Utility Platform

For strengthening partnerships
of municipal utilities worldwide

Outcome Report 2 – Water Operator Partnership

Ukrainian Water Operators in Lviv, Ternopil and Nadvirna and German Operators Stadtentwässerung Dresden, SteB Köln and Berliner Wasserbetriebe

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© SEDD 2019 in front of Dresden-Kaditz Wastewater Treatment Plant

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Львівводоканал

Асоціація "Укрводоканалекологія"

The Utility Platform is financed by the Federal Ministry for Economic Cooperation and Development of Germany (BMZ). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and Engagement Global/ the Service Agency Communities in One World (SKEW) have been implementing it since July 2019. The pilot project is being developed and implemented together with the German Association of Local Public Utilities (VKU) and German Water Partnership (GWP).

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On behalf of Federal Ministry for Economic Cooperation and Development

In cooperation with German Water Partnership

VKU VERBAND KOMMUNALER UNTERNEHMEN e.V.

About "Utility Platform for Strengthening Partnerships of Municipal Utilities Worldwide"

Context
In many German partner countries, municipal utilities providing public goods and services such as water and waste disposal are in poor economic shape. As a result, their service provision is only unreliable or does not reach the entire population. Due to the war, utilities in Ukraine are finding it particularly difficult to maintain operations, restore destroyed technology and bring new plants up to European Union standards. In the face of climate change, growing cities and digitalisation, utility companies in Germany and its partner countries are facing similar challenges in order to continue providing their services.

Objective
Municipal utilities in cooperating countries have better access to up-to-date, tried-and-tested knowledge and the technical and institutional expertise of German municipal utilities.

Approach
The Utility Platform promotes and supports 28 partnerships between German municipal utilities and operators in Zambia, Tanzania, South Africa, Jordan, Moldova, Ukraine and Albania in the water and waste sector. The platform promotes close exchange on corporate management and on operating and maintaining plants. Technical advice, mutual visits, job shadowings, virtual meetings and the procurement of technology, particularly for Ukraine, form the core of the cooperation between the companies.

The project has also established a logistics hub that dispatches donations and procurements from German utility companies to their Ukrainian counterparts. Appeals for donations by the Association of Local Utilities (VKU) make it possible to deliver needed technical equipment to Ukraine. In addition to the donations, the logistics partner Go Local also transports the goods that are procured for Ukrainian utilities as part of the 16 solidarity operator partnerships.

About the author: Dr Katharina Welle

Dr Katharina Welle is an evaluation specialist with expertise in water, sanitation and hygiene and public health in international development. She is based in Brighton, in the UK, where she works as an independent consultant carrying out evaluations, providing organisational support on theory of change, performance monitoring and learning in the WASH sector and beyond.

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ACRONYMS

BWB	Berliner Wasserbetriebe
DWA	Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall. e.V.
GWOPA	Global Water Operators' Partnerships Alliance
GWP	German Water Partnership
KPI	Key Performance Indicator
SEDD	Stadtentwässerung Dresden
SDGs	Sustainable Development Goals
StEB Köln	Stadtentwässerungsbetriebe Köln AöR
WOP	Water Operators' Partnership

EXECUTIVE SUMMARY

The SEDD-led Ukraine Water Operator Partnership (WOP) started in July 2019, first as a WOP including three German partners – Stadtentwässerung Dresden in the lead and Stadtentwässerung Köln and Berliner Wasserbetriebe as co-leads on the German side and Lvivvodokanal as the Ukrainian partner organization. The partnership was expanded at the end of 2021 to include three further Ukrainian partners: two utilities – Nadvirnavodokanal and Ternopilvodokanal - and the Ukrainian water and waste water association „Ukrovodokanalecologiya".

Partnership strength: Despite a difficult context, namely COVID-19, the outbreak of the war in Ukraine and the need to rely on interpreters for communication amongst many working group members, the partnership grew strongly over the period of the last 2.5 years. This was helped by a swift solidarity response from German partners providing emergency support to their Ukrainian colleagues at the outbreak of the war. WOP members report strong levels of trust, productive working relations and a good representation of technical staff in thematic working groups. Reflections of WOP members identified the development of clearer joint goals, further effort to develop two-way collaboration on jointly defined topics and more emphasis on specific bilateral thematic work as opposed to group exchanges as areas for further development.

Outcomes: Overall, almost all planned outputs for this WOP have been achieved and several capacity outcomes can be identified despite difficult circumstances (COVID-19, outbreak of war in Ukraine) and a large number of partners. The results have led to a strong basis for further collaboration and for further substantial operational changes within the individual municipal enterprises. Furthermore, some WOP topics have the potential to spark wider discussions within the Ukrainian water sector e.g. the question of tariff calculation.

For reporting WOP results a distinction was made between (i) the thematic WOP with Lvivvodokanal, (ii) solidarity activities involving all Ukrainian partners and (iii) the thematic WOP with Nadvirnavodokanal, Ternopilvodokanal and the Ukrainian water and wastewater association (see table 1 for a summary of capacity outcomes).

(i) Thematic WOP with Lvivvodokanal:

- The working group on cost covering tariff led to a first tariff gap calculation for Lvivvodokanal, which sparked further exchanges on the topic with the Ukrainian ministry and tariff setting authority

- Detailed interactions on water supply optimization topics led to the application of new skills e. g. of a de-ironing procedure in Lviv and to progress in digitizing Lvivvodokanal's infrastructure network and first changes in management processes in the way leaks are detected in the system.

