natural Resource and Environment, Thailand) discussed the country's policy on wastewater treatment in Thailand, and the challenges faced when the operation and maintenance of the facilities are turned over to local governments.

3.2.9.2. Wastewater is one of the most serious environmental problems in Thailand. The major source of water pollution in the country is domestic wastewater discharge. The need for the provision of wastewater collection and treatment facilities has long been

identified by central government as a part of protecting the environment and the well-being of the population. The practical implementation of projects to provide this service over the past decade was driven by central government technical knowledge and funding. However, when these facilities were handed over to local organization authorities to operate and maintain, there were two main problems: a) inadequate planning for sustainable funding of the facility operation; and b) local authorities had a weak sense of ownership for the new facilities and were unprepared technically, financially and also in terms of institutional capacity to deal with the duties and responsibilities imposed on them**.** Currently, the Thai Government has tried to construct 95 wastewater treatment plants all over the country. The Polluter Pays Principle was introduced as an instrument for funding wastewater treatment operation and maintenance. The wastewater tariffs using this principle were explored. However, this concept is new to the Thai Government and not yet widely applied.

3.2.9.3. At the Central Government level, a Royal Decree was issued establishing the Wastewater Management Authority (WMA). The WMA has the authority to collect charges for wastewater management in the areas it serves, either directly or through its equity holding in a limited company or limited public company. However, the WMA Decree does not provide the WMA with the authority to set tariff levels. The setting of tariffs, and the implementation of these tariffs would be undertaken under the authority of National Environmental Quality Act (NEQA), B.E. 2535 (1992), including the authority to require that tariffs are implemented for schemes funded under the Environmental Fund.

3.2.9.4. The tariffs depend on water usage, wastewater produced, size of the pollution sources, etc. However, there are still difficult political and social obstacles to overcome in the introduction of effective, sustainable funding of wastewater treatment facilities. The constraints in wastewater tariff implementation include: the lack of government commitment; limited local government capacity and institutional support; weak sense of ownership by local governments; low willingness of beneficiaries to pay for wastewater services; politicization of the tariff setting and collecting process; and the general unwillingness of the water supply sector to combine collection and billing of charges for water supply and wastewater.

3.2.9.5. To date, only three local government authorities (LGAs) possessing wastewater treatment facilities have enacted tariff regulations and implemented tariffs. These are Patong (Phuket province), Pattaya and Sansuk (both in Chonburi province). Aside from these three, the Bangkok Metropolitan Administration is currently in the process of establishing a wastewater tariff system. In addition to these areas, a proposed tariff for the central wastewater treatment plant in Samut Prakarn province has been studied. The details of the three tariff-implementing areas are as follows:

1. Patong: Tariff and permit rates were set at 100 Baht/house and 400 Baht/house/year for domestic customers, and 50 Baht/room and 600 Baht/room/year for hotel owners. Currently, this is under revision to be reissued under the NEQA.

2. Pattaya: the tariff of Pattaya's central wastewater treatment plants were approved and announced by the NEB. The initial rate for 2001 was 2.5 Baht/m^3. Over the period 1999–2020, this will be annually increased by 0.25 Baht per m^3.

3. Sansuk: Domestic customers generating BOD of not more than 200 mg/l will be charged 2.0 Baht/m^3. The municipality has currently assigned the WMA the responsibility to operate and manage the wastewater treatment plant, including tariff collection.

3.2.9.6. Various water and wastewater sector privatization options have been studied in recent years. It is hoped that the preparation for some form of private sector involvement in operation and maintenance will give the needed pressure to address the real costs of wastewater treatment and the funding of this service. In the meantime, it still rests with the central government to continue to drive, motivate and support LGAs in achieving sustainable revenue from wastewater charges.

3.2.10. Creative Financing Solution for Water Supply and Sanitation in the Philippines

3.2.10.1. The investment requirements to achieve the Philippine Government commitment to meet the MDG targets for access to safe water and sanitation are beyond the financial capacity of government programs. Hence, mobilizing private financing for additional funds becomes an imperative. The Government issued Executive Order 279, espousing the new financing policy for water and sanitation. Among other guidelines, it calls for shifting the financing source of creditworthy utilities to market-based lending. However, pure commercial lending, with rates at 300–400 basis points higher than ODA re-lending programs and with tenors at a maximum of seven years (compared to 15-20 years from concessional loans), is not affordable to utilities. Moreover, the 7-year maturity mismatches the typical 20-25–year economic life of water projects.

3.2.10.2. A Philippine Water Revolving Fund (PWRF) was conceptualized with this backdrop. Ms. Alma D. Porciuncula (Development Alternatives, Inc.) presented a United States Agency for International Development (USAID) – Japan Bank for International Cooperation (JBIC) project for the preparation of this revolving fund, which is an innovative financing mechanism for the provision of water supply and sanitation services in the Philippines. The PWRF was inspired

by the state revolving funds in the United States and the pooled financing scheme tried in India, but was adapted to the Philippines' enabling conditions and constraints in the sector.

3.2.10.3. The PWRF is being designed and established as a mechanism to manage the transition to market-based lending. Its main objectives are: a) use limited public resources to leverage private sector financing in the water sector; b) bring private sector financing to the water sector on terms and conditions that are affordable to local users and acceptable to private financing institutions; and c) establish a fund with revolving capacity. Tapping the domestic capital market is the end view for the establishment of the PWRF financing mechanism.

3.2.10.4. Its initial structure is a blended financing facility, with funds coming from a JBIC loan to the Development Bank of the Philippines (DBP), a government financing institution, and from private financing institutions (PFIs), primarily, commercial banks. PFIs have the capacity and liquidity for the investment, but are highly risk-averse. This is aggravated by their lack of experience in dealing with utilities, which have traditionally relied on government loans or grants for financing. In view thereof, the structure of the PWRF includes two major credit enhancements for PFI lenders: a credit risk guarantee from a third party guarantor and a liquidity risk cover to enable the extension of the tenor to 15-20 years. These enhancements address both the security consideration of lenders and affordability to borrowers. The PWRF is also structured to capture JBIC financing re-flows to capitalize a reserve fund that could be used to over-collateralize a future bond issue.

3.2.11. Financing Cooperation for the Expansion of Environmental Facilities

3.2.11.1. Mr. Hun Suk of BooKangTech, Ltd. presented examples on ways to promote environmental investments to prevent pollution of the East Asian Seas. Each country and their local governments must study the sources of pollution, endeavor to remove pollution, and monitor results. For the efficient achievement of these, there are various factors that must be considered, such as technologies, skills, field experiences and funding.

3.2.11.2. To provide the required environmental facilities across the region will require a huge amount of funds. For this reason, most developing countries' local governments are facing barriers to develop and operate wastewater treatment projects. There are various types of funding sources that are available for developing countries. Firstly, there is associate research fund provided by national government. Secondly, there is a loan system. There are various types of funding available, such as low-interest loans and interest-free credit to developing countries. RO Korea's Economic Development Cooperation Fund (EDCF), ADB and World Bank funds are examples. Finally, grants from The World Bank and other donor

agencies are designed to facilitate development projects by encouraging innovation and co-operation between organizations, as well as local stakeholder participation in projects. The purpose of these funds is to promote capacity building and economic cooperation with developing countries.

3.2.11.3. Local governments and other groups must consider the method of combining and organizing the abovementioned funds, and managing these funds. The promotion of environmental services requires the will and passion of local governments. Furthermore, if the national government or other investment groups support the environmental investment financially and politically, it will be much easier to access funds for water, sewage and sanitation services. When all of these work together and are successfully managed, it will attract the interest of private investors and also the participation of the private companies.

3.2.11.4. Mr. Hun Suk also focused on RO Korea's EDCF as an example. In Qufu City, Shandong Province, PR China, the wastewater treatment system was financed by combining local government sources (40 percent) with the funds from the EDCF of RO Korea (60 percent).

