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ESP EASTERN INDONESIA EXPANSION PROGRAM FINAL REPORT

JANUARY 2009 – MARCH 2010



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Photo Credit: ESP

ESP in collaboration with PDAM Jayapura and the Institution of Community Development and Empowerment (IPPM), developed the Master Meter facility to help low-income communities in Kampung Vietnam and Kampung Angkasa connect to piped water. Around 92 families in Kampung Vietnam and 50 in Kampung Angkasa are now enjoying piped water facilities through the Master Meter.

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*USAID's Environmental Services Program (ESP)
promotes better health through
improved water resources management and
expanded access to clean water and sanitation services*

The Environmental Services Program is implemented by
Development Alternatives, Inc.



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ACRONYMS

The following is a list of acronyms commonly used in this report and on the project as a whole.

APA	Aceh-Papua Add-On
ATW	Akademi Tirta Wiyata (Technical University, based in Magelang, Java)
Bappeda	Badan Perencanaan Pembangunan Daerah (Regional Board Development Planning)
BHS	Basic Health Services, USAID
BRI	Bank Rakyat Indonesia
CARE	The humanitarian organization fighting global poverty
CBO	Community Based Organization
CBSS	Community Based Sanitation System
CGH	Clean Green Hygiene
CKNet	Collaborative Knowledge Network Indonesia (network of 10 universities)
COP	Chief of Party
CSS	City-wide Sanitation Strategy
DCOP	Deputy Chief of Party
DPRD	Dewan Perwakilan Rakyat Daerah (Local Parliament)
ESP	Environmental Services Program
EIE	Eastern Indonesia Expansion
FGD	Focus Group Discussion
HPP	High Priority Province
HWWS	Hand Washing With Soap
IATPI	Indonesian Society of Sanitary and Environmental Engineers
ITS	Institut Teknologi Sepuluh Nopember (Technical University Surabaya)
LTTA	Long Term Technical Assistance
MLD	Mitra Lingkungan Dutaconsult (Local consultant Company, based in Jakarta)
NGO	Non Governmental Organization
NRW	Non-Revenue Water
PDAM	Perusahaan Daerah Air Minum (Local Water Utility)
PEMDA	Pemerintah Daerah (Local Government)
PKK	Pemberdayaan & Kesejahteraan Keluarga (Empowerment and Family Welfare)
PMP	Performance Monitoring Plan
Pokja AMPL	Kelompok Kerja Air Minum dan Kesehatan Lingkungan (Working Group Drinking Water and Environment Health)
PTAM	Perusahaan Terbatas Air Manado (Water Company in Manado)
PT DSA	Perusahaan Terbatas Dream Sukses Airindo (Water Company in Ambon)
SANTT	Sanitation Technical Team (under Bappenas / Ministry of Planning)
SAP	Sanitation Action Plan
STBM	Sanitasi Total Berbasis Masyarakat (Community-Based Total Sanitation)
STTA	Short Term Technical Assistance
SWOT	Strengths, Weaknesses, Opportunities, and Threats
SWS	Safe Water System– a USAID Program
TOT	Training of Trainers
TTPS	Tim Teknis Pembangunan Sanitasi (Sanitation Technical Team)
TVRI	Television Republic Indonesia (State-owned television network)
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WATSAN	Water & Sanitation
WQM	Water Quality Monitoring

MASTER METER IN JAYAPURA: Testament of a Dedicated PDAM

In Kampung Vietnam and Kampung Angkasa, two communities in Jayapura, Papua, people are still struggling to gain access to piped water. Most families are currently fetching water from contaminated shallow wells or buying water from vendors at prices much higher than tariffs charged by the Municipal Water Company (PDAM). Others gain water by illegally connected to the PDAM piping system.

Over the course of the program, ESP worked in collaboration with PDAM Jayapura and the Institution of Community Development and Empowerment (IPPM), to develop the Master Meter to help communities in Kampung Vietnam and Kampung Angkas gain access to piped water.



ESP
A Master Meter consumer in Kampung Angkasa, Jayapura, Papua is enjoying piped water right from her backyard.

The Master Meter is an innovative approach that enables poor communities to access piped water. Community-based organizations (CBOs) enter into an agreement with the PDAM and pay for the water delivered through the single meter. The PDAM provides piped water to a single, metered access point and the CBOs extend and manage the piped water systems which directly reach local households.

Although the construction of the Master Meter was funded by the ESP Eastern Indonesia Program, PDAM Jayapura and communities took part in the system development. The PDAM provided the Master Meter and main piping system worth of Rp 90 million. Meanwhile, the communities provided the smaller piping system which distributed water directly to their household taps.

For Master Meter maintenance and water distribution management, the communities decided to form four community-based organizations (CBO). CBO Apace and CBO Baru Muncul operate in Kampung Vietnam while CBO Kobe Oser and CBO Komta were established to manage Master Meter beneficiaries in Kampung Angkasa.

In just a few months, the benefit of piped water is apparent in Kampung Vietnam and Kampung Angkasa. Around 92 families in Kampung Vietnam and 50 in Kampung Angkasa are now enjoying piped water facilities through the Master Meter.

“It used to be hard to find water here. Now that piped water is available, women here do not need to carry water to their homes,” said Hulda Oropa Ibu Hulda, one Master Meter beneficiary in Kampung Vietnam.

Dolly Wona Palo, head of CBO Apace explained another benefit. “Through the CBO, we are learning how to manage an organization. The CBO functions like a mini-PDAM because we collect water payments as well as receive complaints from people when water is not running well. We have access to PDAM management, so all complaints can be handled as soon as possible.”

The launch of the Master Meter facilities in Kampung Vietnam and Kampung Angkasa is testament to PDAM Jayapura’s commitment to continuously improving its services, especially to low-income consumers.

The Master Meter is not the only breakthrough from the PDAM. In an effort to provide more efficient services to their customers, the two Local Governments (Jayapura Regency and Jayapura City) agreed on joint management of PDAM Jayapura, which will serve existing and future consumers in both locations. The joint management agreement of the new PDAM, amongst the first in Indonesia, was signed on February 11, 2010.



ESP

Residents of Kampung Vietnam, Jayapura contributed to the development of Master Meter in their area by laying out the piping system.



ESP

Director of PDAM Jayapura, Gading Butar-butar, is washing his hands in a water tap connected by the Master Meter facility in Kampung Angkasa, Jayapura.

The director of the PDAM Jayapura, Gading Butar-butar, explained the impact of this joint operation. “The joined management model sets an example for other regional administrations in Indonesia. A jointly managed PDAM, owned by city and regency administration, will be more effective to improve services to consumers. The management becomes more efficient and thus PDAMs will have more resources to increase service coverage and reach out to a larger number of consumers.”

In February 2010, ESP’s Eastern Indonesia concluded its programming activities in three cities in Manado, Ambon and Jayapura. Closing-out events, showcasing achievements and improvements in the working sites, were held on February 9 in Manado and February 11 in Jayapura and Manado.

With only one year of field implementation, the Eastern Indonesia program is considered short. However, it is apparent that the impact it has

brought to communities and other stakeholders may not be. The Master Meter in Kampung Vietnam and Kampung Angkasa has inspired PDAM Jayapura to replicate similar community-based approaches in other areas in the city.

Map of Final Report Eastern Indonesia Region ESP Integrated Sites



I. INTRODUCTION

I.1. BACKGROUND

The Environmental Services Program (ESP) was a 5.5 year program developed and funded by USAID/Indonesia and implemented under the leadership of Development Alternatives, Inc. (DAI). ESP provided technical assistance and related services to impact Strategic Objective (SO) of Basic Human Services (BHS) focusing on the interdependence of health and the environment and their impact on health outcomes. The main objective of ESP was to improve the health and livelihoods of Indonesians through improved and expanded access to key environmental services such as water, sanitation and solid waste in seven High Priority Provinces: Nanggroe Aceh Darussalam, North Sumatra, West Java, DKI Jakarta, Central Java/DI Yogyakarta and East Java.