- The working group on asset management developed and populated an asset register for the wastewater treatment plant and a pumping station, leading to a better understanding of which assets need to be replaced when and, based on this, a greater ability to plan maintenance and investments ahead of time.

(ii) Solidarity activities involving all Ukrainian partners:

- All Ukrainian partners were enabled by the emergency supplies to keep their water and wastewater operations running despite experiencing power cuts in their service areas.

- Trainings focusing on female employees enabled further technical collaboration despite the war and led to increased networking amongst Ukrainian companies.

(iii) Thematic WOP with Nadvirnavodokanal, Ternopilvodokanal and the Ukrainian water and wastewater association "Ukrovodoekologiya":

- Technical advice on existing infrastructure construction plans helped Ukrainian partners to ready themselves for reconstruction and development work.

Organisational level		Capacity outcome	Lviv – cost covering tariffs	Lviv – water supply optimization	Lviv – asset management	All – emergency upport	All – training for female employees	Nadvirna/ Ternopil – technical advice
INDIVIDUAL		Enhanced knowledge and skills	see 3.1.1	see 3.1.2	see 3.1.2	see 3.2.1	see 3.2.2	see 3.3.1
		Increased motivation				see 3.2.1		
		Applied new knowledge and skills	see 3.1.1	see 3.1.2	see 3.1.2	see 3.2.1		
OPERATIONAL		Improved data and information			see 3.1.2			
		Better systems			see 3.1.2			
		Improved organisational structure						
		Better equipment/ infrastructure				see 3.2.1		
		Improved management practices						
		Improved working routines		see 3.1.2				
STRATEGIC		Improved vision, mission, strategy						
		Additional resources						
		Improved external relations						
		More supportive organisational culture						
		Better leadership						
OTHER		Any other Outcomes						

Table 1: Summary of SEDD-led Ukraine WOP capacity outcomes

1. INTRODUCTION

The Federal Ministry for Economic Cooperation and Development of Germany has set up the 'Utility Platform for strengthening partnerships of municipal utilities worldwide', as a pilot project running from 2019 until 2024. Another project phase will be starting in July 2024, running until June 2027. The initiative supports partnerships between municipal utilities in Germany and its partner countries to support the implementation of the Sustainable Development Goals (SDGs) and the New Urban Agenda. The partnerships of the pilot project follow principles of peer-support with the aim to build capacity on a not-for-profit basis to enable better service delivery. These principles were derived from the Global Water Operators' Partnerships Alliance (GWOPA), which was founded in 2009.

The SEDD-Ukraine Water Operators' Partnership (WOP) is one of nine international WOPs, three solid waste operator partnerships and 16 solidarity operator partnerships with Ukraine supported under the pilot project until June 2024. This report summarises the evolution and maturity of the partnership and the outputs and capacity outcomes that the WOP has achieved so far for each thematic area of collaboration.

The following approach was followed to identify and document WOP outputs and outcomes and to assess the strength of the partnership. First, WOP operational plans were reviewed and adapted to reflect expected results via an excel-based results reporting format for each thematic work area.

Then, project outputs and capacity outcomes were assessed via document and expenditure review, exchanges with WOP coordinators and semi-structured interviews with selected WOP participants. To assess capacity outcomes, an adapted version of the 'Performance and Change Model' by Burke and Litwin (1992) was used.

Capacity is unpacked into individual, operational and strategic capacity outcomes:

Organisational level		Capacity outcome	Description
INDIVIDUAL		Enhanced knowledge and skills	Availability of human resources and the extent to which they have the required skills and knowledge to accomplish the work they have been assigned to.
		Increased motivation	Proactive tendencies to move towards goals, take needed action and persist until satisfaction is attained.
		Applied new knowledge and skills	Active use of the newly acquired knowledge and skills in daily practices.
OPERATIONAL		Improved data and information	Updated information on the conditions of any part of the water utility system, be it related to physical infrastructure (e. g. pipes), management processes, (e. g. customer database) or otherwise.
		Better systems	Standardised policies, procedures, management and operational information systems and mechanisms that facilitate work.
		Improved organisational structure	Arrangement of functions and people into specific areas and levels of responsibility, decision making authority, communication and relationships to assure effective implementation of the organisation's mission and strategy.
		Better equipment/ infrastructure	Tools and equipment necessary for utility operations and basic infrastructure for the business processes (e. g. water production and distribution).
		Improved management practices	Practices that managers use to mobilise the human and material resources at their disposal and advance the strategy, including managerial behaviour, work etiquette, professionalism, planning, communication and control.
		Improved working routines	The way the tasks are executed daily in consolidated routines.
STRATEGIC		Improved vision, mission, strategy	The vision outlines the company's goal for the future and the values that define it. A mission states how the company will achieve its vision. Strategies are the ways in which the mission and vision will be reached.
		Additional resources	Additional (financial) resources via new acquisition or operational costs savings.
		Improved external relations	Improved communications with external stakeholders and customers. This includes stakeholder relations that the operator has forged and how such networks support the achievement of its strategy.
		More supportive organisational culture	Collection of rules, values and principles that are enduring and guide organisational behaviour.
		Better leadership	Managerial staff providing overall organisational direction and serving as behavioural role models for all employees.
OTHER		Any other Outcomes	

Table 2: Description of capacity outcomes

The partnership's strength was assessed using the 'Partnership Health Check' tool categories developed by Prescott and Stibbe (2017). For this WOP, the strength of the partnership was assessed via semi-structured interviews because the validation meeting required simultaneous translation, which would have made it logistically difficult to manage an online discussion amongst partners. This means that only a reduced set of partnership categories was covered and the assessment is based on the insights from interviews rather than a group discussion. A validation meeting was held to present draft findings to key WOP stakeholders and the draft report was also shared for feedback.