3.3. Panel Discussion

3.3.1. The panel discussants were Dr. Samuel Arle Dan Biller (The World Bank), Mr. Paul D. Lazaro (DBP), Hon. Mary Jane Ortega (San Fernando City, La Union, Philippines), Mr. Juergen Lorenz (Pro-Environment Consortium), and Mr. Paul van Hofwegen (World Water Council). Dr. Mara Warwick (The World Bank) moderated the discussion.

3.3.2. The panelists highlighted the key issues and challenges presented by all speakers, and gave their recommendations based on their own experiences in their respective institutions/sector. The points of discussion are included in the summary below.

3.4. Summary, Conclusions and Recommendations

3.4.1. The workshop discussed the issues surrounding investments and private sector participation in the water, wastewater and sanitation and, in part, solid waste management sectors, and the necessary policies and institutional arrangements, including regulation and incentives. It addressed the financing of a sector that traditionally is non-profitable — it is severely under-funded in East Asia, with some countries achieving only one percent coverage in sewerage and sanitation. The presentations focused on the challenges facing the sector, the conditions required to overcome the challenges, and successful case studies. With increasing demand and deteriorating environmental quality coupled with increasing financing requirements, there is a need to improve performance of this sector — financially, technically and operationally.

3.4.2. A major challenge is access to funds and sustainability. Three financing sources are available for water, sewage and sanitation infrastructure: a) user payments (tariffs); b) subsidies (taxpayer payments); and c) foreign donations. Private sector capital contributions are important, but need to be recovered through tariff payments. In some cases, recovering full costs from charges on consumers may not be possible (because of the impact on bills) but desirable (because of the community health benefits). In medium and small towns in developing countries, the population is mainly poor, tariff payment capacity is low, infrastructure investments backlog is large and there is no way to finance all the required investments through tariffs. The only way to finance the required investments is to complement income from tariffs by subsidies which may come from foreign grants (very limited and unsustainable), or government grants (taxpayer contributions). Hence, ODA and external loans from multilateral financial institutions continue to play an important role in supporting water supply and wastewater management initiatives in the East Asian Seas region.

3.4.3. The presenters and participants agreed that ODA and government subsidies (from taxpayers) were necessary in some cases, for example in the short term, to bridge a financial gap, but cost recovery through tariffs (from consumers) was vital and key to sustainability. In towns with populations of markedly different incomes, water fees can be lower in poorer areas, effectively causing the higher income users to cross-subsidize the lower income users. This was demonstrated using the Colombia case study. Cross-subsidies could also be used between the water and wastewater sectors: the presenters demonstrated that given the right incentives, e.g., full-cost recovery, private operators would invest in wastewater as well as water infrastructure. Incentives include adding wastewater fees to the water tariff, and applying this tariff to all users, as illustrated in the Manila Water case study. Both cross-subsidies could work substantially. Thus, subsidies must be based on measurable outputs, used prudently, and only in the interim and when there are issues of affordability, i.e., for poor communities.

3.4.4. Funding agencies have begun to relax traditional rigid policies and processes that limit local governments' ability to access their funds. This is partly due to the strong advocacy, political will and demonstration of outputs of some exceptional local government officials, and strong support of stakeholders. Difficulties with usual financing sources (e.g., lack of long-term financing, high interest rates, perceived high risk of local government projects, etc.) can also be addressed by innovative mechanisms that permit complementation among various financial entities. The PWRF is such a scheme, mixing grants, loans, guarantee mechanism and domestic capital market, but whose success hinges on an appropriate policy and institutional environment and adequate demand from potential investors/clients (e.g., local government units, water districts). In Shandong Province, PR China, local government funds were combined with the EDCF for a wastewater treatment system. In Indonesia, community-based sewage treatment projects combined grants, loans, national government funds and user fees paid by the communities. In Guangzhou, PR China, local government funds were combined with private sector financing for solid waste and sewage management systems.

3.4.5. No single solution exists, and different models are required for different situations. The higher the cost recovery is, however, the more financing and management options are available. User fees are, therefore, a critical element in financing of local environmental management initiatives and ensuring their sustainability. In the tourism municipality of Puerto Galera in Oriental Mindoro, Philippines, where traditional financing sources (e.g., taxation, subsidies, ODA) and access to loans are severely limited, it has been shown that people — tourists, residents and establishments — are prepared to pay for a wastewater management system through an environmental user fee. There is even higher willingness to pay for water supply. In Thailand, setting of appropriate user charges is crucial in providing for the sustainability of a wastewater management system by recovering operating and maintenance expenses from the beneficiaries themselves. It was noted that public awareness and education are needed to ensure social acceptability and increase willingness to pay for the user fees, and this in turn, would make it easier for local governments/politicians to collect the fees.

3.4.6. Another key challenge is addressing weak institutions, lack of capacity and know-how, and lack of awareness. Sanitation and sewage treatment remain low in the usual priorities of local governments, and those that invest in such facilities continue to be a rare breed. It is important to demonstrate to local leaders and stakeholders the benefits to be derived from investing in water, sanitation and sewage treatment, show working models ("what works") as well as explain what would happen if people do not do anything. Advocacy of water and environment among the financial institutions is also important in making funds or credit available for environmental infrastructure projects, which are also in their category of low priority–high risk projects. In all of these, the role of the youth in convincing their elders to change attitudes as producers, consumers, political leaders or resource providers cannot be over-emphasized. Education of the youth in the water and environment sectors is also essential to ensure that there will be a pool of well-trained people to operate and manage environmental facilities. This is a key factor in the improved performance of the water authority in Phnom Penh and the sewage treatment projects in Indonesia.

3.4.7. Given the limited funds, it is essential to efficiently use the investments that have already been committed to improve performance in this sector (i.e., meet quality standards and improve service delivery while minimizing costs and/or maximizing revenues) and leverage additional financing. Capacity building and change of perception and attitudes are long-term processes, but outcomes can be realized even in the short to medium term. Local governments that are doing well can be role models and 'champions', making it possible for replication in other sites. The dramatic turnaround of Phnom Penh's water supply system (Cambodia) can be largely credited to the strong and effective leadership of the water authority, facilitated by a supportive and responsive government and to the change in culture to a more business- and consumer-oriented one. Manila Water underwent corporate transformation and empowerment of employees to improve customer service and performance of the utility. Indonesia's successful sewage treatment projects draw their apparent achievements from strong community participation in planning and implementation. Examples from Puerto Galera and San

Fernando City, La Union, both in the Philippines, demonstrated some innovative financing mechanisms to address pollution reduction, specifically environmental user fees and real estate taxes. In Guangzhou, PR China, various types of partnership arrangements (e.g., build-operate-transfer (BOT) and design-management) between the local government and private, foreign-owned companies have been made for improved service delivery in sewage and solid waste management.

3.4.8. In terms of operations, partnership arrangements with the private sector is the fastest and most effective way of improving performance, and bringing in technical and managerial expertise and financing. In developing countries, wastewater treatment has to be based on appropriate processes that are simple, low cost and easy to operate, and yet still yield the required level of treatment to make such service affordable, for tariffs to be collectible and minimize subsidies, if needed. Lower-cost processes alleviate the investment needs and financing problems. Investors also do not have to be large multinationals, but can be small- or medium-sized local companies. This was proven successful in Colombia and other South American countries.

3.4.9. Another major challenge facing utilities is political interference in the management and operation as well as in setting user fee rates and actual fee collection. This can be partly overcome by allowing a private sector operator to manage the network, in return for a concession fee. Additional advantages include rapid injection of capital from the private operator, and high technical ability to manage the utility. This also allows the delineation of roles and responsibilities between the public and private sectors, and development of the capacity of the government to be regulator and supervisor rather than being both the regulator and operator.