The Dutch Government has a long history of providing technical and financial assistance to cities in Eastern Indonesia (North Sulawesi, Maluku and Papua) to increase access to improved water supply services. Realizing the potential and added value of introducing the ESP program to these same areas, the Dutch Embassy in Jakarta approached the USAID mission in Jakarta to develop a formal collaboration under the Potomac Agreement, which encourages bilateral donors to increase donor efficiency through the direct support of one another's development programs. This resulted in a contract, signed on December 3, 2008 between the Dutch Government and USAID to finance a 15 month expansion of the ESP program to Manado (North Sulawesi), Ambon (Maluku) and Jayapura (Papua).

I.2. APPROACH

The ESP Eastern Indonesia Extension program was comprised of both upstream and downstream activities to improve access to water and sanitation. This included watershed management and protection plans, PDAM technical and institutional support, the development of sanitation strategies and pilot systems in urban and peri-urban areas, and downstream community-based sanitation and health and hygiene.

This upstream-downstream approach is centered on the following two pillars:

(1) support the three Water Utilities (PDAM Ambon, PDAM Jayapura and PT Air Manado) in increasing access to piped water supply in their target areas, including model raw water protection plans and

(2) support four Local Governments to develop City-wide Sanitation Strategies and Action Plans (covering waste water, solid waste and drainage), including development of several demonstration Community-Based sanitation and Solid Waste Management systems.

2. SUMMARY OF ACHIEVEMENTS

Below is a summary of comprehensive program achievements for the three Eastern Indonesian cities of Ambon, Jayapura and Manado over the project period of January 2009 – February 2010. Further Details of these achievements and reference to initial program targets can be found in Chapter 7.

- ✓ 4 new community groups implementing improved Water Resource Protection Plans (2) were formed;
- ✓ 2 PDAMs in Ambon and Jayapura have improved their technical and financial performance;
- ✓ 2 PDAMs were supported with debt restructuring programs, in combination with Corporate Plans, investment plans and customer satisfaction surveys;
- ✓ 2 PDAMs implemented Non-Revenue Water Reduction pilots, with results securing the development of investment plans to reduce city-wide losses and increase connections;
- ✓ 2 PDAMs were supported with computerized billing and accounting systems;
- ✓ 4 Master Meter systems were established in Jayapura, benefiting 142 households, or 800 people;
- ✓ The first PDAM joint management agreement was signed by Kota & Kabupaten Jayapura Government, both Local Parliaments and Province for PDAM Jayapura;
- ✓ Detailed Engineering Designs for centralized sewerage for Manado Boulevard and 2 small scale sewerage systems for Ambon, to benefit a total 3,500 households, were accepted by Local and Central Government for financing (total Rp 24 billion);
- ✓ 2 Micro-Credit Agreements were signed by PT Air Manado and PDAM Ambon and two local BRI banks; 144 households now have access to clean water through Micro-Credit;
- ✓ 5,819 households, or 25,610 people, now have increased access to clean water from two PDAMs;
- ✓ 4 City-wide Sanitation Strategies and Action Plans (CSSPs) were developed by Pokja-San in Manado, Ambon, Kabupaten and Kota Jayapura.
- ✓ 7 Community-Based Solid Waste Management Systems were installed, benefiting 3,405 people;
- ✓ 5 Community-Based Sanitation Systems were installed, benefiting 4,805 people, in addition to the establishment and training of Community-Based Organizations;
- ✓ 5 schools implemented Clean, Green and Hygiene (CGH) concepts;
- ✓ 4,113 people were trained in effective hand washing with soap;
- ✓ 7,392 participants took part in ESP trainings and workshops, 31% of which were women;
- ✓ 6 collaborative programs were implemented with USAID partners; and
- ✓ 6 awareness campaigns were implemented on PDAM public relations and Micro-Credit

3. NATIONAL-LEVEL OVERVIEW

Starting December 2008, ESP mobilized a team of local experts, the majority of whom were based in new ESP offices in the three cities, with support from regular ESP specialists and advisors from Jakarta. ESP conducted initial meetings with each Water Utility and Local Government to introduce the ESP concept and identify the specific needs for each location. Partner collaboration expanded and deepened over the 15 month program and resulted in integrated programming initiatives that spanned all three Eastern Indonesia cities, in addition to various National-level events to raise awareness and deepen program sustainability.

3.1. PARTNER COLLABORATION

ESP Eastern Indonesia program engaged in close collaboration with both National Government Ministries, local NGOs and universities, and various donor programs to minimize overlap and create effective, long-lasting partnerships. Over the course of the program, ESP engaged closely with the following partners:

- **National Government.** Ministry of Public Works, especially BPP-SPAM and Cipta Karya, fully supported ESP efforts to establish a joint management system for PDAM Jayapura by Kota and Kabupaten Local Governments and to improve relations between PT DSA and PDAM Ambon. MPW also agreed to finance a new sewerage system along Boulevard in Manado, based on the Detailed Design developed under ESP. They were fully involved in all STBM activities facilitated by ESP and conducted by local partners in all three cities. Bappenas fully supported the development of local sanitation working groups and subsequent City-wide Sanitation Strategies and Action Plans.
- **Ck-Net.** ESP worked with CKNet, a network of ten professional universities, to implement a comprehensive capacity building program for Urban Drainage for the Pokja San in all three cities. ESP conducted Urban Drainage Management trainings in all three cities. This was combined with an exposure visit to successful sanitation programs in Kota Surabaya, Kabupaten Malang (ESP) and Blitar (ISSDP). CK-Net provided follow-up to Pokja San in each city, assisting them with requests for improved drainage systems.
- **USAID/SWS, UNICEF, CARE, and Mercy Corps on STBM Dissemination.** As follow-up to the new Community-Based Total Sanitation Policy (STBM), ESP and its partners organized two large workshops in Jayapura and Ambon. The main focus of the workshops was to promote behavior change in the community towards health and hygiene practices. In November all partners organized a large event in each city in commemoration of Global Hand Washing with Soap Day. ESP also provided Technical Support for field activities of Mercy Corps (Ambon) and CARE (Jayapura).
- **Collaboration with Perpamsi.** ESP collaborated with DPD PERPAMSI Maluku and Papua to develop the capacity of PDAM Ambon and Jayapura billing and financial systems. A program developed by BPKP in billing management, accounting, and inventory including asset management was installed, combined with training of PDAM staff by software and financial experts from BPKP. After completion of ESP, BPKP will continue monitoring and providing trouble shooting service where needed.

3.2. PROGRAM INTEGRATION

ESP drew from an abundance of existing technical resources and experience from other ESP Provinces, to accelerate progress in water and sanitation services in Manado, Ambon, and Jayapura. The following thematic activities were developed and implemented to addressing over-arching challenges applicable to each Eastern Indonesia city:

- **Raw Water Protection.** ESP field teams worked with PDAM and Local Government to introduce various methods of raw water protections, in collaboration with the local communities living upstream within the PDAM catchment areas. ESP introduced the Field School concept in two upstream locations in Ambon and two in Jayapura.
- **Innovative Water for the Poor Schemes.** ESP supported PT Air Manado (PTAM) and PDAM Ambon with the introduction of a Micro-Credit program, already successfully implemented in other ESP cities, to enable low-income households to pay for their PDAM connection fees in installments, rather than as a single up-front payment. ESP teams also introduced the communal Master Meter in Jayapura to enable poor communities to access piped water from a single metered access point provided by the PDAM, and managed by Community-Based Organizations (CBOs).
- **PDAM Technical support.** Municipal Water Companies, or PDAM, are service-oriented public companies. Therefore their key assets are not their pipe networks or water treatment plants, but instead their human resources. In Eastern Indonesia, almost all PDAMs face the challenge of very low human resource capacities. In response, ESP placed PDAM specialists in each PDAM (Ambon, Jayapura) to provide intensive on-the-job PDAM staff training programs with the necessary technical / institutional / financial improvement interventions.
- **City-wide Sanitation Program.** The ESP team worked with the four local governments of Manado, Ambon, and Jayapura to initiate the development of City-wide Sanitation Strategies (CSSs) and Sanitation Action Plans (SAPs). Similar to those implemented in five cities across Java and Sumatra, Eastern Indonesia cities not only address waste water, but also solid waste management and urban drainage. ESP supported the establishment of new and/or strengthened existing Sanitation Working Groups (PokjaSan) and facilitated the development of a “City Sanitation White Book” and “Sanitation city Profile” to map current sanitation conditions, main stakeholders, and specific challenges and opportunities for each city.
- **Community-Based Sanitation and Solid Waste Management Pilots.** ESP worked with the PokjaSan to identify suitable poor communities for community-based WATSAN systems, to be used as CSS / SAP models. ESP Community WATSAN specialists facilitated local communities and schools in designing, constructing, and maintaining community-based WATSAN systems, including conducting training on operations, billing, and management. Focus for the Community Based Solid Waste Management program consist of composting and plastic recycling and were strengthened due to close collaboration with local NGOs, Mercy Corps, and CARE.
- **Hygiene Promotion.** With the aim of reducing the prevalence of diarrhea, ESP introduced improved hygiene behavior change at the community, school, and household levels. This included a comprehensive outreach/communications strategy involving the development of training resources, posters, brochures, and games that emphasize effective practices for Hand Washing with Soap (HWWs). It also includes the development of the Clean, Green and Hygiene (CGH) Community manual that integrates environmental and personal health improvement at the community or school level.