Dresden partners visiting Helmholtz-Zentrum Dresden-Rossendorf (HZDR) together with their Ukrainian partners | 2022

Photo: SEDD

2. THE WATER OPERATOR PARTNERSHIP (WOP)

This section presents the WOP partners and tells the history of the partnership.

2.1 WOP Partners

The Water Operator Partnership (WOP) with Ukraine is coordinated by Stadtentwässerung Dresden (SEDD), with Stadtentwässerungsbetriebe Köln (StEB Köln) and Berliner Wasserbetriebe (BWB) providing thematic support to Ukrainian partners, in particular Lvivvodokanal, the municipal water utility of Lviv, on specific topics. On the Ukrainian side, there are four Ukrainian partner organisations, the city operators Lvivvodokanal, Nadvirnavodokanal and Ternopilvodokanal and the water and wastewater association Ukrovodoekologiya. Box 1 provides a brief description of each partner and their role in the WOP.

Ukrainian partners are visiting IFAT Munich trade fair together with their German partners | 05/2024

Photo: SEDD

Box 1: WOP partners

Lead Partner in Germany: Stadtentwässerung Dresden GmbH (SEDD) provides wastewater services to 787,000 people in East Saxonia via a wastewater infrastructure network of 1,850 km and a wastewater treatment plant in Dresden-Kaditz. The company has 400 employees. The public enterprise has been involved in international cooperation projects since 2012 with a thematic focus on technical trainings for wastewater treatment.

Stadtentwässerung Dresden
WIR KLÄREN DAS FÜR SIE

Co-Partner in Germany: Berliner Wasserbetriebe (BWB) is the biggest integrated water supply and wastewater treatment utility in Germany serving 3.8 million people in Berlin and 82,000 people in the region of Brandenburg with drinking water services and 4.4 million people with wastewater treatment. The public utility has 4,500 employees.

Berliner Wasserbetriebe

Co-Partner in Germany: Stadtentwässerungsbetriebe Köln AöR (StEB Köln**)** serves 1 million customers in the city of Cologne with wastewater services and flood prevention via a network of 2,289km. StEB has 670 employees. It participates in the project 'connective cities' on the topic of international know-how transfer.

DIE WASSER BESSER MACHER

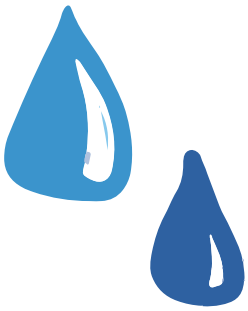
StEB Köln

Львівводоканал

Partner in Ukraine: Lvivvodokanal is a public utility incorporated into the city of Lviv, Western Ukraine. It provides water and wastewater services for approximately 730,000 people and 10,000 enterprises in the city and region of Lviv. The operator developed technical plans and obtained funding for upgrading its wastewater treatment plant at the start of the partnership.

Водоканал

Partner in Ukraine: Nadvirnavodokanal is a communal enterprise responsible for drinking water and wastewater services for 21,000 people in the city of Nadvirna and its surrounding villages in Western Ukraine. It has 68 employees, a canal network of 30km and a central wastewater treatment plant, which it intends to replace. Plans for a new plant have been developed but the investment not yet secured.



Partner in Ukraine: Ternopilvodokanal is a communal enterprise responsible for drinking water and wastewater services of 240,000 people and 4,000 businesses / organisations in and around the city of Ternopil, Western Ukraine. The enterprise employs 500 people, has a water supply infrastructure network of 400km and a wastewater infrastructure network spanning 300km. The enterprise intends to modernise the wastewater treatment plant and to modernise its infrastructure but had not yet secured funding at the start of the partnership.

Асоціація "Укрводоканалекологія"

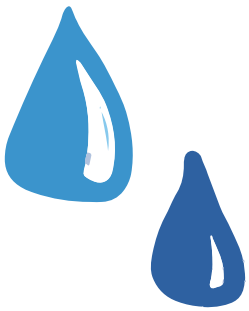
Partner in Ukraine: Ukrovodokanalekologiya is an association representing Ukrainian water and wastewater operators, producers, suppliers and academia. It represents water and waste water operators' interests in Ukraine and provides backstopping support to make them more efficient and sustainable.

2.2 Timeline of the partnership

The WOP was originally set up in July 2019 with the city of Lviv as the only Ukrainian partner with the aim to improve the use of existing infrastructure by analysing weaknesses and identifying solutions drawing on good practice examples from German operators (See Box 1 for more details on the participating partner organisations).

Two additional Ukrainian operators (Nadvirnavodokanal and Ternopilvodokanal) and the Ukrainian water and wastewater operator association Ukrovodokanalekologiya joined the WOP 1.5 years into the collaboration, in late 2021. Together with Dresden's SEDD they had originally sought WOP funding under the EU-WOP programme. When this funding did not materialise, GIZ agreed to expand the existing partnership with Lviv. The aims of the widened partnership remain the same, with the expectation that the larger partnership will lead to synergies across activities and to potential replication across other operators in Western Ukraine facilitated by the water and wastewater operator association.