3.4.10. Although private sector participation (PSP) or public-private partnership (PPP) is not required and not the preferred option in developed countries where publicly managed utilities perform satisfactorily, it is essential in developing countries, where publicly managed utilities perform poorly, subject to political interference, and their chances to improve performance within the public management domain are slim. It is important, however, to set in place the necessary policies, institutional arrangements, payment and guarantee mechanisms and risk allocation or sharing agreements to attract private sector investments. Risks must also be allocated fairly and well defined. A fund channeling and governance framework based on the appropriate allocation of risks and third party agreements is the mechanism needed to align incentives and improve governance.

3.4.11. As the sector forms a natural monopoly, it requires a regulator, whose tasks include setting tariffs, determining performance standards, achieving social goals or protecting the environment. Having an independent regulator also minimizes the problem of political interference and at the same time could ensure more efficient performance of the utility. Two models of regulation of water utilities were presented, namely: institution-based (Anglo-American), and contract-based (French). A regulator’s duties had to be clearly defined for the regulator to function adequately. In the case of Metro Manila, Philippines, the two types have been mixed, resulting in confusion of the regulatory office

as to whether its role was to enforce the regulatory rules set out in the contract/concession agreement, or to try and exercise discretion and effectively change the rules (e.g., tariff rates).

3.4.12. Finally, the speakers and participants concluded that strong utilities could only be due to strong, flexible, innovative management backed by far-sighted and committed local governments. Instilling discipline and political will are crucial. It is in this context that assistance is needed in order to create awareness among the local governments and stakeholders to make environmental management and investments in water, sanitation and sewage treatment high priorities in the government agenda, and to build the capacity of governments to craft and enforce the necessary policies and legislation, adopt a transparent process, and thereby create an environment conducive for private sector participation.

4. WORKSHOP ON GPA IMPLEMENTATION: NATIONAL AND LOCAL GOVERNMENT CHALLENGES

4.1. Introduction

4.1.1. The Workshop on GPA Implementation – National and Local Government Challenges was held on 13 December, co-organized by United Nations Environment Programme - Global Programme of Action for the Protection of the Marine Environment from Land-based Sources (UNEP/GPA) and PEMSEA.

4.1.2. The workshop started with an overview of the outcomes of the Second Intergovernmental Review (IGR-2) Meeting of the GPA that was held in Beijing, PR China, on 16-20 October 2006. This has set the tone for the discussion of various constraints and issues concerning GPA implementation, and actions to be pursued at local, national and regional levels. Best practices and lessons learned from the case studies on pollution reduction and coastal management initiatives were also presented. Dr. Anjan Datta, Programme Officer, UNEP/GPA Coordination Office, United Nations Environment Programme, was the chair for the workshop.

4.1.3. The workshop program is shown in Annex 1. The list of speakers is shown in Annex 2.

4.2. Outcomes of the IGR-2 Meeting and GPA Implementation for 2007–2011

4.2.1. Dr. Datta informed the workshop participants of the outcomes of the IGR-2 wherein over 600 participants — representing 104 governments and various international and regional organizations, international financing institutions (IFIs) and nongovernmental organizations (NGOs) — strongly renewed their commitment to address land-based sources of marine pollution at the national, regional and global levels. Reference was made to the adoption of the Beijing Declaration, in which governments unequivocally claimed ownership of the GPA, assumed responsibilities for its implementation and reaffirmed political will to tackle a range of pollution threats to the marine environment. The

Beijing Declaration also marked a new strategic direction for the GPA, as Governments endorsed an approach with greater emphasis on GPA execution at national and local levels. This approach calls for creating sustainable financial mechanisms, economic valuation of goods and services provided by oceans, coasts and watersheds, partnerships and stakeholder participation, and integrated approaches, such as ecosystem-based management, linking freshwater and coastal management, and inter-linkages between GPA implementation and poverty reduction-focused development strategies.

4.2.2. The overall goals of the Programme of Work 2007 – 2011 and its cluster of activities were also presented. The first cluster of activities pertains to:

a. periodic integrated reporting on the implementation of the GPA and the state of the coastal and marine environment;
b. contributing to the special report series of the Joint Monitoring Programme on Water Supply and Sanitation, managed by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), focusing on the discharge of municipal wastewater; and
c. promoting research on the economic, social and environmental importance of coasts and oceans relating to the GPA, as followup to the Millennium Ecosystem Assessment.

4.2.3. The second cluster of activities is directed at policy and normative action. This involves moving forward the development of the GPA as a flexible instrument for environmental management as it relates to the interface between freshwater and coastal zones, through measures, such as development and implementation of National Programmes of Action (NPA). This involves:

a. promoting the development of necessary sustainable development policy guidance in the context of changing circumstances;
b. initiating and supporting strategic policy dialogues as needed; and
c. contributing to the implementation of the UNCLOS, the Bali Plan of Action (in terms of capacity building and technical support) and the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA).

4.2.4. Participants have also agreed that the GPA must remain responsive to new developments in the international agenda. In line with this, the remaining cluster of activities focuses on:

a. capacity building and technical support, such as mainstreaming GPA into institutional and financial frameworks, and developing and maintaining GPA knowledge-bases;
b. collaboration and coordination with UN-Water, UN-Oceans, other relevant multilateral environmental agreements and international/regional mechanisms;
c. strengthening of partnerships between governments and with relevant UN agencies, the Global Environment Facility (GEF), other development partners and major international organizations; and
d. awareness raising, including promotion of GPA and broad dissemination of outputs, results achieved and best practices.

4.3. Workshop Presentations and Discussion

Session 1: Issues and Challenges to Financing Pollution Reduction Programs/Projects

4.3.1. Unmet Demands in Water and Sanitation: What is the Cost to East Asia?

4.3.1.1. Dr. Tracy Hart of The World Bank gave an overview of the costs related to water and sanitation. There are two ways of interpreting the question on what the cost is to East Asia: one is the environmental and health cost of unmet demand; and the alternative interpretation is the investment cost of meeting demand.

4.3.1.2. Dr. Hart pointed out that, for East Asia, regional losses of not meeting demand for water supply and sanitation amount to $66 billion/year. In terms of further illustrating these costs, the case of the Philippines was presented.

4.3.1.3. In the Philippines, economic costs of the impacts of unmet demand for sanitation and pollution reduction facilities amount to PhP67.3 billion per year (about $1.4 billion), estimated in terms of costs to health, fisheries production and tourism.

4.3.1.4. The Philippine Department of Health (DOH) reported estimates of waterborne diseases with more than 500,000 morbidity cases and 4,200 mortality cases per year of diarrhea, cholera, typhoid and paratyphoid, and hepatitis A. These cases resulted in direct income losses and medical and hospitalization costs of PhP3.3 billion per year ($69 million).

4.3.1.5. In terms of impacts on fisheries, there is a decline in yields of municipal and commercial fisheries, estimated at 30 percent and 5 percent per year, respectively, due to sedimentation and siltation resulting from erosion of degraded uplands and forests and untreated sewage. The Philippine economy loses an average of PhP17 billion ($354 million) annually from lower fishery productivity.

4.3.1.6. The pollution of beach waters has resulted in annual losses in direct tourist receipts. The cancellation and non-arrival of tourists as a result of water pollution-related causes and other losses due to tourist-related activities costs the tourism industry PhP47 billion per year ($978 million).

4.3.1.7. The annual investment cost estimated for meeting the MDGs in Water Supply and Sanitation for East Asia and the Pacific (in 2001 prices) ranges from $8.11 billion per year (Asian Development Bank estimates) to $9.5 billion per year (The World Bank estimates). The costs of sewerage and wastewater treatment systems have not been estimated.

4.3.1.8. In the Philippines, the infrastructure-based costs to meet unmet demand for sanitation in 2003 (at PhP54.203 = $1) were estimated at PhP35 billon per year for the next ten (10) years, and for water supply at PhP5–6 billion per year. A 10-year program for treating domestic wastewater through sanitation in rural areas and a piped system in urban areas would require capital cost of PhP211 billion (PhP53 billion for rural areas and PhP158 billion for urban areas) and operating costs of PhP18 billion per year. These estimates were compared to an average annual investment in sewerage of only PhP1.5 billion, or 0.5 percent of GDP (in 1999 prices).