- **STMB and Health and Hygiene Promotion.** In all three cities, ESP organized events, including workshops, campaigns, exposure visits, to promote Health & Hygiene and STBM to target schools and communities. In implementing these programs, ESP is working closely with UNICEF, Mercy Corps and SWS in Ambon, and with UNICEF and CARE and SWS in Jayapura.

3.3. NATIONAL-LEVEL EVENTS

Over the course of the project, ESP Eastern Indonesia played an integral role in several large National-level events to raise public and media awareness for water and sanitation challenges specific to Eastern Indonesia. The following events, including summits, seminars, media discussions, and exposure visits, involved government, private sector, NGOs, and donor partners:

- **City Sanitation Summit.** This event was held from April 20-21, 2009 in Jakarta in collaboration with ISSDP and the Sanitation Technical Team (TTPS). A Sanitation Declaration was signed by each mayor from all four Eastern Indonesia sites, cementing commitment to sanitation development at the local level. This included a media discussion, themed “The Long Road to City Sanitation Development in Indonesia.”
- **IndoWater Exhibition 2009.** ESP participated in Indonesia’s largest water and sanitation forum from June 17-19, 2009 with partners including SWS, UNICEF, CARE, and Mercy Corps. The event themed “Celebrating Local Champions” was followed by a Community-Based Total Sanitation (STBM) Seminar and media discussion concerning Eastern Indonesia WatSan efforts with other donors, including MercyCorps, CARE, UNICEF, and SWS. The Q&A media discussion was followed by field visits to Jakarta project sites to introduce six mainstream Eastern Indonesia media to solid waste management, Master Meter, and MCK++, resulting in 14 print and electronic media coverage (TV) from all three cities.
- **National Sanitation Conference.** This event was held from December 8-10, 2009 in collaboration with ISSDP and the Sanitation Technical Team (TTPS) and was attended by over 200 participants from throughout Indonesia. The purpose was to accelerate sanitation development to meet basic sanitation needs of the people. Specific goals included no more open defecation in 2014, to Reduce, Reuse and Recycle solid waste and to develop an environmental friendly final disposal of solid waste, and to drain water that flooded strategic locations in urban areas.



ESP JAKARTA
Ministers of Public Works, Health and Bappenas visited an ESP booth at the City Sanitation Summit in Jakarta, from April 20-21, 2009.

4. MANADO FINAL REPORT

Manado is the coastal capital of the Province of North Sulawesi, with a population of 420,000. Unlike most Indonesian cities whose water supply is serviced by a PDAM, Manado's water supply is managed by PT Air Manado, with the majority share controlled by the Dutch Public Water Utility (WMD). PT Air Manado planned to increase coverage by 20,000 households over the next two years, and targetted at least 10 percent of this through Micro-Credit. ESP support in water supply was thus limited to the development of a Micro-Credit program to accelerate expansion to reach urban poor customers who are unable to afford the cash down payment for a household connection.



ESP EASTERN INDONESIA

A woman is applying for Micro-Credit to obtain a new piped water connection from PT Air Manado, Manado.

Sanitation services in Manado are very poor, with no centralized sewerage nor properly constructed and maintained community sanitation systems. Improvement of this sector had to start with the establishment of a Sanitation Working Group, followed by development of City-wide Sanitation Strategy and Sanitation Action Plan and several demonstration Community-Based Sanitation (CBS) facilities, properly managed and maintained by local communities. In addition, ESP was asked to identify main issues on the urban drainage, introduce Community-Based Solid Waste Management, and to support Local and Central Government with a detailed engineering design for the first Centralized Sewerage System in Manado with capacity to treat waste water from equivalent 2,800 households.

ESP long-term staffing in Manado included a Regional Coordinator / Sanitation Facilitator, a Community-Based WATSAN Specialist and three Field Assistants for Micro-Credit, CBS construction, and Health and Hygiene communications (communities and schools).

Final Achievement of Water and Sanitation Program in Kota Manado:

- ✓ One Master Micro-Credit Agreement was signed by the PDAM and a local bank resulting in 144 households benefitting from access to clean water;
- ✓ One City-wide Sanitation Strategic Plan (CSSP) was developed;
- ✓ 3 Community-Based Solid Waste Management systems were developed, benefitting 1,685 people;
- ✓ 3 Small-Scale Sanitation systems were developed, benefitting 1,940 people;
- ✓ Detailed Engineering Designs for centralized sewerage for Manado Boulevard are benefitting 2,800 households;
- ✓ One school implemented Clean, Green and Hygiene (CGH) concepts;
- ✓ 3,010 people were trained in effective Hand Washing with Soap;
- ✓ One awareness campaign was implemented by ESP; and
- ✓ 3,894 participants took part in ESP trainings and workshops.

DEFINING ACHIEVEMENTS FROM MANADO INCLUDE:

ACCESS TO WATER

- **Micro-Credit.** ESP started this program in early 2009 with the facilitation of an MoU between PTAM and BRI, followed by staff training, development of promotion materials, and campaigns. Due to the lack of a safe water supply and poor communication between PT Air Manado and BRI, progression was slower than most other ESP locations. Several meetings facilitated by ESP resulted in improved communication between all parties and reduced administrative requirements by BRI. By the end of December 2009, a total of 144 new connections were installed. Although the original target of 1,000 new connections financed by micro-credit was not reached, this still represents roughly 10% of the total new connections made in 2009.

URBAN SANITATION

- **City-wide Sanitation Strategy and Sanitation Action Plan.** ESP, in collaboration with National Pokja AMPL, supported Manado local government to establish Pokja AMPL Kota Manado and to provide the Pokja with the capacity to prepare a City-wide Sanitation Strategy and Sanitation Action Plan for Manado City. The Pokja produced the CSS and discussed it in a workshop held in January 2010, attended by 40 local participants and representatives of Bappenas and Cipta Karya MPW. The sanitation strategy proposed received strong positive support from government and other stakeholders.
- **Real Demand Survey (RDS) in Sanitation and White Book Preparation.** To analyze the demand for sanitation, ESP facilitated a Real Demand Survey in Sanitation, resulting in a White Book specifically for Manado. The study was conducted by Universitas Sam Ratulangi Manado with 1,000 samples taken in nine sub districts. An exposure workshop was held in December 2009 and final report was included in the CSS Report and Sanitation Profile of Manado City.
- **Sewerage for Commercial Area Manado.** As a concrete demonstration of the increased interest and commitment of Kota Manado to rapidly improve the city waste water collection system, ESP facilitated meeting(s) between Pokja-San Manado and the Ministry of Public Works. Both parties agreed to finance a Centralized Sewerage System for the Manado Boulevard Area, provided ESP could support the Detailed Engineering Design and the city could provide land for the Sewage Treatment Plant. Work started in October 2009 by a consultant company hired by ESP and by the end of January 2010, the DED was completed and approved by all parties. The Local Government agreed on the land and the Provincial Government announced tender for the first construction phase, valued at ca. Rp 5 billion (US\$ 550,000). Total project cost covered by the Central Government during 2010-2011 will be approximately Rp 20 billion (US\$ 2.2 million).