Shortly after the WOP expansion, military hostilities broke out in Ukraine, shifting the focus of collaboration with all partners from thematic exchanges to providing immediate support for maintaining basic infrastructure and operations through emergency equipment and technical exchanges. The original thematic topics of advice on infrastructure investments, asset management, cost covering tariffs and process optimisation remain of interest to all parties, with a particular focus on readying the Ukrainian operators for future investments that are in line with European standards and regulations. Table 1 summarises a timeline of the key events and developments of the WOP between July 2019 and December 2023. The total resource envelope provided to the partnership for 3.5 years was € 1.787.080.



Timeline	Key events / developments
October 2019	**WOP Partners get to know each other at the matching workshop of the Utility Platform.** They stay in touch for initial planning until the WOP can formally kick-off in January 2021.
January 2021	**The WOP contract is signed.** Development of initial thematic work areas based on match-making workshop in German and several online exchanges. Originally identified areas of collaboration were (i) water supply: cost-covering tariffs, (ii) asset management: systems and process optimisation and (iii) human resources management and knowledge exchanges on other relevant topics.
August 2021	**A regular cycle of meetings is established and thematic collaboration is refined.** A situation analysis for each thematic work area takes place via remote communication between partners, resulting in further prioritisation and identification of additional topics, monthly online working group meetings are established, supported by an interpreter.
September 2021	**First visit of German partners to Lviv.** German partners visit Lviv during ECO FORUM; they collect information of the asset and discuss about the problems and challenges of the existing wastewater treatment plant.
October 2021	**A proposal to expand the WOP is put to GIZ.** The proposal is to include the operators Nadvirnavodokanal and Ternopilvodokanal and the water and wastewater operator association Ukrovodokanalekolgyja with the intention to develop a regional WOP in Western Ukraine.
February 2022	**War breaks out in Ukraine.** Emergency supply and development of blackout scenarios moves to the forefront of the peer-to-peer partnership, other topics are only marginally worked on or temporarily put on hold.
March 2022	**First supply of emergency equipment donated by German operators arrives in Ukraine.** The equipment of emergency generators and related material aims to enable the Ukrainian operators to maintain a basic level of operations in spite of power cuts.
First half of 2022	**WOP activities focus on solidarity support.** Most thematic work group discussions are stalled whilst exchanges focus on spontaneous fundraising amongst German partners and procurement with GIZ funding for emergency equipment and on exchanges around 'blackout scenarios' to help partners plan for emergencies; Volodymyr Motyl starts supporting the WOP on matters of coordination of work topics, meetings with Ukrainian partners, *-/+translation and support with organisation of emergency supplies.
Second half of 2022	**New thematic work areas are developed to suit the expanded WOP.** During a visit of Ukrainian partners to Germany, new ideas for peer-to-peer activities are developed that suit all partners and to further discuss emergency support measures. Ad hoc exchanges continue to focus on emergency supplies and on advice around blackout scenarios to help the partners cope with electricity black-outs and the intermittent influx of internally displaced people. Technical exchanges with Lviv continue on the topic of asset management und water supply; exchanges on other topics are temporarily stalled due to the changing circumstances.
December 2022	**First supply of GIZ-funded emergency equipment.** This consists of more generators and other requested equipment to enable Ukrainian operators to continue their services.
May / June 2023	**Networking at WOP Congresses in Germany and organisation of training courses.** Representatives of Ukrainian operators join their German WOP colleagues for WOP congresses, thematic work meetings and to attend training courses. Due to the continuation of the war in Ukraine and the inability of male workers to travel, the role of and support to female employees takes on an important role in the Ukrainian water sector and the WOP.
November 2023	**Continued supply of emergency equipment and technical exchanges where possible.** The lead partner SEDD continues to advance the second set of emergency procurement activities for Ukrainian partners. At the same time, thematic exchanges continue with all partners, mostly on a bilateral basis. For example, SEDD provides feedback on Ternopil's and Nadvirna's wastewater treatment reconstruction plans, facilitates a collaboration between the Ukrainian association and German partners on sector standards and regulations, whilst thematic work with Lviv progresses on the topic of asset management and tariffs.

Table 3: Timeline of key WOP events and developments

3. PROGRESS TOWARDS RESULTS BY WORK AREA

This section documents the outputs and outcomes achieved by work area. As this WOP has seven partners and several areas of collaboration, the content of the WOP has been divided into three result areas: The (a) thematic WOP between SEDD, StEB Köln, BWB and Lvivvodokanal, (b) solidarity support to all Ukrainian partners during the war, and (c) thematic areas of collaboration with Nadvirnavodokanal, Ternopilvodokanal and the water and wastewater association Ukrovodoekologyia.

3.1 Thematic WOP with Lvivvodokanal

The partnership with Lviv includes the three German partners, who work with the Ukrainian operator Lvivvodokanal on different thematic areas. The WOP currently contains five working groups on the topics of (1) cost-covering tariffs with SEDD Dresden, (2) water supply and wastewater working on (a) water supply optimisation with BWB, (b) asset management with StEB Köln and sludge management, and (3) needs-based human resources management with SEDD.

