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IBRAHIM PANJI INDRA FOR USAID-SECO PARTNERSHIP

USAID INDONESIA URBAN WATER, SANITATION AND HYGIENE
PENYEHATAN LINGKUNGAN UNTUK SEMUA (IUWASH PLUS)

QUARTERLY PROGRESS REPORT 22

OCTOBER–DECEMBER 2021

CONTRACT NO. AID-497-TO-16-00003

DECEMBER 2021

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COVER STORY

SECO Visits Partner PDAMs and Akatirta in Karawang District and Magelang City

In November 2021, the Swiss State Secretariat for Economic Affairs (SECO) visited Karawang District and Magelang City, two out of seven regions assisted under the USAID-SECO Partnership Program. The visits aimed at learning firsthand how the USAID-SECO Partnership Program is affecting Perumda Air Minum Karawang, Perumda Air Minum Kota Magelang, and Akademi Teknik Tirta Wiyata (Akatirta).

Representing SECO in both visits were the Deputy Head of Economic Cooperation and Development of SECO Indonesia, Ms. Andrea Zbinden, and the National Program Officer, Mr. Banu Sjadzali. USAID IUWASH PLUS COP, Mr. William J. Parente, and DCOP, Ms. Alifah Lestari, accompanied SECO during the trip in Karawang, while Mr. Foort Bustraan, Institutional Advisor of the USAID-SECO Partnership, joined in the Magelang visit.



SECO, USAID-SECO Partnership, and PERUMDAM Tirta Tarum Karawang representatives met with the Regent and the Regional Secretary of Karawang on November 11, 2021, to report NRW and EE progress in Karawang District prior to a field visit.

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The visit to Karawang took place on November 11, 2021, and began with a meeting with the Karawang Regent, Ms. Cellica Nurrachadiana; the Regional Secretary, Mr. Acep Jamhuri; and the Director of Perumda Air Minum Karawang, Mr. M. Sholeh. The visit then continued to a nearby Water Treatment Plant, where the USAID-SECO Partnership had provided a water pump with capacity of 300 liters per second, a variable speed drive, and a control panel. As part of cost-sharing, the Perumda provided one additional water pump and covered all installation costs.

The Director of Perumda Karawang explained that assistance from the USAID-SECO Partnership had helped the Perumda to reduce Non-Revenue Water by 8% and improve Energy Efficiency by 32% as of September 2021. The Perumda also estimated that they can save IDR 333 million per year from the NRW reduction and IDR 192 million in monthly electricity bills from the EE improvement. The Karawang Regent expressed appreciation for these achievements and hoped that the NRW, EE, and capacity-building initiatives continue beyond the Partnership's lifetime.

On November 24, SECO visited Perumda Air Minum Kota Magelang and Akatirta, a technical academy. At the Perumda, SECO met with the President Director, M. Haryo Nugroho, and their staff to discuss the achievement to date and the Perumda's plan to install a new water pump (75 liters per second) for increasing Energy Efficiency and the ongoing Capacity Building and NRW activities, including leak detection and identification of water consumption anomalies. The new pump, provided by the USAID-SECO Partnership, was later installed at Kanoman Spring on December 8, 2021, with costsharing by Perumda (which covered the foundation and accessories).

At Akatirta, SECO met with the Director, Mr. Suparto Edisucahyo, and his team to discuss plans to expand the current academy to a polytechnic. The USAID-SECO Partnership is supporting this process with a roadmap (2022 - 2035), which will be completed by January 2022.

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ACRONYMS

Akatirta	Akademi Tirta Wiyata/Tirta Wiyata Environmental Engineering Academy
B2B	Business-to-Business
BPPSPAM	<i>Badan Peningkatan Penyelenggaraan Sistem Penyediaan Air Minum/Agency for Improving the Implementation of Water Supply System</i>
BTAM	<i>Balai Teknologi Air Minum/Agency for Water Technology</i>
CB	Capacity Building
CJRO	Central Java Regional Office
COE	Center of Excellence
COP	Chief of Party
CPMU	Central Project Management Unit
DAI	Development Alternatives, Inc
DCOP	Deputy Chief of Party
DED	Detailed Engineering Design
DRD	<i>Data Rekening yang Ditagihkan/Billable Account Data</i>
EE	Energy Efficiency
FGD	Focus Group Discussion
FS	Feasibility Study
GIS	Geographical Information System
GOI	Government of Indonesia
IUWASH PLUS	Indonesia Urban Water Sanitation and Hygiene <i>Penyehatan Lingkungan untuk Semua</i>
KBV	<i>Konsultan Baseline dan Verifikasi/Consultant for Baseline and Verification</i>
LTTA	Long Term Technical Assistance
MPWH	Ministry of Public Works and Housing
NRW	Non-Revenue Water
NUWSP	National Urban Water Supply Project
OSH	Open Source Hardware
PATEN	PT PALYJA Tirta Edukasi Indonesia
PBG/AMBK	Performance Based Grant <i>/Hibah Air Minum Berbasis Kinerja</i>
PDAM/ Perumda/ Perumdam	<i>Perusahaan Daerah Air Minum/Municipal Drinking Water Company</i>
Pemda	<i>Pemerintah Daerah/Local Government</i>
PERPAMSI	<i>Persatuan Perusahaan Air Minum Seluruh Indonesia/Association of Indonesian Water Supply Companies</i>
PIAP	Performance Improvement Action Plan
PUPR	<i>Pekerjaan Umum dan Perumahan Rakyat/Public Works and Housing</i>
PUSDATIN	<i>Pusat Data dan Teknologi Informasi/Data and Information Technology Center</i>
PY 4, 5	Project Year 4, 5
QPR	Quarterly Progress Report
SEC	Specific Energy Consumption