COMMUNITY / SCHOOL BASED SANITATION

- **Community-based Sanitation System.** ESP financed the installation of two public toilets (MCK++) at Malalayang 2 and Karame. Community mobilization resulted in the formation of one Community-Based Organization (CBO) for each site, followed by Detailed Design, hiring the contractor and Operation & Maintenance training, including facilitation of tariff agreements for users of both facilities. The community in Karame agreed to a tariff of Rp 1,000 / family per day, while in Malalayang the tariff agreed was Rp 2,000 / family per day. The public toilet in Karame will benefit 189 HH and in Malalayang 2, 123 HH. In Bahowo, ESP assisted the community with the development of three Small-Scale Sewerage (SSS) System units, each with a capacity for collecting and treating domestic waste from 4-10 families. In total 20 families are benefitting from the three SSS systems. Since ESP support could not cover the entire community, community members agreed to continue constructing similar systems for all remaining households, using their own resources and labor. By the end of January, an additional 32 families constructed their own systems.
- **Community-Based Solid Waste Management (SWM) Training.** During September 2009, ESP conducted a Community-Based Solid Waste Management training in Karame, Malalayang and Bahowo, with instructors from the ESP Aceh field office, who successfully implemented the 3R program in several Aceh communities. A total of 347 households acquired tangible skills to practice 3R in SWM, in particular with regard to composting and plastic recycling. Results were exposed during the ESP close-out workshop conducted on February 9, 2010 and combined the formal opening of the three CBS and SWM systems with a half-day workshop and exhibition, attended by approximately 100 local participants and representatives from USAID, the Dutch embassy and ESP Jakarta.
- **Clean Green & Hygiene (CGH) School.** ESP conducted a CGH School TOT for representatives of teachers from 12 Primary Schools, with a total 44 participants. The TOT was a collaborative program between Dinas Pendidikan, Dinas Kesehatan, Dinas Kebersihan and ESP Manado and was followed-up by Hand Washing With Soap campaigns at the 12 Primary Schools. A total 2,932 students attended the Global Hand Washing with Soap Day from October 26 to November 9, 2009. ESP provided HWWS materials such as buckets, soap and hand towels. The next step to ensure sustainability will be to incorporate HWWS into the local curriculum using CGH School modules.
- **STBM Program.** ESP introduced a comprehensive STBM program in Bahowo, aimed at training the community on the Five STBM pillars and at working with the Pokja-San of Manado on integrating a STBM program within the City-wide Sanitation Strategy. After the initial training, the community became very enthusiastic about constructing communal septic tank systems to avoid further open defecation. ESP developed flexible communal septic tank designs to accommodate between 4 -10 households. Households constructed toilets in their homes and provided labor for all construction. ESP covered the cost of piping and the septic tank. As a result, three systems were constructed and the community is continuing household connections through a revolving fund system.



5. AMBON FINAL REPORT

Ambon, the capital of Maluku, is a beautiful city still scarred by recent conflicts. The PDAM office was completely destroyed and requested support to improve a poor billing system, high Non-Revenue water, water quality monitoring system, raw water protection programs, customer & media relations, and increase general staff knowledge. PT DSA, with majority-share owned by WMD, serves the eastern part of Ambon and uses its own water sources. ESP agreed to focus its water supply activities on strengthening the PDAM Kota Ambon.

Sanitation efforts facilitated by UNICEF and Mercy Corps strove to establish a local AMPL working group in Ambon, combined with a community-based WATSAN program in several poor neighborhoods. Discussions with all parties identified a strong need for technical support for both of these initiatives. It was agreed that ESP would focus work in Ambon on strengthening the PDAM and, together with UNICEF and Mercy Corps, develop a strong City-wide Sanitation Strategy and Action Plan that includes several community-based models. In addition, ESP supported an integrated Community-Based Sanitation and Solid Waste Management program in two relocation sites, in collaboration with Local and Provincial Government.

ESP long-term staffing in Ambon included a Regional Coordinator / Sanitation Facilitator, two PDAM Specialists, a Water Resource Management Specialist, and two Field Assistants.



ESP EASTERN INDONESIA

A woman of Kusu-Kusu village digs a biopori hole to augment percolation of rain water to recharge Air Keluar Spring, Ambon.

Final Achievement of Water and Sanitation Program in Kota Ambon:

- ✓ 2 new community groups are practicing improved Water Resource protection;
- ✓ 2 Water Resource Protection Plans were developed;
- ✓ One Master Micro-Credit Agreement was signed by the PDAM and a local bank and a potential 500 households are ready for new connections;
- ✓ 436 households now have increased access to clean water;
- ✓ PDAM Kota Ambon improved their technical and financial performance;
- ✓ One City-wide Sanitation Strategic Plan (CSSP) was developed;
- ✓ 2 Community-Based Solid Waste management systems were developed, benefitting 1,050 people;
- ✓ 2 Small-Scale Sanitation systems were developed, benefitting 2,865 people;
- ✓ 2 schools implemented Clean, Green and Hygiene (CGH) concepts;
- ✓ PDAM Kota Ambon was supported to develop a debt restructuring plan;
- ✓ PDAM Kota Ambon was supported to develop a NRW investment plan;
- ✓ 3 collaborative programs were implemented with USAID partners;
- ✓ 3 awareness campaigns were implemented by ESP; and
- ✓ 1,342 participants took part in ESP trainings and workshops.

DEFINING ACHIEVEMENTS FROM AMBON INCLUDE:

ACCESS TO WATER

- **Water Resources Management.** ESP supported the establishment of two Field Schools at Kusu-Kusu for the protection of Air Keluar Spring and at Kezia for Wainitu Spring. A total 33 participants were trained on the subject of water resource protection, including construction of 20 percolation wells and 200 biopori holes. Results were presented and observed as part of the ESP Close-out event from February 11-12, 2010 and was attended by over 100 local participants, including the Mayor of Ambon and representatives from USAID, the Dutch Embassy, UNICEF, Mercy Corps and ESP.
- **PDAM technical development.** A Chlorination Dosing Tank was installed at Wainitu Collection Reservoir to ensure that water distributed is free of harmful bacteria. A NRW reduction pilot study was implemented in a pilot area, selected by the PDAM with 400 customers and high water losses. It was found that after the study, 250 m³/day of water could be saved to serve 100 additional new customers. In addition, the replacement of 200 water meters resulted in increased registered consumption of 165 m³/ day, increasing revenue by Rp 10 million per month. The PDAM acknowledged these benefits and will replace the remaining 100 damaged / missing water meters. The payback period for this investment was calculated to be less than one year. Replicating this program over the entire PDAM coverage area could provide an additional 2,000 new connections. This would require investment of approximately Rp 3 billion, which could be recovered from increased water sales within one year. ESP presented these findings to the Local Government during the Close-out workshop in February 2010.
- **PDAM financial development.** In cooperation with DPD Perpamsi Maluku and BPKP Ambon, ESP facilitated development of computerized customer billing & accounting system programs and staff training using BPKP software. To further support the implementation of the billing and accounting software, ESP provided two desktop computers to the PDAM. BPKP and PDAM agreed to continue working relations after program completion, for monitoring and trouble shooting. DPD Perpamsi Maluku will expose results to other PDAMs of Maluku Province.
- **PDAM Corporate Plan and Debt restructuring.** With special request by PDAM Ambon, ESP also supported the PDAM with debt-restructuring, although it was not in the initial Work Plan. To support the preparation of the 2010-2014 Corporate Plan, ESP supported a Customer Satisfaction Survey, in which 80% responded that Water quality is satisfactory in rainy season, but only 60% during the dry season. The majority was also satisfied with the water quantity, both during the dry and rainy season. The most significant problem they expressed concerned water continuity, due to an unstable electricity supply from PLN.
- **PDAM public image improvement.** At the request of PDAM Kota Ambon, ESP facilitated a one week training, by a professional communication company, to PDAM



ESP AMBON

The installation of a chlorine dosing plant at Wainitu water source, combined with on-the-job training for Water Quality Monitoring for PDAM Staff .