3.1.1 Cost-covering tariffs

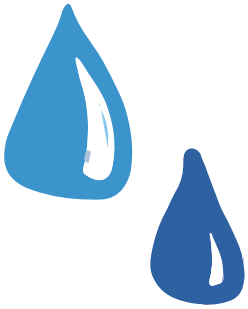
Challenge: In Ukraine, tariffs are low due to country-wide tariff regulations leading to an inability to cover operational costs and hindering investments. This is a particular problem for larger utilities like Lvivvodokanal. After several rounds of discussion amongst all Ukrainian partners, it was decided that the topic should be approached through a concrete example, starting with the case of Lviv in the first instance.

Goal: the aim of this working group is to calculate the financial deficit arising between operation, maintenance and investment needs on the one side and costs covered by current tariffs on the other side to provide Lvivvodokanal with an evidence base for articulating the need to raise tariffs with sector stakeholders and customers.

Progress to date: After initial discussions the topic was dormant for some time, in part due to the outbreak of war. In early 2023, Lviv re-ignited conversations with a specific tariff calculation request. In July 2023, SEDD hired an external consultant to calculate the financial gap between income from tariffs and operation and maintenance needs based on the German tariff calculation model. The consultant presented his findings to Lviv colleagues based on financial data for Lvivvodokanal for 2020.

Outcome: The work on this topic has been completed and all outputs have been achieved. In terms of capacity outcomes, the evidence base on the financial gap has given colleagues in Lviv a better understanding of how much tariffs would need to be raised to carry out necessary investments. The evidence base has also equipped them for further dialogue with sector stakeholders and customers. Since the presentation of the tariff calculation, the utility has had discussions with the Ukrainian sector ministry, the authority responsible for tariff approval and the Ukrainian water and wastewater association resulting in a plan to use Lvivvodokanal as a pilot for exploring a new tariff model building on the German example.

- Enhanced knowledge and skills: Ukrainian employees have a clear idea of the gap between existing investment needs and feasible investments if the tariffs stays at current levels.
- Lvivvodokanal used their enhanced understanding in dialogues with the Ukrainian sector ministry and authority responsible for tariff approval to use L. as a pilot for modelling a new tariff system.



3.1.2 Water supply and wastewater management

This thematic area contains three sub-topics, and is supported by the German co-partners BWB and StEB Köln.

Water supply optimisation and automation – BWB

Challenge: Lvivvodokanal is seeking feedback and support with implementing its water supply strategy 'time for water', which aims to (i) improve water quality for end users (overcoming problems of rustiness, chlorine taste, scale build-up) and (ii) to introduce automation and less energy-intensive equipment at pumping stations.

Goal: The aim of the working group is to provide feedback and technical inputs to Lvivvodokanal on the implementation of its 'time for water' strategy based on specific demand-led topics.

Progress to date: Following general feedback by BWB on Lvivvodokanal's 'time for water' strategy, the partners organised a series of remote exchanges on ways to improve water quality and on the automation of water production processes. Each exchange started with specific questions from the Ukrainian partner that were answered via detailed presentations and discussions led by BWB. On the topic of water quality, activities included presentations on sewer inspection, cleaning and rehabilitation and a WOP-financed test flush of a small part of Lviv's network to understand to what extent this would clear out the build-up of iron sediments in the system. On the topic of automation BWB delivered a series of presentations and Lviv colleagues carried out a job-shadowing visit in Berlin to understand the work processes and plant infrastructure. Whilst BWB did not develop an operational plan for this work area, exchanges covered a wide range of subtopics, documented via detailed minutes. Another topic of discussion was the identification of hidden leakages in the network, an issue that leads to high water losses in Lviv.

Outcome: All planned outputs were achieved with the result that there is now a common understanding amongst partners about Lviv's 'time for water' strategy ambitions and challenges. In terms of capacity outcomes, the ensuing technical exchanges led to a better understanding on the side of Lviv's colleagues about practical options for improving water quality and automation and a practical application of one procedure (removal of iron). Following a presentation of BWB's use of Geographic Information System (GIS) technology, Lvivvodokanal has started to input its pipeline locations into GIS and has continued exchanges with BWB on how to establish this properly. Following the exchanges on hidden leakages, Lvivvodokanal plans to introduce a similar system as the one presented by BWB. In the meantime, the company has started to change its internal business processes to improve leakage detection with the existing equipment in place.

- **Enhanced knowledge and skills:** Employees in Lviv have a better understanding of how to optimize the drinking water supply.
- **Applied new knowledge and skills:** Employees in Lviv have tried out an on-site de-icing process and have started to enter their pipes into a GIS-System
- **Improved working routine:** First changes in management processes in the way leaks are detected in the system have been implemented.

Colleagues from Stadtentwässerung Dresden and Stadtentwässerungsbetriebe Köln with their partners from Livivvodokanal during the 6th network meeting of the Utility Platform in Dresden | 04/2024

Photo: Katharina Grottke

Asset management – StEB Köln

Challenge: At the start of the WOP, Lvivvodokanal did not have a clear understanding of the investment needs required to operate and maintain its water and wastewater infrastructure over time.

Goal: The aim of the asset management group is to develop a comprehensive register of sewage treatment plant and pumping station assets in order to understand where investments are most urgently needed and which costs are involved.

Progress to date: The group has collaborated closely through bi-weekly online meetings. Collaboration started by adapting StEB Köln's model to the reality of Lvivvodokanal. Once the model was developed, Lvivvodokanal colleagues entered the data with the support of the German team. After close collaboration over two years, the working group has developed a comprehensive list of wastewater treatment plant and pumping station assets and their status using a traffic light system.