SECO	State Secretariat of Economic Affairs
SKKNI	<i>Standar Kompetensi Kerja Nasional Indonesia/Indonesian National Work Competency Standard</i>
SOP	Standard Operating Procedures
SPAM	<i>Sistem Penyediaan Air Minum/Water Supply System</i>
SPPH	<i>Surat Penetapan Pemberian Hibah/A Letter of Confirmation for Endowment</i>
STTA	Short Term Technical Assistance
USAID	U.S. Agency for International Development
WJDT	West Java, DKI Jakarta, and Tangerang
YPTD	Yayasan Pendidikan Tirta Dharma/Tirta Dharma Education Foundation

I INTRODUCTION

This is the twenty-second Quarterly Progress Report (QPR) of the USAID Indonesia Urban Water, Sanitation and Hygiene, *Penyehatan Lingkungan untuk Semua* (IUWASH PLUS) program. It covers the period of October 01 through December 31, 2021. Due to approaching the final period of the project, USAID IUWASH PLUS only provides a detailed review of USAID-SECO Partnership Program activities, issues, constraints, and progress toward targeted outcomes and results registered during the quarter.

The report starts with a summary of the Program Management section, followed by the three operational components, and closing with a list of final activities for mid-December – late January 2022, the last operational month of the USAID-SECO partnership. As the traveling and meetings were only slightly affected by COVID-19 restriction, achievements include accompanying SECO team to several field locations, finalizing the PBG baseline discussion with CPMU and subsequently introducing this in the field, the continuation of field activities with all PDAMs on all aspects of NRW reduction (commercial, physical, production and pressure management), installation of new Energy Efficiency Equipment, taking monthly measurements on NRW and EE, PDAM staff training and implementing next steps of the National PDAM capacity building roadmap, including finalization of the Occupancy map, FGDs, preparing competence based training modules, etc. Detailed updates on the impact of COVID-19 pandemic, effect of the delayed start of PBG, lessons learned, and a detailed analysis of all program outcomes will be discussed in-depth in the upcoming Final report, scheduled to be submitted around 21st of January 2022.

2 PROGRAM MANAGEMENT

Following the start in March 2019, the USAID-SECO team conducted several program management activities, described in each QPR with update for this quarter summarized below:

NRW and EE measuring equipment: All measuring equipment, purchased at the start of the program, is continuously used for the Monthly Monitoring. The selection of a dedicated project partner for final handing-over was completed after comparing possible partners, as explained in previous reports and monthly USAID-SECO meetings. The conclusion is that YPTD (training institute under PERPAMSI) is the most suitable to become the future owner of the equipment. During meetings with them in this quarter they assured their full commitment to allocate sufficient budgets for the necessary insurance, maintenance and repair (when needed) and also to setup up the system how all PDAMs can utilize the equipment, either through the PDAM Training Centers or directly. If requested, they can also provide a regular report to PERPAMSI, USAID and SECO. The formal handing over from SECO to YPTD is suggested with the program close-out in January 2022.

Staffing: From the program commencement, changes in staff were shared in each QPR and the monthly USAID-SECO meetings. The staffing status by end of this quarter has not changed from the previous (annual) report and can be summarized as follows:

- 31 LTTA positions are filled for National office (9), West Java (10) and Central Java (12)
- 11 STTA (Short Term Technical Assistance) supporting various programs.

- 16 Individual Consultants, supporting mostly the Physical Leak Detection & DMA (6) and various activities following CB roadmap recommendation (6).

Leveraging: As explained in the previous (annual) report, the combined disbursed and committed cost-sharing by 7 PDAM and Local Governments between 2019 – 2021 already reached US\$ 5,95 million, exceeding the contract target of US\$ 2,5 million by 230%. Leverage for NRW is substantially higher because NRW was conducted in all 7 locations from the start of the program in a much larger area, compared to the EE program in 5 locations and only for specific pumping systems. Also, the leveraging for NRW reduction included procurement of bulk meters and loggers, water meters, conducting pipe repairs, replacing faulty water meters, installing software for improved meter reading, and GIS etc. Leveraging for EE focused mostly on additional pumps, panels and supporting the construction. A full list of all leveraging will be provided in the final report, including details of each type of leverage and status by end of Dec 2021.