Ambon and Jayapura customer relation staff to improve PDAM corporate image, media presentation, and customer relations. During the training, 15 PDAM staff prepared promotion materials, conducted ad-hoc customer surveys and prepared formal press releases for a real press conference with 20 local media representatives. Result of training is an increased ability of PDAM staff to obtain feedback from customers, better working relations with local press, and increased staff confidence.

- **Micro-Credit.** Although not included in the original ESP Work Plan, the PDAM requested ESP introduce the Micro-Credit program in Ambon, especially to increase connections in a new PDAM coverage area (Passo). ESP facilitated a MoU between BRI/Ambon and the PDAM, which was followed up by training for staff of both institutions and development of promotion materials, which was handed over to PDAM and BRI during the ESP closeout event. The initial target for new Micro-Credit customers in Passo is around 500. Depending on the results in Passo, the PDAM and BRI intend to introduce the scheme to other areas of Ambon.
- **Community-based Water Supply at Kayu Tiga.** ESP reviewed the existing water supply system at Kayu Tiga and proposed improvement of the system, agreed by the community. The activities include planning, socialization, and physical works on extension of the distribution network for 260 house connections benefitting more than 900 persons. The community has already improved the water intake to improve water quality, particularly during the rainy season. To improve the existing system further, the ESP initiative received a positive response by Dinas PU Kota Ambon, who provided funds through APBD 2010 to construct a Rapid Sand Filter and Chlorination Dosage System for the water intake.

URBAN SANITATION

- **City-wide Sanitation Strategy and Sanitation Action Plan.** Starting in March 2009, ESP in collaboration with UNICEF and National Pokja AMPL, assisted Ambon local government to establish Pokja AMPL Kota Ambon and facilitated the Pokja to prepare a City-wide Sanitation Strategy and Sanitation Action Plan. The Pokja, facilitated by ESP, completed the draft CSS in December 2009 and discussed it in a workshop held on January 2010, attended by 60 local participants, and representatives of Bappenas and Cipta Karya MPW. The sanitation strategy proposed received positive support from government and other stakeholders. Results were used for the Ambon Sanitation Profile, which was officially launched during the close-out workshop in February 2010.
- **Pokja Drainage.** ESP, CK-Net and ITS conducted a TOT on City-wide Drainage Management and Development in Surabaya in June 2009, for representatives of Pokja AMPL in Eastern Indonesia. In October 2009 the local government established Pokja Drainase, with the main task to prepare a Drainage Outline Plan for Ambon. The Draft Outline was discussed in January 2010 and received positive support from government and other stakeholders. Pokja is currently developing the final version and details so it can become part of future local government programs.



ESP EASTERN INDONESIA

Decision makers and Pokja Sanitasi of Manado, Ambon and Jayapura made a cross visit to Kabupaten Malang to learn about Community-Based Sanitation Systems.

- **Real Demand Survey (RDS) for Sanitation and Customer Satisfaction Survey.** To analyze the demand in sanitation and the level of customer satisfaction for water services, ESP facilitated a Real Demand Survey in Sanitation and Customer Satisfaction on PDAM services, by Universitas Kristen Indonesia Maluku (UKIM), with 1,300 samples. The results were used as crucial inputs in the CSS Report, Sanitation Profile, and PDAM Corporate Plan.

COMMUNITY / SCHOOL BASED SANITATION

- **Community-based Sanitation.** Bemaco Consultants, under a sub-contract with ESP, prepared the detailed engineering designs of Communal Septic Tanks at Kayu Tiga and Kate-Kate, which Pokja AMPL Ambon then discussed with Cipta Karya to leverage funding support from the central government for construction. As a result, all parties agreed to build three Communal Septic Tanks at Kayu Tiga to serve a total 245 HH, and in Kate-Kate one unit to serve 328 HH. APBN will contribute Rp 2.5 Billion and DAK Dinas PU Ambon Rp 1.5 Billion in FY 2010. ESP has already begun community mobilization for the operation and maintenance of the systems.
- **Community-Based Solid Waste Management.** ESP supported Mercy Corps in community preparation of 3Rs in solid waste management, including sorting, composting and plastic recycling. The activities were carried out in three locations, Dusun Kayu Tiga, Jemaat Kezia at Dusun Seri and Desa Wayame. 150 households, or around 750 people, participated in the sorting and composting training. Over the project period, ESP supported solid waste trainings for 100 cadres in three locations and 150 cadres from MAPALA Pattimura University. In December, 2009, ESP conducted a three-day training in plastic recycling for 45 cadres from PKK, from the 3 locations, MAPALA Pattimura University and 25 cadres from Mercy Corps project locations. The cadres produced bags, flowers and handicrafts made of plastic. Results were presented during the ESP close-out workshop.
- **Health and Hygiene School.** Following up the Global Hand Washing with Soap Campaign at Lapangan Merdeka Ambon in October 2009, ESP supported two schools, SD Kristen A3 Urimesing and SD Inpres 19 Waihaong, with education on Hand Washing with Soap, solid waste management, sanitation, and clean water. As a result of the programs, students have practiced sorting solid waste by making two separate disposal sites for organic and non-organic solid waste, practicing composting process and planting trees to create green environment. The schools agreed to adopt the program in their curriculum as an extracurricular program.
- **STBM Program.** ESP introduced the STBM program, aimed at training the Five Pillars of STBM program to cadres of PKK, Community Environment, Teachers, and Sanitarians from Puskesmas and Pokja AMPL. Twenty two participants attended a five-day training where they learnt communication techniques and advertising skills, including how to make posters or messages for socialization and a Work Plan at the village and school levels. By the end of the training, participants presented their Work Plan, to local government and Pokja AMPL to increase support for STBM.



ESP EASTERN INDONESIA

Hand Washing with Soap campaign for primary schools in Ambon teach students the importance of Health and Hygiene.

6. JAYAPURA FINAL REPORT

Jayapura Municipality, the capital of Papua Province, is situated on the northern coast with a population of 220,000. The PDAM is owned by Jayapura District. When Jayapura Municipality was established, the existing PDAM continued to provide services to about 20,000 customers, 90% of whom were within the administrative boundary of the Municipality. The Municipality's local government expressed interest in establishing its own PDAM, but was unwilling to take over the existing debt of Rp 10 billion. ESP was requested by the PDAM to explore the possibility of developing a joint management system for the PDAM.

Furthermore, water quality was in general acceptable, though there were increasing concerns about reduced water flow from mountain springs, and illegal tapping of PDAM transmission pipes. This reduced water pressure for downstream customers and contributed to Non-Revenue Water figures as high as 60%. The PDAM also requested technical support from ESP for its debt restructuring process.

The current sanitation condition is similar to that of Ambon. For both Kota and Kabupaten Jayapura, UNICEF, with the help of the National AMPL working group, had begun to establish the Jayapura AMPL Working Group. ESP was requested to provide technical assistance to further strengthen both Pokja AMPL and assist both in the development of the CSS and SAP. With regard to the community-based WATSAN systems, ESP to provide technical support to UNICEF and CARE to develop a strong SAP for Jayapura, which included appropriate community and/or school models. ESP also agreed to introduce the STBM approach in target communities for the Water for the Poor program.

ESP long-term staffing in Jayapura included a Regional Coordinator, Sanitation Facilitator, PDAM Specialists, a Community-Based specialist, and four Field Assistants for the raw water protection and Health & Hygiene background.



ESP EASTERN INDONESIA

Women participated in pipe laying at Vietnam village, Jayapura to support Master Meter pipe construction.