Outcome: The working group is in the final steps of developing and populating an asset management system, thereby achieving the working group's outputs. In terms of individual outcomes, colleagues in Lviv, including at directorship level, now have a better overview of their investment needs and how to prioritise them. On the operational capacity side, the group has introduced a new system and has technical data available that can be used going forward to cost and prioritise operation, maintenance and investments. The management of the company understands and values this new system as a tool to support work planning and to identify specific investment needs and strategies and to articulate these to potential lenders or funders.

On the German side, the collaboration with Lvivvodokanal is helpful in gaining new insights and a new perspective on the original model developed by StEB Köln.

- **Enhanced knowledge and skills:** Colleagues in Lviv have enhanced their knowledge on the concept of asset management.
- **Applied new knowledge and skills:** Employees in Lviv have classified key equipment using asset management.
- **Improved data and information:** Colleagues in Lviv have more information to prioritize investments.
- **Better systems:** An asset management system is set up for Lviv's wastewater treatment plant and pumping station.

Lviv delegation visiting Cologne | 05/2023

Photo: StEB Köln

Sludge management – SEDD

Challenge: Prior to the WOP, Lvivvodokanal secured funding for renovating and expanding its sewage treatment plant.

Goal: A working group was formed to provide technical inputs on construction plans taking into consideration to European standards and regulations.

Progress to date: After initial meetings, a review of construction plans and on-site inspections, first exchanges took place. However, due to the breakout of war in Ukraine, the investor withdrew and this working group is on hold until further notice. There is no operational plan or related results related to this thematic work area.

View of the aeration basins | 09/2021

Willy Lenk with two employees of the wastewater treatment plant | 09/2021

Primary clarifier at the wastewater treatment plant in Lviv | 09/2021

Photo: Willy Lenk, SEDD

3.1.3 Needs-based human resources management – SEDD

Challenge: Prior to the war, Lvivvodokanal faced the problem of an aging workforce and the need to attract younger technical personnel and leadership positions and wanted to change its management structure.

Goal: At the start of the WOP, SEDD and Lviv-vodokanal decided that improvements in human resources management would be an important area of collaboration. They carried out a situation analysis and identified three specific work areas (attracting and retaining employees, reducing the average age of employees, and controlling) and developed an operational plan.

Progress to date: The group interacted until the outbreak of the war, which dramatically changed the human resources situation in Lviv. The focus of the Ukrainian operator turned towards maintaining a basic workforce to keep services running and the topics identified at the start of the WOP are not suitable in the current situation. They have been suspended until further notice.

Outcome: There is no outcome as the working group was suspended before substantial progress was made.

3.2 Solidarity partnership with all Ukrainian partners

The solidarity partnership includes all Ukrainian and German partners. The shift towards solidarity happened with the outbreak of the war in February 2022. It covers the supply of emergency equipment, technical exchanges on maintaining basic services in emergency situations and training courses for staff not serving in the army (female workers and staff over the age of 60).

3.2.1 Supply of emergency equipment and emergency planning

Challenge: In February 2022, war broke out in Ukraine. The immediate threat of war-related activities to water and wastewater services was that power cuts would disrupt water supply and wastewater treatment to the population. Furthermore, demand for services changed based on the temporary influx of refugees.

Goal: The aim of the supply of emergency equipment and exchanges on emergency planning is to help ensure that the water and wastewater services provided by the three Ukrainian operators remain operational.

Procured and donated goods from the German partners arrive in Lviv and Nadvirna | 2022-2024

Photos: SEDD, Nadvirnavodokanal

Progress to date: Activities under this thematic area cover two rounds of supply, one in 2022 and one in 2023 and includes both, fundraising activities by German operators and supplies procured with solidarity operator partnership budget funding provided by the Utility Platform of 1.05 million Euros. SEDD coordinates all related activities, which takes up a substantial amount of resources on the side of the German lead partner. At the start of the war, SEDD mobilised its German partners to organise the immediate supply of six used emergency generators and frequency converters. These goods arrived within the first month of the war and were hugely appreciated by the Ukrainian partners. Based on funding from the Utility Platform, SEDD procured additional equipment worth approximately 450,000 Euros in 2022 and 600,000 in 2023. The specific items to be procured were identified based on demand from Ukrainian partners, and on availability and relevance of the requested items assessed by SEDD. The equipment mostly consisted of further emergency generators and frequency converters in the event of electricity cuts and satellite phones to enable workers to maintain communication at all times. Other items included emergency pumping equipment for Ternopil where drinking water is based on groundwater, first aid equipment and other essential materials such as cables and tools. At the end of 2022, SEDD also delivered protective clothing donated by StEB Köln. All deliveries for 2022 have been completed; those for 2023 are being processed.

The supply of emergency equipment was complemented by technical exchanges and workshops on how to use emergency generators and presentations by the German operators of their emergency concepts and plans (blackout scenarios) e.g. how to identify the most important equipment or how to organise the workforce and workflows in the case of an emergency.

Outcome: The outputs (emergency deliveries) for 2022 are complete, and deliveries for 2023 are expected to be completed shortly. On the operational capacity side, all Ukrainian operators were able to plan ahead on how to react when power cuts occur and to keep their services running when they happened. For example, in Lviv, rocket attacks destroyed the electrical supply stations for the water supply pumping stations in Lviv. Thanks to the generators delivered by the WOP partners, Lvivvodokanal was able to maintain water supply to the city despite the resulting power cuts.