4.3.1.9. Enabling factors to meeting current demands for water supply and sanitation include stimulating investment across a variety of public and private actors, including local governments; promoting intermediate technical solutions which can be applied in the short term; increasing public participation and disclosure with respect to site selection and right-of-way acquisition; and enforcing current regulations.

4.3.2. An Overview of Public and Private Sector Capacities in Environmental Investments in Five East Asian Countries

4.3.2.1. Ms. Maria Corazon Ebarvia-Bautista of PEMSEA discussed the issues and challenges in developing and financing environmental infrastructure, based on a 2005 study completed by PEMSEA. The lack of water and sanitation facilities in the East Asian region raises important issues related to social and economic costs and sustainability. A fundamental constraint to designing environmental investments is ensuring that local communities and the environment share real and early benefits while still allowing the economy and society at large to benefit from the growth made possible by these investments.

4.3.2.2. The presentation covered institutional arrangements, national policies, and financing and investment programs related to private sector participation in environmental infrastructure projects in five countries in the EAS region, namely: Cambodia, PR China, Indonesia, Philippines and Vietnam. Water and sanitation facilities in the five countries still rely heavily on government financing and developmental loans from multilateral lending institutions, such as the Asian Development Bank and The World Bank. It has been observed that ODA flows are not keeping up with the demand, and governments alone cannot meet the MDG targets. They have to work with the private sector — a major source of technical and financial skills, technology and financial resources. Developing partnerships between the public and private sectors, and with the communities, are not end goals, but mechanisms of project delivery.

4.3.2.3. In many cases, financing for building infrastructure is available, but institutional (environmental regulations, investment policy, capital market, etc.) and human capacity is inadequate, or has not

sufficiently adapted, to develop projects, access funds, and manage water resources, wastewater, new infrastructure and financing resources effectively and simultaneously. Furthermore, mobilizing funds involves strengthening public and private sector investments through partnership arrangements. These varied circumstances underscore the imperative of balancing and sequencing investments — in institution- and capacity-building and in required infrastructure — to efficiently manage both water and financing resources.

4.3.2.4. The constraints faced by private banks in extending financing for environmental projects are numerous, such as short maturity structure of deposits; low probability of repayment from local government borrowers; and high cost of information and monitoring.

4.3.2.5. On the part of private operating companies, their participation in the provision of water and sanitation services relate to public sector policy and governance, such as: a) lack of transparency in procurements; b) lack of a clear set of legal and regulatory framework for private involvement; and c) lack of access to finance. Nevertheless, there are initiatives already being undertaken by some of the central governments to liberalize the water and sanitation sector.

4.3.2.6. Strategic partnerships involving government (both central and local), the private sector and civil society are considered essential in achieving a successful approach for the development and financing of environmental improvement infrastructure and natural resource conservation. Bringing about this partnership, however, requires a process that includes creating environmental awareness, implementing policy and institutional reforms, fostering trust between and among these sectors, and capacity building.

4.3.3. China's Opportunities and Challenges in GPA Implementation

4.3.3.1. Prof. Yibing Su of the Chinese Research Academy of Environmental Sciences started his presentation with an overview of the seas, river basins, estuaries and marine administrative areas in PR China.

4.3.3.2. There are major existing actions related to GPA implementation in China, such as:

a. implementation of up-to-standard control of industrial pollution sources;
b. treatment of urban sewage and refuse;
c. prevention of agricultural non-point pollution;
d. control of water and soil erosion and eco-friendly watershed development;
e. eco-conservation and rehabilitation of marine fisheries;
f. wetland protection and the development of shelter belts in coastal regions;

g. pollution control in tourism-related activities in coastal regions; and
h. pollution control in the development of mineral resources in coastal regions.

4.3.3.3. Moreover, China is also addressing sea-based sources of pollution through programs and activities, such as the control of pollution from ships, harbors and offshore development of petroleum and gas resources; management of waste dumping into the sea; marine environmental protection in military facilities; and marine environmental monitoring and special investigation.

4.3.3.4. Prof. Su also outlined China's progress in the development of its National Programme of Action (NPA), which was started in 2004 and was completed in September 2006 — a month before the IGR-2 Meeting of GPA in Beijing. He also discussed a number of challenges and issues related to NPA implementation. These involve: lack of harmony between economic development and environmental protection policies; lack of coordination and cooperation among and between ministries and local governments; delays in construction projects for pollution control; and lack of supervisory and management skills. There is also a need to support priority demonstration projects; improve policy measures on environmental management; conduct public awareness, education and capacity-building activities; promote public participation; strengthen the organization, coordination and implementation of NPA; and enhance international environmental exchanges and cooperation.

Session 2: Policies and Programs to Strengthen Investments in Pollution Reduction

4.3.4. Haikou City's Corporate Approach to Environmental Services

4.3.4.1. Deputy Mayor Wang Lu of Haikou City, Hainan Province, PR China presented one of the important components of the "Ecological Haikou" program, which is to improve the sewage and waste disposal facilities in the city. The city government worked with state-owned and privately owned enterprises to design, construct, operate and manage waste disposal facilities. As "strategic partners" and/or or "strategic investors," these enterprises have helped Haikou in accessing technological innovation, controlling the sources of pollutants and protecting the environment, reducing government debts, creating new job opportunities, and alleviating poverty.

4.3.4.2. The Deputy Mayor noted that the Haikou City Government signed a Letter of Intent with PEMSEA for the city's treatment and disposal of sewage and garbage. Partnership proposals will be solicited globally for the construction and management of sewage and garbage disposal projects in Haikou under the public-private partnership (PPP) approach. He also cited environmental infrastructure projects

that were developed with private sector participation (e.g., the sewage disposal plants in University Town at Gui-lin-yang, and in the Lion Enclave Industrial Park of Haikou City). Currently, the city is discussing the construction of a solid waste management project with methane-based power generation with Italy's ASZA Company using the PPP model.

4.3.4.3. The city government will promote the development of PPP projects in its territory with the following considerations:

a. city governmental departments will play supervisory, guide and co-operator roles during the course of their partnership and cooperation with privately-owned enterprises for the provision of public service, instead of playing a lead role in the construction of public infrastructure facilities as they did in the past;
b. design a rational risk-sharing structure;
c. formulate, adopt and pass investment and related laws and regulations, and adhere to the national laws of China and to the generally accepted practices in the world;
d. establish a supervisory structure, which will decide on commitments and guarantee mechanism to ensure the safety of corporate assets, bring down the costs of corporate financing, and offer incentives to investing enterprises; and
e. allocate resources for training, education and capacity building to foster talents and multiple skills, thereby reinforcing the confidence of private and nongovernmental enterprises and foreign businesspersons in investing in Haikou City, and providing guarantee that their signed projects can be accomplished efficiently. In the future, PPP projects will cover such sectors as transportation, sanitation, public health, national defense, education, etc.

4.3.5. Promote Coastal Environmental and Ecological Conservation with Innovative Mechanism: The Case Study of Ningbo Water and Environment Project, Zhejiang, PR China

4.3.5.1. Ningbo's extensive inter-tidal mudflat and marshes and their neighboring estuary waters are important natural habitats for fish, migratory and indigenous water birds, and wetland vegetation. However, land reclamation and aquaculture activities have eliminated much of the natural habitat. Point and non-point sources of pollution from urban and agricultural runoff are also contributing to deterioration of coastal and marine waters.

4.3.5.2. Mr. Li Zhibo of the Ningbo Municipal Development and Reform Commission presented the features of the GEF/World Bank-funded Ningbo Water and Environment Project. It has three components: a) constructed wetland for tertiary treatment of effluents from a wastewater treatment plant; b) establishment of a 43.5-km^2 Wetland

Center; and c) design and management support and assistance, including engineering design, a Wetland Center Management Assistance Contract with an NGO/university consortium, and dissemination of project experience.