Partnerships/Meetings: During this quarter, the interaction between SECO and MPWH/CPMU regarding the PBG program preparation continued as shown in the Exhibit below:

Exhibit I. Update meetings for PBG program	
Date	Topic & conclusions
Nov 16-17	Workshop with CPMU Water Hibah, CPMU NUWSP, World Bank and KBV (Consultant base line & verification) to discuss the preparation of base line implementation
Nov 23	Socializing Baseline implementation at PDAM Kab Sukoharjo (with KBV, WB and CPMU)
Nov 24	Socializing Baseline implementation at PDAM Kota Magelang (with KBV, WB and CPMU)
Nov 29	Socializing Baseline implementation at PDAM Kab Bogor (with KBV, WB and CPMU)

In this quarter the SECO team joined a 2-day workshop with the newly appointed PBG consultant, who will conduct the PBG baseline and the PBG monitoring. As they are new to the PBG concept (baseline, monitoring), the SECO team had to explain the whole process, to make sure they later make the correct measurements. After this, the 3 SPPH-1 locations (Kab Bogor, Kab Sukoharjo and Kota Magelang) were visited by PBG consultant, CPMU and WB for the formal PBG socialization. The SPPH-2 locations (PDAMs Depok and Karawang) are still awaiting the administrative approval. Surakarta and Kab Magelang will join in SPPH 3. It is planned that the PBG baseline measurements for the 3 SPPH-1 locations, will be conducting during December 2021.

During this quarter the World bank also discussed with Gol on PBG extension until September 2024; they prepared a PBG extension plan to be submitted for approval to Gol in January 2022.

Collaboration with IUWASH PLUS teams: The SECO team is implementing field activities in close collaboration with the regular USAID IUWASH PLUS program, both at national and regional level. This collaboration includes support by IUWASH PLUS regional teams for coordination with CPMU on PBG program, development of PDAM Business Plans and staff training. At the National level, the IUWASH PLUS finance team supported the development of various financing and B2B modules under the SECO Capacity Building program and the National GIS team is supporting the development of the Web-based GIS and training portal.

The exhibit below summarizes main partnerships and involvement of each of them in this period.

Exhibit 2. Main Partnerships for SECO-USAID co-funding program		
Partner	Involvement	Progress this quarter
SECO (Swiss State Secretariat for Economic Affairs)	Main financing agency; Regular Progress monitoring and technical advice	- Regular communication by email - Monthly Progress Meetings (Zoom) - join meeting/FGD with CPMU - visiting PDAM Karawang, PDAM Magelang and Akatirta (all in Nov' 2021)
Ministry of Public Works & Housing (PUPR) & CPMUs NUWSP and Water Hibah	Coordinate strong support and commitment of NUWSP	- Regular (online) meetings to discuss PBG progress, Q & A, PBG socialization with CPMU consultant in West- and Central Java (Nov '21)
BTAM (Technical Training Centre), PERPAMSI, AKATIRTA, YPTD, etc.	Coordination and support for PDAM CB & Training Centers	Regular discussions to implement new National capacity building road map
3 PDAM/PEMDA in West-Java 4 PDAM/PEMDA in Central-Java	Main participants / beneficiaries; Implement agreed action plans	All PDAMs participated closely in surveys, online training and NRW, EE monitoring

3 COMPONENT A: NON-REVENUE WATER REDUCTION

Non-Revenue-Water (NRW) is water lost due to “commercial” as well as “technical” reasons. In Indonesia, the official estimated NRW rates are around 33%, but because of the high inaccuracy of the metering and recording system, the real NRW value for many PDAMs is often over 40%. As a result, water quantity is severely reduced, water quality is degraded, water pressure is inconsistent, utility revenue is substantially lowered, and customer confidence in PDAM is eroded. To address these challenges, the SECO team supports 7 PDAMs to implement NRW reduction activities.

In the previous (annual) report a preliminary assessment was made on the main challenges in the NRW program, including the determining of the NRW baselines, the (severe) impact of travel restrictions in 2020-2021 due to the Covid-19 pandemic, the fluctuations in NRW data and the changes made in the NRW reduction approach to incorporate these challenges within the previously agreed program. During this period all these issues were further discussed both internally and also with partners in the field and at National level. The results of this will be included in the Final report, which will be submitted to USAID and SECO by middle of January 2022. This QPR will therefore focus only on the main activities in this period and the preliminary NRW data from the 7 PDAM/PERUMDA for period October – November 2021.