Final Achievement of Water and Sanitation Program in Kota Jayapura:

- ✓ 5,383 households now have increased access to clean water;
- ✓ PDAM Jayapura improved their technical and financial performance and signed a joint management agreement;
- ✓ PDAM Jayapura supported the development of a debt restructuring plan;
- ✓ PDAM Jayapura was supported to develop an NRW investment plan;
- ✓ 2 City-wide Sanitation Strategic Plans (CSSPs) were developed;
- ✓ 2 Community-Based Solid Waste Management systems are benefitting 670 people;
- ✓ 2 schools implemented Clean, Green and Hygiene (CGH) concepts;
- ✓ 1,103 people were trained in effective Hand Washing with Soap;
- ✓ 3 collaborative programs were implemented with USAID partners;
- ✓ 2 awareness campaigns were implemented by ESP; and
- ✓ 2,156 participants were involved in ESP trainings and workshops.

DEFINING ACHIEVEMENTS FROM JAYAPURA INCLUDE:

ACCESS TO WATER

- **Water Resources and Watershed Management.** The main activities on water resource protection for Jayapura focused on maintaining the water catchment of Cyclops mountain as the main raw water source for the PDAM. Pilot activities agreed with the PDAM and Local Government included the construction of a demonstration check dam at Kamp Walker and five pilot infiltration wells (sumur resapan), in the upstream catchment of the Entrop basin. The goal was to protect and conserve surface and groundwater flows in PDAM basins as well as to protect materials deposited directly at PDAM intakes.
- **PDAM joint management.** At request of PDAM and both Local governments of Jayapura, ESP facilitated discussion on the critical issue of developing an agreement for a PDAM jointly managed by Kota and Kabupaten Government. The process began with an MoU in July 2009 between mayors of both Kota and Kabupaten for an initial six month period to examine all issues related to the joint management effort. Subsequently, ESP hired local institute USTJ to provide details on the current situation, and compare the various options and bottlenecks for future management. Monthly meetings took place between PDAM, ESP team, USTJ and technical teams from both governments between July and December. ESP also arranged an exposure visit by representatives of both Jayapura local governments, City Councils and from Provincial government to PDAM Intan Banjar, South Kalimantan which experienced a similar case. Because all Papua stakeholders were involved in the entire process, they were very supportive of the process and agreed with the positive results observed in the joint management model.

A formal agreement was signed during the ESP Close-out, on February 11 by both mayors, heads of both Local Parliament and vice-governor. Because this is was first formal joint management agreement for PDAM in Indonesia, DG Cipta Karya, Director Bina Program of Ministry of Public Works, the Deputy head of BPPSPAM and sekUm of PERPAMSI joined this ceremony and expressed their great satisfaction with this process, which they will use as an example for other PDAMs.

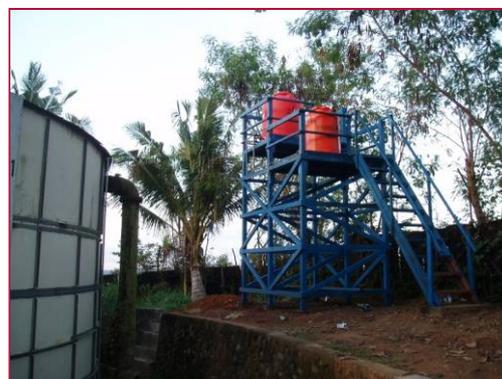


ESP EASTERN INDONESIA
Vice Mayor of Jayapura, Soedjarwo, and Bupati of Jayapura sign the joint decree (peraturan bersama) to merge PDAM Jayapura Kota and Kabupaten on February 11, 2010.

- **Non-Revenue Water (NRW) Reduction Program.** ESP contracted Akademi Tirta Wiyata to support the PDAM to conduct a pilot NRW program in Perumnas area with an initial 734 customers. Due to low pressure at the distribution network, the study focused on a District Meter Area of 196 connections, all without meters. After being metered, average water consumption at billing was 'corrected' from 10 to 23 m³/month, an increase of 13 m³/connection/month, corresponding to increased revenue of Rp 5 million/month (for 200 customers). In addition, 19 leaks were repaired that were found in the DMA studied, saving 3,370 m³/month and providing water to

connect at least 100 new customers. Investments needed to install new meters and to repair leaks could be recovered in less than a year.

- **Master Meter Program.** The PDAM and communities of two locations in Jayapura agreed to operate a Master Meter program by establishing two CBOs in each location. In total, 92 houses in Kampung Vietnam and 50 houses in Kampung Angkasa were connected to the Master Meter schemes (ca. 800 total people). ESP hired a local NGO to support the community mobilization and training and arranged an exposure visit for all Jayapura stakeholders to Medan, where a similar system had successfully been established since 2008. All systems in Jayapura were completed in January 2010. For poor families in Kampung Vietnam, the impact of this system is enormous. They no longer have to buy expensive water in drums (for Rp 50,000/m³), but can get instead access piped water from the PDAM (for Rp 2,200 m³, including O&M cost for the CBO). In Kampung Angkasa, two systems were established for 31 households of Biak origin and 19 households of Wamena community. Prior to this system, residents were illegally taking water from one of the PDAMs main transmission pipes, which caused great disruption for downstream users. Both systems were formally opened during the ESP Close-out event, in the presence of the vice-Mayor of Jayapura, representatives of USAID, the Dutch embassy, Central Government and ESP Jakarta.
- **PDAM billing and accounting.** ESP, in collaboration with the Provincial PERPAMSI office in Jayapura, conducted a training to improve the old computerized billing system of PDAM Jayapura and to add a module that integrates it with the accounting system, using software developed by BPKP. A trial run was conducted during the training period and the results revealed no problems. The PDAM transferred all data to the new integrated system in January 2010 and the new system will become operational in February 2010.
- **PDAM public image improvement.** The training to improve the PDAM's public image and customer relations, similar to Ambon, was also implemented in Jayapura. Trainings were conducted in October, attended by 15 participants. During the training, PDAM Jayapura staff conducted a press conference which was attended by 30 journalists from local and national TV, radio and newspapers.
- **PDAM debt restructuring.** ESP supported PDAM Jayapura to prepare a Business Plan, increase tariffs (implemented in April 2009) and other documents required for the debt restructuring process. The proposed debt restructuring plan was submitted by PDAM management to the Ministry of Finance and was approved in March 2009. The total amount of debt restructured was Rp 34 billion.
- **Water Quality Monitoring.** The water quality and quantity monitoring program was developed to predict the outcomes of the above applied technologies at Kamp Walker and Entrop. Both areas are included in the Water Resources Management Field School (WRM-FS) for Raw Water Protection, conducted for 3-4 months, beginning October 2009. ESP also supported the PDAM with the installation of a chlorine dosing system for their largest reservoir. The PDAM is committed to constructing similar systems for their other reservoirs.



ESP EASTERN INDONESIA

Chlorine dosage system at Skyline Reservoir, Jayapura.

URBAN SANITATION

- **City-wide Sanitation Strategy and Sanitation Action Plan.** ESP, in collaboration with National Pokja AMPL and UNICEF, worked from February 2009 to support Kota Jayapura local government to strengthen the capacity of Pokja AMPL Kota Jayapura and to provide the Pokja with the capacity to prepare a CSS and SAP. The CSS was discussed at a workshop in January 2010, and received positive support from government and other stakeholders. Similarly, following capacity strengthening, Pokja Sanitasi Kabupaten Jayapura prepared their CSS and SAP. This was also discussed in a workshop in January 2010 and agreed by all stakeholders as a basis for future development of the sanitation sector in Kabupaten Jayapura.
- **Urban Drainage assessment.** This assessment was also completed by CK-Net in Jayapura. Local Government agreed to hire a local consultant to prepare a drainage Master Plan and ESP / CK-Net provided additional professional input (a technical paper) in the inception phase as well as highlighted requirements for non-technical, institutional measures in a Master Plan.