4.3.5.3. The project is expected to improve water quality in Hangzhou Bay, protect wildlife and migratory birds, and integrate pollution reduction with environmental education, wetland conservation and ecotourism. It also aims to promote stakeholder partnership among government agencies, NGOs, research institutions and universities. The Government has established a drainage company to implement and operate the constructed wetland as well as a wetland management company to develop and manage the Wetland Center. The wetland management company will engage an NGO/university consortium to develop a comprehensive business plan for the Wetland Center, including charging user fees and activities to promote public and stakeholder involvement and attract donations.

4.3.5.4. Mr. Zhibo also discussed challenges in project sustainability for the whole area, and measures to meet these challenges. Furthermore, the government will also take active steps to reverse the trends in upland development that have created the widespread coastal pollution, such as: a) introduction and enforcement of land development policies that not only promote economic growth, but also promote environmental protection and social benefit; b) adoption of integrated water environment planning and management; c) effective separation of government and private enterprise roles and responsibilities; d) development of a widespread, performance-based “business” culture within government agencies; and e) adoption of pricing policies based on the full cost of providing a service.

4.3.6. Management of Livestock Wastes in East Asia Project: National Action Plans and Financing Implications

4.3.6.1. The East Asian region is the largest producer of pig and poultry, accounting for considerably and consistently more than half of the world’s stock of pigs and more than one-third of the world’s stock of poultry. East Asian seas are seriously threatened by two major environmental issues — overfishing and land-based anthropogenic pollution. An initial estimate indicates that about 26 percent of the total area in East Asia suffers from significant nutrient surplus that emanate mainly from agricultural sources. Currently, animal manure is estimated to account for 47 percent and 16 percent, respectively, of the phosphorus and nitrogen surpluses in the region. To tackle this issue and reduce livestock-induced, land-based pollution and environmental degradation of the South China Sea, a GEF/World Bank-funded project was launched in mid-2006 involving PR China, Thailand and Vietnam.

4.3.6.2. Mr. Weiguo Zhou of The World Bank presented the project's components, challenges, strategies and technological and financial implications. The project takes a comprehensive approach to integrate affordable technological solutions; policy development and enforcement for environmentally sustainable livestock production and waste management; capacity building for increasing awareness among line agencies, the general public and livestock producers; improved manure management practices at local and national levels; and regional coordination and synergy.

4.3.6.3. Although the project is expected to yield only a limited direct impact on water quality of the South China Sea, a noticeable pollution reduction is to be achieved through the replication of the demonstrated livestock waste management practices throughout the participating countries. A country-specific Replication Strategy will be developed by each participating country. A monitoring and evaluation system focusing on the livestock waste management system, implementation progress, environmental management and project impact will also be in place.

4.3.6.4. The costs of livestock waste management are shown to be affordable for medium- and large-sized industrial pig farms, which are the targeted farms under this project. Smaller farms can also afford the technologies, as long as they are successful in defraying partial costs through treated manure sales, fish production or chemical fertilizer and even household energy savings. Mr. Zhou provided examples of livestock waste management systems and the corresponding costs involved.

4.3.7. Investment in Water, Sewage and Sanitation: The Case of the Southern Mindanao Integrated Coastal Zone Management Project, Philippines

4.3.7.1. The Southern Mindanao Integrated Coastal Zone Management Project (SMICZMP) is an environmental investment and infrastructure package aimed at developing appropriate and effective models for integrating the protection, management and conservation of ecosystems with economic activities — from the uplands down to the coastal ecosystems — for sustainable development. It is funded with a loan from the JBIC with counterpart financing from the Philippine Government.

4.3.7.2. Dr. Romeo Basada of the Department of Environment and Natural Resources (DENR), Philippines, briefly discussed the scope, covered area and the project's management interventions, such as watershed rehabilitation, riverbank stabilization through vegetative and engineering measures, construction of septage treatment facilities for coastal municipalities, establishment of environmental conservation and protection center, institutional strengthening, capacity building, and livelihood assistance packages.

4.3.7.3. The presentation focused on the proposed construction and operation of Septage Treatment Facilities (STF) in six coastal local government units (LGUs) in the Sarangani Bay Protected Seascape and one coastal LGU in Malalag Bay. The STF systems, operational processes and sustainability of operations were described. Memoranda of Agreement between the municipalities and the DENR have been signed. The project also involved the conduct of feasibility studies, willingness-to-pay surveys and financial studies; massive information campaigns for project acceptance by the municipal constituents; and securing resolutions from the municipal councils of the seven LGUs for project implementation and sustainability, as well as resolutions from the Provincial Board and Regional Development Council for project approval. The construction of the STFs is already ongoing and 50 percent completed. With JBIC terminating the loan in January 2007, it is now the responsibility of the DENR and LGUs to continue the construction of the STFs and ensure their sustained operations.

4.4. Summary, Conclusions and Recommendations

4.4.1. The workshop involved presentations and discussions covering the following subjects:

1. Integrating GPA objectives and actions into policies and programs at the national and regional levels;
2. Addressing unmet demands in controlling land-based sources of marine pollution and the social, economic and environmental costs;
3. Overcoming constraints to public and private sector investment in land-based sources of marine pollution in East Asian countries;
4. Mobilizing and strengthening national and local government capabilities in developing, adopting, implementing and assessing National Programs of Action and, in particular, the delivery of water, sanitation, sewage treatment and pollution reduction services; and
5. Implementing demonstration programs/projects on pollution reduction, water and sanitation, and replicating successful programs/projects, including sharing of best practices and lessons learned.

4.4.2. Recommendations

4.4.2.1. The recommendations from the workshop covered a series of pragmatic steps/proposals for achieving GPA-related objectives in the region over the next three years within the framework of the SDS-SEA implementation program.

4.4.2.2. Many of the case studies presented in the workshop also reaffirmed that political commitment to implement GPA is growing as cost of “non-action” is too high.

4.4.2.3. It was acknowledged that addressing land-based sources of coastal and marine pollution would require mobilization of resources. ODA resources would not be enough for implementation. Governments

must mobilize domestic resources through application of market-based instruments and other tax/policy reforms to create sustainable financial mechanisms. To ensure and expedite GPA implementation, the workshop acknowledged the need for mainstreaming GPA implementation into the national and local development planning and budgetary mechanisms. Policy and institutional reforms, capacity building and implementation of programs/projects with private sector participation are necessary.

4.4.2.4. It was evident from most of the presentations that most of the countries of EAS region have good policies and legislation to address land-based sources of pollution. Implementation of policies and enforcement of laws and regulations, however, are often weak. GPA implementation would require a flexible and iterative planning and monitoring mechanism. As the implementation progresses, policies, institutional arrangements, roles and mandates may need to be redefined to address emerging new realities.

4.4.2.5. It was categorically stated that “business-as-usual” is not an option anymore. Given the scale and nature of the problem, it has been stated that government alone would not be able to address land-based sources of pollution. A multistakeholder, multipartner approach is seen as a principal tool to further the implementation of the GPA and to replicate successful practices. The partnerships would provide a mechanism to increase capacity for addressing land-based sources of marine pollution, mobilize resources, and promote new paradigms for coastal and marine management.

4.4.2.6. Regional cooperative frameworks are considered important to facilitate exchange of information, dissemination of best management practices, which could be replicated elsewhere and also be upscaled. From the case studies, it was clear that pilot projects successfully demonstrated alternative and innovative approaches, technological choice (e.g., constructed wetlands) and management practices (joint management with the involvement of the community, the private sector and/or civil society organizations).

4.4.2.7. Cooperation and coordination between the different levels of government, and with nongovernmental agencies, needs further improvement. The workshop called for enhanced environmental cooperation at national, regional and global levels.