NRW progress monitoring:

After the NRW Baseline was determined (early 2021), as described in earlier reports, the USAID-SECO team together with each PDAM/PERUMDA conducted regular (monthly) monitoring through a standard form filled in by each PDAM and checked by SECO field staff. The verification has improved since the previous report, but still issues have emerged with the production management control (PDAM Depok), and some PDAMs with multiple production sources still lack equipment (variable speed drives) to control all pumps and balance supply with demand. On the downstream side, there were some disturbances within some pipe network, due to need for rehabilitation (Sukoharjo, Magelang), pressure balancing within the network (Sukoharjo), and introduction of new meter reading systems (Karawang). This resulted in some fluctuations in the actual NRW for the period of September – October, but most of these were resolved in the preliminary data for

November, which is included in the Exhibit 3 below. These latest figures (from November 2021) show a decrease of the NRW in 5 PDAMs, but also still a (slight) increase for 2 other PDAMs with an overall reduction of 1.9 % compared to the NRW Baseline (Dec'20).

The last column in this Exhibit, provides an updated (rough) indication of the expected NRW reduction figures by end of the project, when all NRW reduction measures are applied successfully.

Exhibit 3. NRW monitoring results (August 2021)					
	PDAM	Baseline	Results August 21	Difference with Baseline	Expected by End of Project
1	Kab Bogor	43.1 %	41.6 %	- 1.5 %	- 2.5 %
2	Kota Depok	34.3 %	37.1 %	2.8 %	- 0.5 %
3	Kab Karawang	35.1 %	28.0 %	- 7.1 %	- 8 %
4	Kota Surakarta	44.4 %	40.0 %	- 4.0 %	- 4.5 %
5	Kab Sukoharjo	36.9 %	37.3 %	0.4 %	- 1 %
6	Kota Magelang	59.7 %	59.3 %	- 0.4 %	- 1.5 %
7	Kabupaten Magelang	34.4 %	31.8 %	- 2.6 %	- 3 %
	Average	41.2 %	39.3%	- 1.9 %	- 3 %

NRW field activities for Commercial NRW reduction.



Photo caption: A staff of Perumda Air Minum Kabupaten Sukoharjo replacing a water meter

From October to December 2021, Perumda Air Minum Kabupaten Sukoharjo replaced about 900 customers' water meters in three areas, i.e, Kartasura, Gentan and Grogol. The USAID-SECO Partnership assisted the Perumda in analyzing water meter anomalies and determining priority areas for water meter replacements. This initiative increased the average water sales in the three areas from about IDR70,000/m³ in September 2021 to around IDR80,000/m³ in November 2021.

Photo credit: M. Adib/USAID-SECO Partnership

Preliminary results of the previously conducted surveys identified around 2,000 locations with suspected illegal connection or illegal water consumption, from which 450 with strong indication of misuse. PDAMs started with detailed investigation and by middle of December found that 50% of these are not actually illegal, but only have fluctuating consumption pattern; 20% agreed to be reconnected as new customer, 15% was (physically) disconnected and 15% is still under investigation.

Also, over the last 2 years, PDAMs replaced around 12,000 water meters, initially following a standard approach by only selecting meters based on meter age, but since the survey's supported by SECO, the focus of their meter replacement program has shifted to replacing meters with anomalies and/or very low consumption first. To further support this, PDAMs agreed to continue the surveys, but at a smaller scale, after which can be more quickly followed up by the distribution teams.

From the 460 smart meters procured and installed in 6 PDAMs, around 300 are currently

installed. The first experience from the field has shown some problems with the smaller (1/2") meters, particularly with the SIM-cards (especially the connections and monthly cost). Also several new meters did not work properly from the start and after these were send back to the vendor, who responded in early December agreeing to check this and do the required follow-up The Final results and lessons learned of the use of smart meters for PDAMs will be covered in the final report.

Software installation for bulk water meters:

From the start of the program all PDAMs agreed that the installed new bulk water meters and loggers will be connected to a server at the MPWH office in Jakarta, to demonstrate transparency in measuring water flows through the system. Unfortunately, until now the final connecting of the data from the bulk meters /loggers to the MPWH/ PUSDATIN server is still not completed, because according to the latest information obtained in this quarter from MPWH, for the time being it is not possible to be connected to the PUSDATIN server, because it is fully used for the PBG World Bank data collecting and storage and first requires expansion before new data can be stored.

This means that the earlier developed alternative data transmission route whereby data is sent directly from the bulk meter/logger to PDAM server will be continued.

Measuring Physical Losses

By early December, the teams had located over 70 larger leaks in 7 PDAMs and together with PDAM staff closed over 45 leaks to recover around 42 l/sec. The remainder will be follow-up by PDAM, including further discussions with Roads Department (PUPR/Bina Marga) to obtain permission to dig under larger provincial and/or national roads. The specialist teams continued on-the-job training of PDAM on correct procedures to properly identify and close leaks in other parts of the network. This is especially important, because PDAM staff usually focus on closing smaller leaks for the pipes with the smaller diameters in the distribution network. All 7 PDAMs combined make around 400 small pipe repairs per month and after joining the USAID-SECO trainings, they now know how to do this in a more proper way. Final results of the Physical Loss program, including the approach and lessons learned will be discussed in the final report.