For German colleagues, the exchanges with Ukrainian colleagues around blackout scenarios provided a new perspective on how things are done in Germany. For example, a goal in Ukraine to save 10% of electricity use led to StEB Köln considering how and where the utility can save electricity in its operations.

- **Enhanced knowledge and skills:** Employees from Lviv, Nadvirna and Ternopil have a better understanding of the emergency concept.
- **Increased Motivation:** Ukrainian personnel was motivated by the partnership efforts of their German partners to continue their work despite the tremendous war-circumstances.
- **Applied new knowledge and skills:** The employees of the plants in the three municipalities are able to operate the plants with the help of emergency generators, machines, pumps, frequency converters and the corresponding accessories.
- **Better equipment/infrastructure:** The supply of emergency power generators and other auxiliary equipment helps to ensure that the water and sewage supply to the population can continue.

3.2.2 Basic training courses to female employees

Challenge: Faced with the inability of male staff to travel abroad, supporting female staff has become a focus of solidarity activities in 2023.

Goal: The aim of this work package is to maintain thematic collaboration via female colleagues in the Ukrainian partner utilities. A first step for this has been to support female employees in their technical roles through short term training courses and site visits of German partner operator infrastructure.

Progress to date: The training support was originally conceptualised as a training of trainers, but because views on how this could be realised differed amongst partners, a decision was taken to organise a less ambitious programme in the form of short training courses and on-site visits. All related activities were carried out in Germany in May / June 2023. The first course was a 2-day training on the 'basics of wastewater management for non-water managers'[1] run by DWA (German Association of Water, Wastewater and Solid Waste Management); the course was attended by 11 Ukrainian colleagues from five[2] Ukrainian WOP operators of the German Utility Platform, followed by on-site visits of a wastewater treatment plant in Dresden. The second course was a 3-day laboratory course organised by SEDD. Eight female staff from across the same five Ukrainian operators participated. The participation outside the SEDD-coordinated WOP was facilitated by Ukrovodokanalekologiya with the aim to achieve synergies and enable wider networking across all Ukrainian WOP partners. Participants commented in feedback forms that they found the DWA course and visit to the wastewater treatment plant in Dresden interesting and helpful. Colleagues who participated in the laboratory course commented that they enjoyed being able to practically apply the new knowledge the gained as part of the course.

Outcome: As a result of the training courses, female staff have increased their understanding of the technical skills and equipment needed to run a modern laboratory. In addition, the joint participation of employees from different Ukrainian utilities also led to further knowledge exchange with colleagues working on the same topic e.g. on how to undertake specific tariff calculations.

- **Enhanced knowledge and skills:** Ukrainian employees have improved their professional skills on how to run a laboratory.

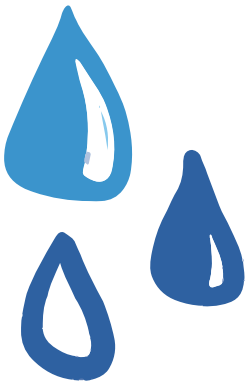
1 *In German: Grundlagen der Abwasserwirtschaft für Nicht-Wasserwirtschaftler*
2 *Including participants from Chernhivvodokanal and Miskvodokanal supported by Oldenburg-Ostfriesischer Wasserverband.*

Ukrainian participants during an internship together with the lecturer Steffen König as part of the laboratory course of the DWA regional association Saxony-Thuringia in Dresden | 06/2023

Photo: Oksana Kharyshyn

3.3 Thematic WOP Nadvirna – Ternopil – Ukrainian water and wastewater association

The third results area in this WOP relates to thematic work with Nadvirnavodokanal and Ternopilvodokanal, and to topics of common interest facilitated by Ukrovodoekologyia. On the German side, SEDD coordinates and supports all thematic activities. At the start of the partnership WOP support foresaw technical advice on sewage treatment plant construction plans for both operators. These exchanges are being finalised for both operators, but due to the ongoing war, they will not immediately feed into adjustments to construction plans because no investment decisions will be taken in the immediate future. Instead, the intention is to help the operators prepare themselves for future investments and for writing funding proposals.



3.3.1 Recommendations on Nadvirnavodokanal wastewater treatment plant construction

Challenge: Nadvirnavodokanal currently uses an industrial wastewater plant from a private company that is not fully capable of treating waste water. The operator has developed technical plans to construct a wastewater treatment facility and would like to receive technical feedback from SEDD on the robustness of the plans, including on the design of a biological cleaning process that staff in Nadvirna is not yet familiar with and the extent to which the plans are in line with European standards and regulations.

Goal: The aim of the collaboration is to put the utility in the best possible starting position for potential future investments.

Progress to date: Construction plans were shared and an expert from Technische Universität Dresden, a German university with expertise in the water sector. They provided feedback on the design, its alignment with European legislation and proposed adjustments. In November 2023, the report was in the process of being translated into Ukrainian. A feedback from representatives of Nadvirna and a related decision about the adjustments to construction plans was pending.

Outcome: The output of providing practical recommendations has almost been completed. Nadvirnavodokanal plans to use the advice to update their technical plans. After the war, they plan to obtain the necessary investment through national means and international reconstruction support.

- **Enhanced knowledge and skills**: Employees in Nadvirna are better informed about the potential weaknesses of the existing construction plans.

3.3.2 Recommendations on Ternopilvodokanal's wastewater treatment plant expansion

Challenge: Ternopilvodokanal is planning the expansion of a new wastewater treatment plant and has already purchased some equipment for this. The utility would like to receive technical feedback on the construction plans and on whether they comply with European standards and regulations. Goal: The aim of the collaboration is to put the utility in the best possible starting position for potential future investments.