4.4.2.8. The respective and mutual roles of civil society, press/media and judiciary were considered critical for effective policymaking and policy implementation to address land-based sources of pollution and other environmental agenda.

4.4.2.9. Finally, in line with the outcomes of the IGR-2 meeting, the workshop also recognized the need to mainstream GPA into the sustainable development programs of countries, particularly within the context of economic development and environmental

management of coastal and marine areas and their associated watersheds.

5. WORKSHOP ON POLICIES AND INCENTIVES FOR SCALING UP INVESTMENTS FOR POLLUTION REDUCTION

5.1. Introduction

5.1.1. Rising land-based pollution of the East Asia Seas is destroying the coastal and marine ecosystems, which millions of its inhabitants depend on. In view of this, the Workshop on Policies and Incentives for Scaling up Investments for Pollution Reduction was conducted on 13 December, co-organized by The World Bank and PEMSEA.

5.1.2. This workshop focused on the challenges facing East Asia in scaling up pollution reduction investment, the policies and incentives that are needed to scale up pollution reduction investments, examples of successful revolving funds, and lessons learned from such funds. This workshop also evaluated a new investment promotion initiative by the GEF, World Bank, UNDP and PEMSEA – a Project Preparation Revolving Fund (PPRF) for pollution reduction in East Asia.

5.2. Workshop Presentations and Discussion

5.2.1. Policies and Incentives for the Reduction of Coastal and Marine Environmental Degradation

5.2.1.1. Dr. Samuel Arle Dan Biller (The World Bank) outlined the broad policy and incentives framework for increasing investments in pollution reduction. There are several policies and instruments that can be effective in diminishing coastal and marine environmental degradation caused by land-based pollution. These in general fall under three categories:

1. Government policies, which include regulatory standards (Command and Control), market-based instruments geared at increasing the profitability and rewarding the use of clean technology, and Legal Liability;
2. Markets that impact pollution through reputation and profits; and
3. Civil Society that is capable of decreasing degradation through pressure via participation and information provision to influence the adoption of pollution reducing policies, methods and technologies.

5.2.1.2. Dr. Biller discussed the various valuation methods and examples. Valuing coastal and marine resources facilitates priority setting and cost-benefit analysis of remediation. Valuation allows for capture and allocation of benefits via better incentives design, and leads to informed decisions.

5.2.1.3. Public disclosure helps reduce information asymmetry by making society better informed about the environmental condition of coastal and marine resources. It minimizes risks and related costs (e.g., travel costs), mitigates public concerns and improves public perception of coastal and marine resources. Nevertheless, while information provision should be part of a policy, it is hardly a solution on its own. In fact, different pollution sources may require different approaches and in different areas. Of key importance is the decentralization process as many forms of coastal and marine degradation are caused by actions taken in different jurisdictions. Intergovernmental and cross-sectoral relationships thus play a major role.

5.2.2. Financing Environmental Expenditures: Context and International Experience

5.2.2.1. There are a number of related environmental and socioeconomic challenges being faced by the world today. The economic cost of pollution is estimated at 4-8 percent of GDP in many developing countries. Natural resource degradation threatens livelihoods (e.g., depletion of fisheries, erosion in coastal areas, etc.). Climate change increases developing countries' vulnerability to environmental risks, e.g., natural disasters, changes in weather patterns, sea level rise, etc. Addressing the resource and environmental degradation would require financing. Meeting the MDGs alone would already require annual investments in water and sanitation to double.

5.2.2.2. Dr. Magda Lovei of The World Bank outlined the key conditions for sustainable environmental financing. These are:

1. Government policies
   - "Rules of the game" for internalizing environmental externalities (e.g., environmental standards) and regulating public goods (e.g., access to common resources) must be implemented and consistently followed.
   - Incentives to support environment-friendly behavior (e.g., taxes and charges) must be designed and set in place.
2. Institutions – are needed for the:
   - implementation of policies, monitoring and enforcement of regulations;
   - cross-sectoral coordination of actions to support most effective approaches
   - financial sustainability of companies and utilities
3. Markets
   - Markets provide access to environmental consulting services and technologies.
   - Through markets, demand for environmental services is created.

- Markets facilitate access to financing at terms that match investment needs.

5.2.2.3. There are several types of environmental funds (EFs) depending on the objective or target of the expenditures and source of funds. Broad EFs may be established from earmarked environmental taxes and charges for pollution abatement, municipal services, conservation, technical assistance, etc. EFs may also be set up as conservation funds for biodiversity and protected area management, with financing coming from, for example, debt-for-nature swaps and donor grants (GEF, USAID, etc.). There are also credit lines and revolving funds for pollution abatement.

5.2.2.4. The key lessons learned with respect to international experience in the use of such investment funds for environmental management include:

1. EFs are more successful if they focus on a specific problem, for example, identified environmental hotspots (i.e., tailor the solution to the problem);
2. EFs are often used to respond to regulatory and market failures; hence there must be a combination of regulatory/policy and market-based incentives to reduce pollution;
3. EFs, to be effective, need sound management, including risk management and corporate governance; and
4. Subsidies need to be well-justified and phased out over time.

5.2.2.5. In conclusion, Dr. Lovei reiterated that improving environmental services is imperative to achieve better health conditions and the MDGs. Overcoming the financial challenge requires conditions for sustainable financing, partnerships and good public environmental expenditure management. Beyond financing, good governance, political will to support environmental policies, strong local institutions, public information and participation in decision-making are essential.

5.2.3. Case Study: EBRD/GEF Environmental Credit Facility in Slovenia

5.2.3.1. The European Bank for Reconstruction and Development (EBRD), in co-operation with the Global Environment Facility (GEF), is implementing a Credit Facility (the “Facility”) in Slovenia within the GEF International Waters Focal Area. The primary objective of the Facility is the reduction of nutrient load to the Danube river basin (Slovenia Sava basin). It will also finance reductions in other water pollutants, primarily toxic substances. The main focus is on industrial companies, small and mid-sized municipalities, and large livestock farms to reduce their pollution of surface and groundwater.

5.2.3.2. The GEF is supporting the Facility with a $9.9 million grant. Out of these grant funds, the sub-borrowers will be entitled to receive, after

successful completion of sub-projects, completion fees. The participating banks will receive administrative and completion fees as compensation for the additional work associated with the implementation of the Facility.

5.2.3.3. GEF funds also provide a variety of support services integral to the Facility. An additional $0.907 million of GEF funding is being used to support technical assistance and marketing activities. An independent environmental expert has been engaged to undertake monitoring and reporting on projects, to confirm that each project complies with the required eligibility criteria, and to verify that the projects have been implemented according to these criteria. The Facility is also supported by business advisory services to provide support to companies and municipalities wanting to develop and implement water pollution reduction solutions.

5.2.3.4. EBRD is providing up to €45 million (about $60.9 million) under the Facility, which is on-lent to local commercial banks (the "Participating Banks"). The program is an example of a successful "revolving fund," which has spurred and motivated private banks to lend for the cleanup of the Danube River. The participating banks channel sub-loans to private and municipal entities investing in water pollution reduction projects. As of 30 June 2006, €35 million ($47 million) has been on-lent to sub-borrowers to finance 41 sub-projects, and the full EBRD loan amount was targeted to end in 2006.

5.2.3.5. Mr. Igor Zalar provided the private sector perspective on the emerging market. Volksbank Ljudska Bank, the first bank to participate (in December 2003), had already placed €12 million ($16 million) of EBRD funds into 12 projects, which generated a total of €28 million ($37.8 million) in ecological investments. Of these, nine projects have been completed, which have been successful in improving wastewater quality in Slovenia. For example, the municipality of Radovljica invested in a new wastewater treatment facility and achieved 94–96 percent reduction in COD, $BOD_{5,}$ nitrogen and phosphorus. From a credit perspective, the bank has experienced no problems with repayment.