Production Management

After a slow start to convince PDAM management of the importance to better match the monthly production with the actual consumption, they now understand and agreed to match their production capacity more in line with the demand in the distribution network through monthly meetings between all concerned PDAM departments. For 6 PDAMs this already resulted in NRW reduction as shown in previous section above. Only for PDAM Depok there was still some reluctance by the Production team to implement the proposed production management because they were still unsure of possible disruption to the service to their customers. But by early December they were also convinced of the benefits to match production with customer demand and have started implementing it. The NRW data of end of December should show the first results of this.

Pressure Management

After the training on using Open-Source Hardware (OSH) program to install locally developed pressure gauges was completed in Depok, PDAM Solo and Kota Magelang already conducted follow-up by installing OSH systems within their own network. This activity will continue until the end of the program with further introduction and support to the other 5 PDAMS. Results and lessons learned on the use of OSH in NRW reduction programs will be included in the final report.

Standard Operating Procedures:

The use of proper Standard Operating Procedures (SOP) is critical to manage all PDAM activities. In previous QPRs a detailed explanation has been provided on topics, background, objective, approach process and expected results of the minimum 56 SOP (8 per PDAM) to be developed within this USAID- SECO program. Recently all PDAMs made the request to expand the list of SOPs to 12 for each PDAM, which makes the total SOP under this program to become 84.

In this quarter the SECO team supported the finalization of all 84 SOPs by the PDAM Executive director (step 4 of 5). The last step is demonstrating that they are implemented in the field. This started a bit slow, due restriction in travel to the field, but in this quarter 36 SOP are already implemented in the field, which means they passed the final step 5. In the remaining month of the program it is expected that additional 36 SOP will be implemented in the field, which will be exceeding the contract target of 35 implemented SOP by 200%. For details see Exhibit 4 below.

Exhibit 4. Progress this year for SOP development			
Step & Topic	Not started	Ongoing	Completed
1. Identification of existing SOP in PDAM	-	-	84
2. Improvement existing / development new SOP	-	-	84
3. PDAM Confirmation on improved / new SOP	-	-	84
4. Assignment of Final SOP by PDAM Management	-	-	84
5. Implementation improved / new SOP by PDAM	-	48	36

4 COMPONENT B: INCREASE ENERGY EFFICIENCY

Many PDAMs spend a substantial portion of their operating cost on electricity. Previous studies have shown that a PDAM with substantial pumping systems can cut this by as much as 20% if they would upgrade to more efficient systems and/or perform more routine maintenance services. To address these challenges, the SECO program team originally supported 4 PDAMs to implement EE program activities. The addition of a fifth location (PDAM Kota Magelang) started in PY5.

Status Procurement and installation of EE equipment in five locations:

All equipment for PDAM Bogor and Karawang was procured and installed in April – May 2021, including all preparatory work done by PDAMs. For PDAM Bogor the construction is divided in 2 Phases with the SECO Pump and preparatory work by PDAM under Phase 1 and additional pump purchased by PDAM under Phase 2. This was completed by early December.

The equipment for PDAM Surakarta and PDAM Sukoharjo were procured in January – February 2021 and installed and tested in September 2021. For PDAM Surakarta, minor problems were identified at this time with the preparation done by PDAM (foot valves, variable speed drive, pressure meter, loggers) which was rectified during October and November 2021.

For the fifth location (PDAM Kota Magelang) the equipment was procured in July 2021 and PDAM has completed all preparation for the installation by early December, when the pump is also planned to arrive. Each PDAM has been fully engaged in all preparatory works, including the cost-sharing budget requirements for constructing the pumps foundations, new cabling, piping and other necessary accessories.



Photo caption: Two new pumps procured by Perumda Air Minum Kabupaten Sukoharjo to increase their energy efficiency

Perumda Air Minum Kabupaten Sukoharjo procured and installed two new water pumps, both with the capacity of 37.5 liters per second, at Reservoir Duwet Gentan. The pump began operating on November 4, 2021, and boosted energy efficiency (EE) to 22% after one month of operation, surpassing the target of 15% EE improvement. This increase resulted in the saving of IDR 7 million in November's electricity bill compared to the previous month.

"We procured the new pump ourselves because we are committed to the EE initiative that has been carried out with the USAID-SECO Partnership. We also received assistance for the installation of the new pump," explained the Technical Manager.