Progress to date: A discussion on the expansion plans was facilitated between SEDD and Ternopilvodokanal in a meeting in June 2023. Open questions included whether to continue planning during the war period and what population values (decisive for the assessment basis) should be taken into consideration for planning. A SEDD engineer is planning to review the expansion plans and provide recommendations.

Progress to date: Unfortunately, the technical advice on wastewater treatment plant reconstruction plans of Ternopilvodokanal waits for further notice due to lack of resources. Ternopilvodokanal aims to revise its technical plans in accordance with these technical recommendations. The utility hopes that technically robust plans will help it attract the necessary investment after the war.

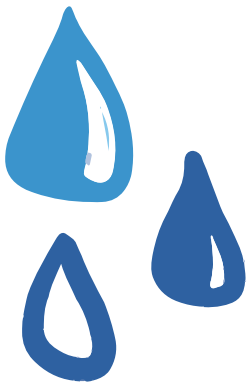
3.3.3 Facilitating a partnership on sector rules and regulations

Challenge: The water and wastewater operator association Ukrovodokanalekologiya approached SEDD for advice on standardising and upgrading Ukrainian regulations.

Goal: As this topic cannot be covered by SEDD, the aim within this WOP was to identify a suitable German counterpart to organise further technical exchanges.

Progress to date: By December 2023, the topic was initially explored with DWA and with the Bavarian state office for the Environment, which implements a similar project in Poland. After these first exploratory exchanges, contacts were established with the German Water Partnership (GWP) which agreed to set up a German-Ukrainian collaboration to help modernise relevant Ukrainian regulations based on existing rules and regulations in Germany.

Outcome: The topic has been taken on by the relevant German counterpart at the level of the association and can now be properly covered going forward.



4. PARTNERSHIP STRENGTH AND LESSONS LEARNED

This section documents the WOP participants' perceptions on the evolution and overall partnership strength based on an assessment of the partnership design, roles and responsibilities, meeting and teamwork and overall levels of trust.

Overall, the partnership is strong across the WOP, with some room to grow further. Participants felt that the partnership has grown over time despite significant obstacles to collaboration namely COVID-19 at the start of the partnership, a language barrier amongst participants requiring the presence of interpreters for communication and the outbreak of the war, which prevented travelling and forced partners to significantly adjust thematic work areas. At the same time, the swift mobilisation on the German side at the outbreak of the war to support Ukrainian colleagues with emergency equipment also strengthened the partnership. Given the strong barriers to collaboration in the WOP, the presence of Volodymyr Motyl, a Ukrainian consultant and local expert, helped to solve daily problems and to further grow the partnership. Going forward, it was felt that having someone permanently present in the Ukraine would further facilitate collaboration. Another factor affecting the WOP is the large number of partners (three in Germany and four in Ukraine). Whilst there was an expectation that there would be synergies, work in practice revealed that some topics yield better results via bilateral collaboration.

In terms of the **partnership design and set-up**, most participants felt that the goals were clear and that partners worked well together to achieve them. Some thought that, in future, goals could still be more clearly defined and be made more concrete. Others mentioned that some partners had high expectations towards the WOP e.g. in that it would provide financial means towards structural investments and that, in future, a conversation around expectations would be helpful to make sure everyone was on the same page. Similarly, some felt that there was still an expectation on the side of some Ukrainian partners that the role of the German partner was to replicate their model whilst the German partner felt it was there to provide insights, which, via collaboration, would lead to the Ukrainian partner taking the lead in introducing changes.

When it comes to **roles and responsibilities**, participants explained that these were well defined and it was clear to partners who was working with whom on what topic despite it being a large WOP with several partners. WOP participants also felt that there was generally a good representation of competent personnel in thematic meetings, although, for one Ukrainian company, that representation tended to concentrate around few people, which sometimes slowed down communication.

On the topic of **meetings and teamwork**, different dynamics unfolded across thematic working groups. For example, on asset management, the team set up regular bi-weekly calls and developed a productive way of working together. Members are highly motivated and progress their tasks between meetings. There is room for the Ukrainian partner to more proactively set the agenda. In the water production working group, exchanges evolved around different topics. Typically, Lvivvodokanal asked questions, which were answered in detail by BWB colleagues. Exchanges evolved around a set of sub-topics and meetings were less frequent. The inability of Ukrainian colleagues to visit Germany and of German colleagues to visit Ukraine hampered the development of close ties and deeper technical exchanges but it was still felt that there was good teamwork and, that progress was made. Another factor affecting the productivity of working together was that each Ukrainian partner organisation had unique needs and synergies expected around working together on specific topics did not materialise. A lesson for the future is that one-to-one mentoring is more effective than working as a group.

All participants felt that there was a good level of **trust** amongst partners. The prompt and generous emergency supply support from German partners at the outbreak of the war was key in developing closer ties and Ukrainian partners expressed their gratitude towards their German counterparts for the support provided. Several participants expressed that they developed strong personal relationships, helped by the personality of the interpreter who facilitated personal exchanges alongside technical ones. The inability to travel was given as an obstacle towards developing deeper levels of trust.

Volodymyr Bilynskyy visually showing how Ukrainian and German operators work hand in hand at the Networking Event in Stuttgart | 05/2022

Photo: Engagement Global

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StEB Köln (2023): Arbeitsplan Asset Management

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