COMMUNITY / SCHOOL BASED SANITATION

- **Clean, Green, and Hygiene (CGH) School Program.** Understanding the critical role of schools as agents of change, ESP introduced a school-based environmental education program. The goal was to promote awareness among school students regarding the importance of water and sanitation as well as resource management and the linkage between health and clean water. Activities have been implemented from July to September 2009, engaging 20 teachers and 40 students in various training and capacity building initiatives such as Fecal-Oral Transmission, practicing HWWS at the 5 critical times, household water treatment, and hygiene behavior change. Children were also introduced to waste separation, recycling, reuse and composting, and re-greening and tree planting at school. The CGH School concept was implemented in two primary schools in the City of Jayapura: SD YPK Eben Haezer Argapura and SD Inpres Angkasa. At the end of the program, ESP had developed the core APPEL team (Papua Children Care for Environment) to promote and implemented the CGH concept at both schools.

7. CONCLUSION

7.1. SUCCESS FACTORS

The ESP East Indonesia program concluded with remarkable success, especially considering the 15 month contract period consisted of a mere one year of field implementation (Jan 2009 – Jan 2010). The underlying reasons for this success can be contributed to the following factors:

- **Integration existing ESP experience.** Each Eastern Indonesia office staffed at least one Technical Specialist with direct ESP experience from other Provinces. This was further aided by extensive back-up support from the ESP Jakarta team (both technical and administratively), especially during the first six months of the program. ESP drew extensively on previous experiences with other regions during the development of programming in Eastern Indonesia, including Micro-Credit, Master Meter, Non-Revenue Water reduction, Energy efficiency, City-wide Sanitation and Community-Based Sanitation and Solid Waste Management.
- **Flexible, demand driven approach.** Although all parties agreed on a Work Plan at the start of the program, the ESP/USAID approach allowed for substantial flexibility, especially for new requests and initiatives which were not part of the original Work Plan, but which were considered to directly contribute to the agreed targets and outcomes. Best examples are the TA for the first Centralized Sewerage in Manado, introduction of Micro-Credit in Ambon, PDAM debt restructuring in Ambon and the City-wide Sanitation Strategy and Action Plan for Kabupaten Jayapura (initially the Work Plan only included Kota Jayapura). The inclusion of these new activities contributed greatly to the building of trust between all parties and was crucial to obtaining Central Government support.
- **Combined Approach.** The ESP program always operated on two levels, engaging directly with Central, Local Government / PDAM for institutional & planning issues, and at same time working directly with local communities and school to develop and demonstrate practical solutions to increase access to safe water, improved sanitation and /or solid waste management. These practical field results were used as input and catalyst for the planning and budgeting process with Local Government and PDAMs.

7.2. LESSONS LEARNED

Over the course of the program, the ESP project has documented an abundance of experience on best practices and lessons learned. The following is a brief summarization with specific pertinence for Eastern Indonesia:

- **It is crucial to involve Central Government from the start of the program.** Involvement may include the facilitating of senior Local government officials to participate in national programs or events (National Sanitation Summits or STBM policy, for example) and to encourage National government officials to visit the cities and allocate their budgets (for example for centralized sewerage in Manado, Ambon or

PDAM support) to motivate and encourage local government to show commitment, develop concrete environmental strategies and action plans, and provide co-financing.

- **It is important with all stakeholders to agree on the best TA activities**, especially provided to PDAM, local governments and communities. The key is to not accept all requests without question. The goal is instead to provide information necessary to facilitate informed decision making. In addition, selected programs should, as much as possible, have a direct relation with and positive impact to program targets. In special situations, is it possible to support other programs which do not directly impact program targets, but are necessary for building trust and/or increasing relations between all participating parties, a crucial component for future commitment to expand services.
- **The duration of field activities, especially for the installation of community-based water and sanitation systems, often requires more time than initially planned**, resulting in tight budgeting, insufficient monitoring and significant pressure on project staff. The main reason for these challenges and delays are difficult to predict beforehand. They may consist of agreements on land allocation (government, community or private) and/or counterpart contributions by local government. The best way to accommodate these uncertainties in future Work Plans is to allow for a longer program period, combined with (1) alternative parallel worksites, so that if one site experiences delays, other(s) might still continue (2) flexible designs to accommodate various land possibilities, (3) excellent local facilitators and/or negotiators who can easily built trust with local stakeholders both in the community and with local government, and (4) strong relations with champions within the community and local government who can help push issues on land allocation and/or counterpart financing.
- **Exchange visits by communities, NGOs, local and central government are a very strong motivation and marketing tool**. The principle of 'seeing is believing' is very important in Indonesia, not only to communicate impact when parties work together, but also to discuss issues amongst peers, not just with government or consultants. What has also been very successful is to work with experienced cadres from existing community-based / STBM programs as trainers for new locations. The new community will be much more enthusiastic about initiating and owning their own programs.



ANTONIUS TARMAN/ESP JAYAPURA

Community representatives from Jayapura partake in a field observation & discussion with local NGOs JKM in Kelurahan Bagan Deli regarding the Master Meter in Medan.

- **The integrated approach (as a Field School model) works very well for urban areas**. For example, using a mini-PHAST, key issues within the community can be identified quickly, which are then supported by an Action Plan and concrete programs to deliver concrete results (like CBS, MCK, water supply). Through this achievement, the team gains trust from the community and they will become more open and actively engaged on other environmental topics, like HWWS and hygiene behavior change. In addition, all local institutions (schools, clinics, mosques) should be included in the various activities and events, to the extent possible. In this way, the community will receive reinforcing messages from different directions

7.3. RECOMMENDATIONS / FOLLOW-UP

Considering the short implementation period, it is important to maintain and further increase the momentum of increased commitment by Local Government and both PDAMS (Ambon and Jayapura) to further improve performance and coverage. Several recommendations to assist this effort include:

- **Continue support of Pokja-Sanitation.** Although all four Pokja-Sans have shown great commitment in developing their CSS and Action Plans, they still require support to maintain commitment and proceed through to implementation. With continuous staff changes within the Government, the Pokja's are still fragile and susceptible to fragmentation. For Ambon and Jayapura, UNICEF (with Mercy Corps and CARE) is continuing efforts, while IUWASH (the new WATSAN-focused USAID program) and USDP (the new program financed by the Dutch Government) will be further requested to provide support.
- **Continuous support to PDAMs.** Both PDAMs demonstrated full commitment toward implementing ESP initiated programs including Non-Revenue Water reduction, billing & accounting, Water for the Poor models (Master Meter and Micro-Credit), and public relations. To sustain and further expand this momentum, PDAM staff could benefit greatly from additional support. Support does not need to be as intensive as the support from ESP, but can focus more on further capacity building and skills development, facilitating relations with Local and Central Government for additional financial support to expand pilots, increasing raw water sources, expanding services and increasing transparency of PDAM operation for both owners and customers. Programs like IUWASH or twinning programs with other water utilities (regional, international) will offer significant support.
- **Replicating successful models.** Continuous technical support should focus as much as possible on replicating successful models developed under the ESP program, both within each city and also between cities. Financing for this can be obtained from a combination of Local government (APBD) and Central Government (APBN) budgets. The best examples for replication are:
 - Improved MCK++ in two locations in Manado
 - Small-Scale Sewerage systems in two location in Ambon
 - Communal septic tanks under STBM for one location in Manado
 - Centralized Sewerage for Boulevard Area in Manado
 - Micro-Credit systems with Bank BRI, PT Air Manado and PDAM Ambon
 - Master Meter systems with PDAM Jayapura
 - PDAM joined management system for Kota and Kabupaten Jayapura
 - Non-Revenue Water reduction pilots with PDAMs Ambon and Jayapura
 - PDAM public and media relation programs with PDAM Ambon and Jayapura
 - Infiltration wells, biopori and check dams in Ambon and Jayapura
 - Clean, Green Hygiene concepts included in primary schools curriculums in all three locations
 - Community Based Solid Waste Management, including composting and plastic recycling in all three locations

8. PROJECT MONITORING & EVALUATION

8.1. INTRODUCTION

This section presents charts tracking the progress to date against ESP's indicators as defined in ESP's *Performance Monitoring Plan (PMP)*.

The following pages describe the *Major Outcomes, Indicators, Target Over the Life of the Project*, and finally total cumulative *Final Achievement* to date for each PMP Outcome.