Photo credit: M. Adib/USAID-SECO Partnership

Baseline and monthly monitoring of Energy Efficiency for 5 PDAMs

In the previous report, the explanation was already provided about the EE Baselines for 5 locations (Kab Bogor, Kab Karawang, Kota Surakarta, Kab Sukoharjo and Kota Magelang). All EE Baselines, measured per pumping system, are included in Exhibit 5 below. To calculate the EE baseline, the USAID-SECO partnership program uses the SEC (Specific Energy Consumption) of each pumping system. To measure accurately, a KWh and flow meter are installed at each pumpstation.

The Results column in Exhibit 5 below shows monitoring result for three PDAMs, using EE data from period October – November following the installations of new pumps, variable speed drives, control panels and additional repairs and accessories by PDAMs. For PDAM Kota Surakarta no monitoring data was obtained yet, due to the system errors explained above; Data will be obtained for December. For Kota Magelang, measurement of new pump will also be available for December.

The average EE saving for 3 PDAMs is 23%, which is above the contract target of 15% EE savings.

Exhibit 5. Details on EE Baselines, Results to date and expected results

No	Location (*pumping system)	Baseline		Result (end November)		Expected % from BL to End of Project
		Methodology used	SEC (in KWH / 1000 m3)	SEC	% from Baseline	
1	PDAM Bogor * WTP Gunung Putri	Average July - Dec' 20	247.8	214.1	- 13.6 %	- 15%
2	PDAM Karawang * Cabang Karawang	Average July - Dec' 20	196.1	130.2	- 33,6 %	- 35%
3	PDAM Surakarta * SD Kadipuro 1 * SD Plesungan 2	Average Jan – June '21	209.5 282.2	Not yet Not yet	Not yet	- 12%
4	PDAM Sukoharjo * Kartasura * IPA Baki & Getak * SD Duwet	Average July - Dec' 20	259.6 155.9 225.7	217 127.4 154.2	- 22.1 %	- 23%
5	PDAM Kota Magelang * Cabang Kanoman	Average Jan - June' 21	624.7	Not yet	Not yet	- 15%
Total Average EE Increase (% SEC)					-23 %	- 20 %

The last column in Exhibit 5 above, “Expected % from Baseline to End of Project” is based on a combination of current savings (3 locations) and estimated savings from the Energy Efficiency Audits (2 locations).

5 COMPONENT C: CAPACITY BUILDING

Sustained gains in PDAM performance to reduce NRW and increase Energy Efficiency also depend on improvements in other technical and non-technical functions. In close association with current Government training programs, capacity building is provided through a combination of classroom and online training, on-the-job training, and follow-up mentoring. Support on capacity building programs is made at two levels: (1) National level and (2) directly with PDAM partners.

The following summarizes the support at both levels (National and PDAM) and closes with an update of the status of the PIAPs, which are made by PDAM participants after completing a training.

Capacity Building support at National level

The USAID-SECO team developed in 2021 the “Roadmap for Capacity Building of Human Capital Development of PDAM”, which was launched in June 2021. During the roadmap development various institutions were identified, who all play a crucial role in future competence-based capacity building programs for the urban Water Supply sector. These institutions can be divided in 2 groups:

- (1) National Government : MPWH/Dir. Air Minum and BTAM and
- (2) Professional organizations : PERPAMSI, YPTD, AKATIRTA, PDAM Training Centers

The USAID-SECO partnership program was requested to support these groups and focus on:

- Develop Occupational Map as the basis for future PDAM Skill development programs, followed by Assessment Toolkit and Certification Scheme
- Support AKATIRTA Wiyata to be upgraded as a Vocational Education Institution
- Support and strengthen BTAM to implement PDAM skill training
- Further identify possibilities of closer collaboration with 5 existing PDAM training centers

In the last quarter, good progress was made on all of these, summarized as follows:



Photo caption: Staff of Perumda Air Minum Kota Surakarta participating in OSH Training conducted by USAID-SECO Partnership in November

In early December 2021, Perumda Air Minum Kota Surakarta installed first of seven units of open-source hardware (OSH) water meter pressure provided by the Partnership, and will install two more at the end of the month. Prior to the installation, the Partnership conducted a training for all partner PDAMs in November on assembling, installing, monitoring, and maintaining OSH loggers.

The Perumda will install four other OSH units in January 2022 and plans to independently procure OSH loggers afterwards. “We are going to customize unused loggers and present our plans for procuring new OSH loggers to the board of directors, so that we can replicate this initiative,” explained Arif Nugroho, staff of Water Balance and Data Analysis.

Photo credit: Betty Ramadhani/USAID-SECO Partnership

Occupational Map and Certification Scheme for Drinking Water Sector

The Occupational Map for Drinking Water was finalized after receiving inputs from key stakeholders during several FGD. The final version was shared with new Director of PUPR/Directorate of Water Supply in late November. He highly appreciated the effort of USAID-SECO on preparing the roadmap and Occupational Map and promised to provide his full support to include the road map in the list for a Ministerial Regulation (KepMen) and to provide foreword for the Occupation Map.