5.2.3.6. According to Mr. Zalar, the newly enacted European Union environmental standards in Slovenia, stricter enforcement and increased wastewater taxes, have created demand from companies for financing sources that could be utilized to bring them into compliance. The bank recognized this as an opportunity to establish new business lines that would position it as more environmentally responsible and the facility offered attractive fees that provided strong financial incentives for companies or municipalities and the bank. Companies or municipalities will receive a completion fee of 12 percent of the loan while the participating banks will get 2 percent at project completion and environmental check.

5.2.4. Case Study: Egypt Pollution Abatement Facility

5.2.4.1. Mr. Hocine Chalal (The World Bank) presented the second case study involving a multi-donor pollution reduction investment program in Egypt. Mr. Chalal's presentation introduced an intervention model, which involves very active and coordinated participation of the central government on the policy/regulatory and investment front. The project structure is designed to transform a soft loan into a commercial loan with a grant component, allowing 80 percent of the original loan to "revolve" in the sense that the funds will be available for future loans.

5.2.4.2. Egypt's Second Pollution Abatement Project (SPAP) has recently entered into its implementation phase. This project takes a market-based approach where industrial companies located in environmental hotspots are offered an attractive financial package in order to carry out pollution abatement investments. The financial package is managed through a financial intermediary (commercial bank) that bears the credit risk as well as the foreign exchange risk vis-à-vis the financiers of the project. This financial structure was tested successfully under the first Pollution Abatement Project implemented between 1997 and 2005.

5.2.4.3. The basic financial mechanism involves a financial intermediary extending a loan at the prevailing market rate to an eligible company (i.e., creditworthy and environmentally committed). Upon verification of the performance and completion of the project, 20 percent of the original loan is waived, which allows the remaining 80 percent to be made available for future loans. Based on the experience of the first Pollution Abatement Project, the facility offers suitable incentives for industrial companies to improve their environmental performance and regulatory compliance. The approach provides a commercially viable option for lending institutions while inducing companies to internalize their environmental costs.

5.2.4.4. This Pollution Abatement Facility is financed from a pool of soft loans totaling approximately $160 million provided by four co-financiers, namely: a) The World Bank: $20 million; b) European Investment Bank (EIB): €40 million ($54 million); c) Japan Bank for International Cooperation (JBIC): $40 million equivalent; and d) French Development Agency (AFD): €40 million. The funds are managed by the National Bank of Egypt (NBE). Other banks will participate in the project on the basis of agreements with the NBE. The technical assistance and capacity-building activities are financed by grants from EIB-FEMIP (Facility for Euro-Mediterranean Investment and Partnership) (about €3 million or $4 million) and the Government of Finland through a World Bank-managed trust fund ($1 million).

5.2.4.5. The project will be managed by a Project Management Unit (PMU) within the Egyptian Environmental Affairs Agency (EEAA). This team

will follow up on the project's technical aspects, guarantee its environmental integrity and consolidate financial data to be provided by NBE. Eligible industrial companies prepare their projects with technical assistance from the PMU.

5.2.4.6. Key outcomes of the project include:

1. Environmental conditions in selected environmental hotspots were improved;
2. Demonstrative effect that could lead to replicability of the program in other areas of the country and possibly in other countries;
3. Cleaner technology is promoted; and
4. Competitiveness of the Egyptian industrial sector is improved (export promotion, quality improvement, image and goodwill enhancement, overall economy of production).

5.2.5. GEF Project Preparation Revolving Fund

5.2.5.1. The concept of the proposed GEF Project Preparation Revolving Fund (PPRF) for East Asia was presented by Mr. Kamran Khan (The World Bank), Mr. S. Adrian Ross (PEMSEA) and Ms. Amelia Supetran (UNDP).

5.2.5.2. The shortage of financially viable projects is a critical bottleneck to scaling up investment in environmental programs in East Asia. The prospective project sponsors, be they public sector institutions or private project promoters, often lack the capacity and resources to develop ideas and concepts into fully developed projects which can be presented to a funding source/lending institution. While a number of donors and public/private sector institutions have resources available for project lending, there is a severe shortage of funds for project preparation. Lack of financially viable projects is also cited as the most critical reason for the lack of involvement of private lenders in the sector.

5.2.5.3. The concept involving a PPRF is being developed by GEF, with The World Bank, PEMSEA and UNDP. The PPRF can provide project preparation 'loans' based on an evaluation of applications via-a-vis criteria on the environmental objectives and financial analysis to determine if the proposed project can get financed by the financing source identified in the proposal. The project preparation cost (the loan) can be capitalized into the project financing; hence, repayment of the loan can occur when the project obtains financing. The implementation model(s) for the PPRF are currently being explored.

5.2.5.4. The rationale for a PPRF is that many potential pollution reduction investors (e.g., local government units and the private sector) are unable to access international financing because they lack the capacity to prepare investment proposals of the quality and in the format required by the financing agencies. The PPRF would serve as an intermediary between the target clients and the financing

sources, i.e., it would be positioned as a mainstreet institution — capable of dealing with the established financiers of environmental projects, with the outreach (urban and rural) and the mandate to work with the target clients. It is felt that this approach has the potential to stimulate the flow of funds to the target clients.

5.3. Summary, Conclusions and Recommendations

5.3.1. The workshop started with the presentation of the conceptual framework that underpins a successful integrated policy to address coastal and marine degradation caused by land-based pollution and provides real life policy instruments that have been used to address different forms of degradation. After this context was set, the workshop discussed specific examples of potential instruments — in the form of revolving funds — to address coastal and marine degradation.

5.3.2. The workshop assessed why financing resources for pollution reduction projects are under-utilized in the target countries, and explored the potential role and challenges of a PPRF from the perspective of clients (i.e., local governments and the private sector). Specifically, the workshop discussed:

1. the technical, policy and financial barriers to preparing projects in pollution prevention and reduction (e.g., sewage treatment, agricultural waste management, wastewater management, etc.);
2. experiences in the development and implementation of revolving funds;
3. the rationale for and concept of a PPRF; and
4. a proposed process for testing the feasibility of a GEF-supported pollution reduction PPRF in the East Asia region.

5.3.3. The panel discussion and the question-and-answer session involved a lively exchange of ideas involving the PPRF concept. The panel discussants were Mr. Paul D. Lazaro (Development Bank of the Philippines), Hon. Mary Jane Ortega (San Fernando City, La Union, Philippines), Mr. Juergen Lorenz (Pro-Environment Consortium), Mr. Zalar and Mr. Chalal. The moderator was Dr. Tracy Hart (The World Bank). Through the panel discussion and open forum, clarification of the perspectives of clients, donors and financing institutions on the effective demand for the proposed PPRF was achieved.

5.3.4. The key points, which are most relevant for the development of the PPRF concept, are listed below:

1. An important element in the project concept is due diligence, to better understand the prospective public (and private) client demand for the project preparation loans; the Local Governments (LGs) prefer grants or soft loans for project preparation.
2. The prospective borrowers must have flexibility vis-à-vis the selection of consultants; there is a need to utilize and train local consultants to improve project quality.
3. General provision of technical assistance to LGs is not enough; LGs also need instruments such as the PPRF to prepare good projects and get them financed within a reasonable amount of time.

4. Development Banks will welcome PPRF if it could generate high-quality projects.
5. Involvement of private financial institutions will be essential to implement the PPRF.
6. PEMSEA's role as a technical assistance provider and advisor on environmental issues will be critical.
7. LGs will value the PPRF as a clearing house for information about financing sources.
8. Given the fund size to population size ratio in Slovenia and Egypt, a PPRF in East Asia would either have to be very large, or cover a relatively small percentage of the population.