The PMP outcomes described in this section follow the revised Outcomes stated in the latest PMP (Third Edition) that accommodated contract modification #13 and #14. The adjustments made in this PMP include additional targets for several existing outcomes in response to the six month program extension and expansion into three cities in Eastern Indonesia.

The final achievements of program implementation include:

- ✓ 2 new community groups were formed and are practicing improved water resource protection Plans;
- ✓ 2 water resource protection plans were developed;
- ✓ 2 Master Agreements for Micro-Credit were signed by PDAM and local banks and 144 households now have access to clean water. From these new connections, ESP leveraged an estimated \$14,400;
- ✓ 5,819 households now have increased access to clean water, or 25,610 people;
- ✓ 2 PDAMs in Kota Ambon and Kabupaten Jayapura improved their technical, financial and institutional performance;
- ✓ 2 PDAMs were supported to develop debt restructuring plans;
- ✓ 2 PDAMs were supported to develop plans to access commercial financing;
- ✓ 4 City-wide Sanitation Strategic Plans (CSSPs) were developed in Kota Manado, Kota Ambon, Kabupaten Jayapura and Kota Jayapura;
- ✓ 7 Community-Based Solid Waste Management systems were developed, benefitting 3,405 people;
- ✓ Small-Scale Sanitation systems were developed, benefitting 4,805 people;
- ✓ 5 schools implemented Clean, Green and Hygiene (CGH) concepts;
- ✓ 4,113 people were trained in effective Hand Washing with Soap;
- ✓ 6 collaborative programs were implemented with USAID partners;
- ✓ 6 awareness campaigns were implemented by ESP; and
- ✓ 7,392 participants took part in ESP trainings and workshops, 30.98% of whom were women.

8.2. ESP FINAL ACHIEVEMENT OF WATER AND SANITATION PROGRAM IN EASTERN INDONESIA

PMP Outcome	Indicator	Target Over life of Project	Final Achievement	Remarks
Outcome #0.a. – Two Program Collaboration to support the Strategic Objective (SO) of Basic Human Service	Number integrated program activities between ESP and other USAID Programs	2	6 (300%)	The collaborative program in Eastern Indonesia is not only with USAID's partners but also with other partners including UNICEF, CKNET,
Outcome #0.b. – At least 3 Public Outreach and Communication campaigns with materials are developed and implemented	a) Number of campaign activities supported by ESP	a) 3	6 (200%)	The campaign activities were conducted in three cities to promote better services of water utilities and improved hygiene behavior through hand washing with soap.
	b) Number of campaign materials developed	b) 3	6 (200%)	
Outcome #0.c. – At least 500 people actively participate in ESP trainings and workshops	Number of people that participate in ESP trainings and workshops	500	7,392 people (1,478.40%) (average women participation: 30.98%) \$114,049.79 to spend for training activities	Activities included under the training consist of training courses for PDAM, PEMDA and community groups, workshops, TOTs, study tour, FGDs, and field schools.
WS Outcome 1.f. – At least 4 community groups will support and implement activities to improve natural resources management	Number of community groups implementing activities to improve natural resource management	4	4 (100%)	This figure indicates new community groups supported the program of water resource protection zone: 2 in Ambon and two in Jayapura.
WS Outcome 1.g. – At least 2 water resource protection plans for improved water resources management and improved seasonal stability	Number of Water Resource Protection Plans with Zonation Systems designed and under implementation	2	2 (100%)	Both these water resource protection plans were developed in Kota Ambon, and have been recognized by local government for implementation.
SD Outcome #2.a. – At least 2 PDAMs demonstrates 20% progress on a PDAM performance monitoring index reflects technical, financial, managerial performance.	Number of PDAMs providing better services, indicated by the increasing of 20% of PDAM performance index	2 PDAM	2 (100%)	<ul style="list-style-type: none"> The two PDAMs are Ambon and Jayapura. The average % increase of PDAM Performance Index (PI) this year is 30%, based on the sum off all PDAMs' PI.
		20% PI	30% (150%)	
SD Outcome #2.b. – Population with access to clean water is increased by 3,300 households in ESP geographic areas.	Number of households that benefit from an improved water source	3,300 HH	5,819 HH (132.4% of target)	<ul style="list-style-type: none"> The figure under FY 2010 is calculated based on the baseline figure in FY 09. A total of 5,819 people increased access to clean water.

PMP Outcome	Indicator	Target Over life of Project	Final Achievement	Remarks
SD Outcome #2.c. – At least 3 city sanitation strategies with action plans are developed in conjunction with local governments as catalyst for funding.	Number of sanitation strategies with action plans developed and ready to be submitted for funding by Government, donor and/or other financing possibilities	3	4 (133%)	<ul style="list-style-type: none"> The CSSPs were developed for Kota Manado, Kota Ambon, kota and Kabupaten Jayapura. The plans have been accepted by Local and Central Government for the implementation.
SD Outcome #2.d. – At least 2 community-based solid waste management plans are developed and implemented benefiting at least 300 people	a) Number of community-based solid waste systems developed and implemented	a) 2	a) 7 (350%)	<ul style="list-style-type: none"> The CBSWM systems developed were established in Kota Manado (3), Kota Ambon (2) and Kota Jayapura (2). Some of them are also the pilot sites for development of STBM concept.
	b) Number of people benefiting from the community based solid waste systems developed	b) 300	b) 3,405 (1135%)	
SD Outcome #2.e. – At least 2 community-based small scale sanitation plans are developed and implemented benefiting at least 300 people.	a) Number of small scale sanitation systems (SSSS) developed and implemented	a) 2	a) 5 (250%)	<ul style="list-style-type: none"> The SSS systems developed were established in Kota Manado (3) and Kota Ambon (2). Some of them are also the pilot sites for development of STBM concept.
	b) Number of people benefiting from small scale sanitation system	b) 300	b) 4,805 (1,601.67%)	
SD Outcome #2.f. – The precursors needed to impact childhood diarrhea (clean water, sanitation, and behavior change) are contributed to the BHS effort to reduce in the incidence of childhood diarrhea and mortality.	a) Number of school that adopted CGH concept	a) 2	a) 5 (250%)	<ul style="list-style-type: none"> The people trained through several activities on promotion of improved hygiene behavior at community and school levels. Detailed information is attached in Appendix F-11 a and b.
	b) Number of people trained in effective hand washing with soap	b) 2,500	b) 4,113 (164.52%)	
FN Outcome #3.a. – At least one PDAM with debts is assisted in the preparation and submission of proposals to restructure outstanding debt.	The number of PDAMs in default of SLA and RDA debts and assisted in the preparation and submission of proposals to restructure outstanding debt	1	2 (200%)	<ul style="list-style-type: none"> ESP supported PDAM Jayapura and Ambon with debt restructuring plans. The plan of Jayapura has been approved by the Ministry of Finance (MoF) while the plan of Ambon is still under review by MoF.
FN Outcome #3.c. – At least 2 PDAMs or local governments are assisted in the development of financing.	Number of financing plans developed in cooperation with PDAMs or local governments	2	2 (100%)	<ul style="list-style-type: none"> ESP supported the development of financing plan for PDAM Ambon and Jayapura for Non Revenue Water project. The development of the investment plan is in the PDAM business plan.

PMP Outcome	Indicator	Target Over life of Project	Final Achievement	Remarks
FN Outcome #3.e. – At least 1 micro-credit program is established with PDAMs and local banks, resulting in the connection of at least 1,000 low-income families to the water supply network.	a) Number Master Agreements signed by PDAM and local bank	a) 1	a) 2 (200%)	<ul style="list-style-type: none"> Two Master Agreements were signed by PT Air Manado and PDAM Ambon and BRI bank followed by internal training for PDAM and local bank staff and promotion campaign to potential customers. New connections under microcredit in Manado were limited due to capacity of PTAM to provide new connections; ESP then started new program in Ambon with potential of at least additional 500 households.
	b) The number of new household connections as a result of micro-credit programs	b) 1,000	b) 144 (14.40%)	

ENVIRONMENTAL SERVICES PROGRAM

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