Furthermore, the draft of the *Certification Scheme and Assessment Toolkit* for the drinking water sector was prepared as a follow-up to the Occupational Map and as reference for the implementation of certification, development of assessment tools, issuing competency certificates, developing teaching materials, and recruiting employees. Draft will be finalized in coming month

BTAM Roadmap and Training

This quarter, USAID – SECO Team continued supporting the development of the BTAM roadmap as the strategic plan for BTAM staff to conduct competency-based training and become a Professional Certification Agency (LSP). During regular discussions, key issues were clarified, and it is planned that the roadmap will be completed in first week of January 2022. In addition to the roadmap development, the team supported a Training of Trainers in early December for staff from BTAM and 4 PDAM Training Centers and also is preparing a assessor training for the same group, in preparation of their future position as senior trainers and assessors of the competence modules

Preparation of Competence Based training modules

The preparation of the competency-based modules (on Asset Management, Health & Safety, NRW and EE) continued this quarter and a fifth one was added on Accounting Principles & Procedures. By the middle of December 3 modules (NRW, EE and Health & Safety) are complete and the remaining two modules will be completed before the end of December. Trials are currently ongoing as part of the regular capacity building program for the PDAM supported by the USAID-SECO partnership program and will be completed by mid-January 2022.

Akatirta Roadmap:

During several meetings and workshops the roadmap for increasing AKATIRTA's capacity to become a Vocational Education Institution and eventually a Polytechnic was continued. The draft roadmap has been agreed already by the AKATIRTA team and the final version will be ready before the end of December.

Support strengthening of existing 5 Training Centers

In this quarter the final draft of the *guidelines for training center management* was completed and shared by FGD with key national stakeholders (PUPR/DAM, BTAM, PERPAMSI, YPTD) as well as the 4 PDAM Training Centers (Kota Malang, Samarinda, Pontianak, Kab Tangerang) and PATEN (PALYJA's Training Institute). PDAM Surabaya also joined as they have also shown strong interest to be considered as future PDAM Training Centre as well. The comments from this FGD are now incorporated in the final version, which will be ready for publication in early January 2022

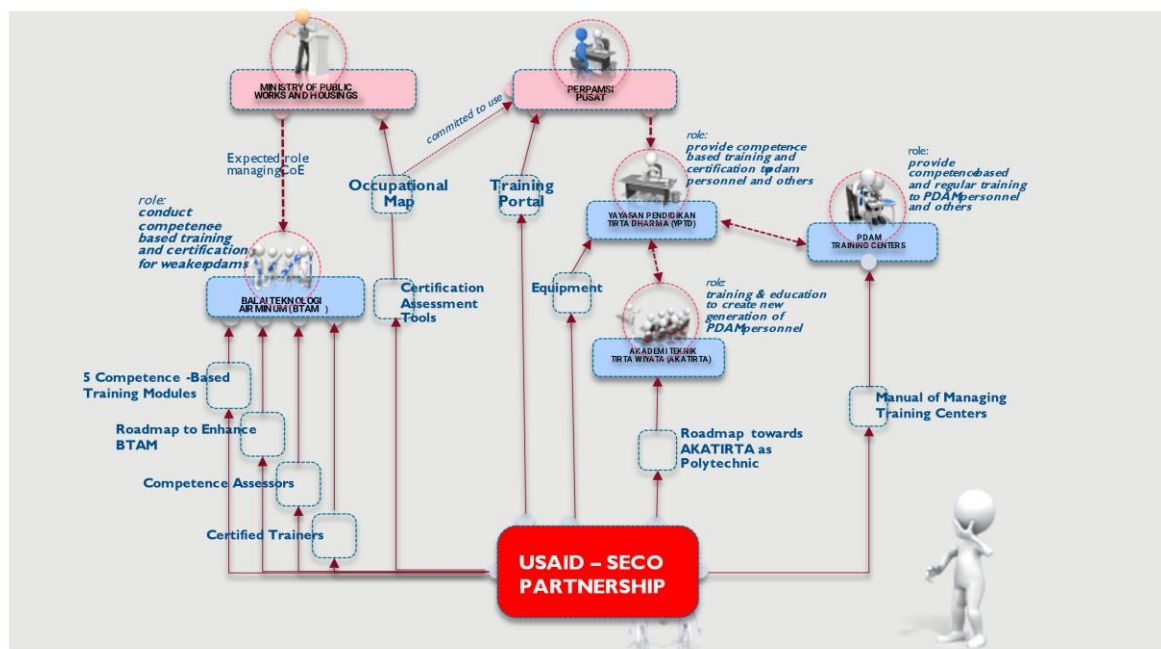
Preparation of Management Training Portal:

The purpose of the Training Portal is to provide training information on all drinking water related topics organized by all training providers, both by all institutions included in the roadmap as well as

other programs. This will be available in one (online) platform, so that all PDAM staff and others interested in joining training drinking water sector can access this information and easily select and register for the appropriate training. It was agreed in the roadmap that PERPAMSI will be responsible for this portal. In this reporting period, the portal has been developed and trialed. By end of December, it is planned that it will be introduced to selected group of PDAMs.