ANNEX 1
Workshop Program

Date	Time	Activity/Presentation
12 December	1100 – 1130	**Thematic Workshop Keynote:** **Local Government Financing for Water, Sewerage and Sanitation: Overview of Issues** Dr. Cielito F. Habito (Ateneo de Manila University)
13 December	0830 – 0900	**Plenary Keynote:** **Sustainable Development for the Seas of East Asia** Dr. Magda Lovei (The World Bank)
14 December	0830 – 0900	**Plenary Keynote:** **Water, Environment and Development: Progress and Initiatives** Mr. Paul van Hofwegen (World Water Council)

Workshop on Public and Private Sector Investment in Water, Sewage and Sanitation: Approaches and Case Studies
12 December 2006

Time	Activity/Presentation
	Session 1: Local Government Approaches to Leveraging Environmental Investments
1130 – 1150	**1.1. Chair's Introduction:** **Challenges in Promoting Private Participation in Water and Wastewater: "Towards a Financially Sustainable Framework"** Mr. Aldo Baietti (World Bank)
1150 – 1225	**1.2. Regulation of Water and Sanitation Services** Mr. Alfonso Guzman (Castalia Strategic Advisors)
1225 – 1300	**1.3. Private Specialized Operators of Water and Sanitation Utilities in Small- and Medium-Size Municipalities: The Colombia Case Study** Mr. Menahem Libhaber (World Bank)
1300 – 1430	Lunch break
1430 – 1455	**1.4. Manila Water Company: A Case Study on Public-Private Partnership** Ms. Lala D. Fabella and Mr. Perry Rivera (Manila Water Co.)
1455 – 1520	**1.5. Public-Private Partnerships for Sewage Treatment and Solid Waste Management in Guangzhou, China** Ms. Yuan Xiuli (Guangzhou Sewage Treatment Co. Ltd.)
1520 – 1530	**Wrap up** Mr. Aldo Baietti
	Session 2: Innovative Financing and Revenue Generation at the Local Government Level
1530 – 1540	**Introduction** Dr. Cielito F. Habito (Ateneo de Manila University)
1540 – 1555	**2.1. Managing Phnom Penh Water Supply**

Time	Activity/Presentation
	Mr. Long Naro (Phnom Penh Water Supply Authority, Cambodia)
1555 – 1610	**2.2. Challenges and Experiences of Local Governments on Wastewater/Sewage Treatment: The Case of Indonesian Cities** Ms. Yuyun Ismawati (Balifocus, Indonesia)
1610 – 1625	**2.3. Environmental User Fee System and Trust Fund for Coastal Management and Sustainable Tourism in Puerto Galera** Hon. Aristeo E. Atienza and Hon. Rafael Cataquiz (Puerto Galera, Oriental Mindoro, Philippines)
1630 – 1700	Tea/Coffee Break
1700 – 1720	**2.4. Wastewater Tariffs in Thailand** Dr. Wijarn Simachaya (Ministry of Natural Resources and Environment, Thailand)
1720 – 1740	**2.5. Creative Financing Solution for Water Supply and Sanitation in the Philippines** Ms. Alma D. Porciuncula (Development Alternatives, Inc., FORWARD Project – Philippines)
1740 – 1800	**2.6. Financing Cooperation for the Expansion of Environmental Facilities** Mr. Il-Ho Jung, Mr. Dong-Woo Kim and Mr. Hun Suk* (Boo Kang Tech, RO Korea)
1800 – 1845	**Panel Discussion/Open Forum** Moderator: Dr. Mara Warwick Panelists: ▪ Dr. Samuel Arle Dan Biller (World Bank) ▪ Mr. Paul D. Lazaro (Development Bank of the Phil.) ▪ Hon. Mary Jane C. Ortega (San Fernando City, La Union, Philippines) ▪ Mr. Juergen Lorenz (Pro-Environment Consortium) ▪ Mr. Paul van Hofwegen (World Water Council)
1845 – 1900	**Wrap up and Conclusion** Dr. Cielito F. Habito

Workshop on GPA Implementation: National and Local Challenges
13 December 2006

Time	Activity/Presentation
0900 – 0910	**Chair's Introduction** Dr. Anjan Datta (UNEP/GPA)
0910 – 0930	**Outcomes of the IGR-2 Meeting 2006 and Implementation of the GPA for 2007-2011: Milestones in the MDG and WSSD POI Agenda** Dr. Anjan Datta
	Session 1: Issues and Challenges to Financing Pollution Reduction Programs/Projects
0930 – 0950	**1.1. Unmet Demands in Water and Sanitation: What is the Cost to East Asia?** Dr. Tracy Hart (The World Bank)
0950 – 1010	**1.2. An Overview of Public and Private Sector Capacities in Environmental Investments in Five East Asian Countries** Ms. Maria Corazon Ebarvia–Bautista and Mr. S. Adrian Ross (PEMSEA)
1010 – 1030	**1.3. China's Opportunities and Challenges in GPA Implementation** Prof. Yibing Su (Chinese Research Academy of Environmental Sciences)
1030 – 1100	Coffee/Tea Break
	Session 2: Policies and Programs to Strengthen Investments in Pollution Reduction
1100 – 1115	**2.1. Haikou City's Corporate Approach to Environmental Services** Hon. Wang Lu (Deputy Mayor, Haikou City, Hainan Province, PR China)
1115 – 1130	**2.2. Ningbo Water and Environment Project** Mr. Li Zhibo and Mr. Qian Chen (Ningbo Municipal Development and Reform Commission, Ningbo City ,Zhejiang, PR China)
1130 – 1145	**2.3. Management of Livestock Wastes in East Asia** Mr. Weiguo Zhou (The World Bank)
1145 – 1200	**2.4. Investment in Water, Sewage and Sanitation: The Case of Southern Mindanao Integrated Coastal Zone Management Project, Mindanao, Philippines** Dr. Romeo Basada, Mr. Jim O. Sampulna and Mr. Ricardo L. Calderon (Department of Environment and Natural Resources)
1200 – 1220	**Open forum**
1220 – 1230	**Wrap up and conclusion** Dr. Anjan Datta

Workshop on Policies and Incentives for Scaling up Investments for Pollution Reduction
13 December 2006

Time	Activity/Presentation
	Session 1: Policy and Incentive Framework
1400 – 1410	**Overview of Policies and Incentives for Scaling Up Pollution Reduction Investments** Introduction to the Workshop by Kamran Khan (The World Bank)
1410 – 1430	**Policies and Incentives for the Reduction of Coastal and Marine Environmental Degradation** Dr. Samuel Arle Dan Biller (The World Bank)
1430 – 1450	**Financing Environmental Expenditures: Context and International Experience** Dr. Magda Lovei (The World Bank)
	Session 2: Revolving Fund Experience
1450 – 1510	**EBRD/GEF Environmental Credit Facility in Slovenia** Igor Zalar (Volksbank-Ljudska banka d.d.)
1510 – 1530	**Case of the Egypt Pollution Abatement Facility** Hocine Chalal (The World Bank)
	Session 3: Project Preparation Revolving Fund in East Asia: Challenges and Benefits
1530 – 1600	**Concept Presentation: Project Preparation Revolving Fund to Facilitate Environmental Investments in East Asia** Mr. Kamran Khan (World Bank) Mr. Stephen Adrian Ross (PEMSEA) Ms. Amelia Dulce Supetran (UNDP-Philippines)
1600 – 1630	Tea/Coffee Break
1630 – 1800	***Panel Discussion:*** **Key Considerations for the Establishment of a Project Preparation Revolving Fund in East Asia** Moderator: Tracy Hart Potential Panelists: ▪ Mr. Paul D. Lazaro (Development Bank of the Philippines) ▪ Hon. Mary Jane Ortega (Mayor, San Fernando City, La Union, Philippines) ▪ Mr. Juergen Lorenz (Pro-Environment Consortium) ▪ Mr. Igor Zalar ▪ Mr. Hocine Chalal
1800 – 1810	**Open forum**
1810 – 1820	**Wrap up and Conclusion** Mr. Kamran Khan
1820 – 1830	**Thematic Workshop Conclusion** Dr. Cielito F. Habito

ANNEX B
List of Speakers

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