An overview of the relationship between the involved institutions and how the USAID-SECO partnership has supported them can be found on the diagram below.

Exhibit 6. Relationship between the involved institutions and USAID-SECO Partnership supports



Update on additional, supplementary Capacity Building programs

several additional Capacity Building activities are conducted to further support the National PDAM Capacity Building development programs. The following bullets provide a short summary and update:

Guidelines for Regulations in Business to Business (B2B) Cooperation Objective:

The purpose of this B2B guideline is to standardize the preparation and implementing of partnerships following the B2B mechanism with (professional) third parties/investors. The first FGD was done to obtain input on implementing stages of B2B, including preparation, procurement/tender process and implementation of cooperation from PDAMs. Additional FGD were done in this quarter to socialize the B2B guidelines to selected PDAM and obtain comments for the final version. This final version is under preparation, including layouting and will be ready by the end of the program.

Development of Web-Based GIS system

To facilitate PDAM field staff responsible for managing the distribution network and maintain minimum water flow and pressure throughout the system, a Web-based GIS system was designed by the IUWASH-PLUS GIS team. In this way PDAM staff can better monitor what happens in the various critical points in the field from their office. In this quarter training of the system was completed for the remaining 5 PDAMs. Also, in December the final installation started for PDAM Karawang and Solo. All installation will be completed by the first week of January 2022.

Capacity Building approach at PDAM level:

During this quarter, the following trainings were conducted in West and Central Java:

- Training on Health and Safety in October 2021
 - This was training number 9 of the 12 regular project trainings
 - This was trial of the first Competence Based training
 - 26 participants joined from 7 SECO locations
 - Results of pre-and post-test are: 46,8 (pre-test) and 59,5 (post-test)

During this quarter additional practical trainings were provided as follows:

- Collaboration with PATEN (Training Center from PALYJA-DKI) in November- December
 - In-house (practical) network operator training at 7 PDAM locations (total 130 staff)
 - (practical) Energy Efficiency implementation training (14 staff)
 - (practical) NRW reduction implementation training (26 staff)
- Training on OSH (Open-Source Hardware) in Depok in November
 - Use of Open-Source pressure measuring equipment (theory and practical)
 - for 22 PDAM staff of 7 SECO locations
 - To be followed up in each PDAM in next month.

The three Remaining project-based trainings (competence based NRW, EE and Asset Management) will be conducted between mid-December and mid- January. All final figures of staff trained and pre-and post-tests will be included in the final report.

Performance Improvement Action Plans

PIAP (Performance Improvement Action Plans) is an assignment for participants after each training with a suitable topic for each training. The SECO teams monitor and support the participants in completing their PIAP and the final results of each completed PIAP are documented by the SECO team and summarized through the quarterly and annual progress reports. Since completing the first training in PY4, participants developed their PIAP, including sharing results with their PDAM management for formal approval and support by the locally based SECO staff.

By the end of this quarter, from the completed trainings, 3 additional PIAP were completed bringing the total by the end of this reporting period to 26 completed PIAP. An additional 17 PIAP are planned to be completed by the middle of January 2022, bringing the expected total completed PIAP

to 43. This is 15 PIAP (153%) above the contract target of 28 PIAP. The final list of completed PIAP will be presented in the Final report.

5.1 NEXT MONTH ACTIVITIES

The following list summarizes the main activities to be undertaken in the next 3 months:

General Management:

- Continued assistance to PDAMs and PEMDA regarding participation for PBG Baseline, etc.
- Make arrangement for handover measuring equipment to YPTD
- Make all closeout arrangements (staff, office equipment, etc)

Component A: NRW reduction

- Finalize production management, include to find and setup hidden valves
- Formalize procedures for monthly NRW meeting by PDAMs.
- Finalize procedures with PDAMs to manage meter anomalies, physical leak repair and DMA improvements
- Finalize use of smart meters with PDAMs
- Finalize use of OSH by PDAMs
- Conduct final Web-GIS monitoring
- Conduct last NRW training (level 3)
- Continue to monitor NRW level for all 7 participating PDAMs
- Finalize SOP for 7 PDAMs

Component B: Energy Efficiency

- Complete installation and testing of pumps at PDAM Kab Bogor, PDAM Kota Magelang and PDAM Karawang
- Continue to monitor EE at all 5 participating PDAMs

Component C: Capacity Building

- Finalize road map of Akatirta
- Finalize road map for BTAM
- Finalize guidelines of training center institution
- Conduct training of trainer training and assessor training for BTAM staff
- Continue trial 5 competency modules:
- Continue to monitor PIAP
- Conduct trial on training portal and share results and recommendations with PERPAMSI.

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