

Final Report - Post Delivery Assessment of Water Sector Project Impacts – Khujand Water Project

European Bank for Reconstruction and
Development

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TABLE OF ABBREVIATIONS

CDP	Corporate Development Program
DAC	Development Assistance Committee
DCC	Development Coordination Council
EBRD	European Bank for Reconstruction and Development
FOPIP	Financial and Operations Performance Improvement Program
IFRS	International Financial Reporting Standards
KII	Key Informant Interview
KMK	Khojagii Manziliyu-Kommunali (State Unitary Enterprise)
KPI	Key Performance Indicator
KWC	Khujand Water Company
M&E	Monitoring and Evaluation
MEWR	Ministry of Energy and Water Resources
NDS	National Development Strategy
NRW	Non-Revenue Water
OECD	Organization for Economic Cooperation and Development
PIU	Project Implementation Unit
PSA	Public Service Agreement
SES	Sanitary Epidemiological Control Services
SPP	Stakeholder Participation Program
TA	Technical assistance
TI	Transition Impact
WSS	Water supply and sanitation
WUC	Water User Committees

SECTION 1 INTRODUCTION

The European Bank for Reconstruction and Development (EBRD) and the State Secretariat for Economic Affairs (SECO) have engaged DHInfrastructure to conduct a post-delivery assessment of two water sector projects in Tajikistan—Khujand Water Supply Improvement Programmes, Phases I, II and III (the “Khujand Water Project”), and North Tajik Water Rehabilitation I and II (the “North Tajik Water Projects”). This report will refer to all interventions assessed as “the Projects”. The Projects involve “hard” infrastructure investments and “soft” measures, which include technical assistance to improve post-signing project implementation, future infrastructure ownership, and stakeholder engagement.¹ The assessment aims to draw lessons from the Projects’ implementation and offer recommendations for the future design and execution of water supply and sanitation (WSS) sector projects in the country.

We assessed the Projects against the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee (DAC) criteria of relevance, coherence, efficiency, effectiveness, impact, and sustainability. In doing so, we used the evaluation questions proposed in our Inception Report for this assignment, along with SECO’s Assessment Grid for project and program evaluations.

The Khujand Water Project’s infrastructure investments included the rehabilitation of the water supply assets (replacing outdated distribution pipes and transmission mains, rehabilitating wells and boreholes, and procuring pumps), installing bulk and customer water meters, rehabilitating and modernizing the existing wastewater treatment plant (WWTP), and procuring laboratory equipment. The technical assistance components included measures such as implementing the Project Implementation Unit (PIU), the Financial and Operations Performance Improvement Program (FOPIP), the Stakeholder Participation Program (SPP), the Corporate Development Program (CDP), and the City Support Program for the City of Khujand to sign a Public Service Agreement (PSA).²

This Report presents the assessment’s main findings for the Khujand Water Project, lessons learned from the Project, and recommendations to EBRD and SECO for future engagement in Tajikistan’s WSS sector. The report is structured as follows:

- **Section 2—Context for the Assessment:** This section presents context on Tajikistan, Khujand, and the country’s WSS sector.
- **Section 3—Assessment Approach:** This section details the assessment scope and approach, as well as its main limitations.
- **Section 4—Findings:** This section presents the assessment findings for each evaluation question. Evaluation questions are grouped by OECD-DAC criterion.
- **Section 5—Conclusions and Lessons Learned:** This section outlines the assessment conclusions based on the overall findings.

¹ “Post signing” refers to the formal stage at which a commitment is made by the Client to receive the Bank’s financing, conditions etc. and progress the project to implementation.

² Appendix E presents a summary of all outputs related to the Khujand Water Project.

- **Section 6—Recommendations:** This section presents the assessment team's recommendations for EBRD's and SECO's future interventions in Tajikistan's WSS sector.

SECTION 2 CONTEXT FOR THE ASSESSMENT

This section provides context on Tajikistan (Section 2.1), the city of Khujand (Section 2.2), and the WSS sector in Tajikistan and in Khujand specifically (Section 2.3).

2.1 ABOUT TAJIKISTAN

Tajikistan is a landlocked country in Central Asia bordered by Afghanistan to the south, Uzbekistan to the west, Kyrgyzstan to the north, and China to the east. It spans 142,326 km² between latitudes 36° and 41° N and longitudes 67° and 75° E. Tajikistan is a mountainous country, with altitudes ranging from 300 to 7,495 meters above sea level, featuring two principal ranges: the Pamir and Alay Mountains. The country contains more than 900 rivers longer than ten kilometers, including the Panj, Amu-Darya, and Sir-Darya Rivers.³ Tajikistan's rivers account for 60 percent of all hydro resources in Central Asia.⁴ Tajikistan has continental, subtropical, and semi-arid climates, with some desert areas.

As of 2024, Tajikistan had an estimated population of 10.3 million and a population density of 72 people per square kilometer. The country has a predominantly rural demographic, with the lowest urbanization rate in the region at 27 percent.⁵ Tajikistan consists of four administrative divisions: Sughd Province, Khatlon Province, the autonomous province of Gorno-Badakhshan, and the Districts under Tajikistan Central Government Jurisdiction (formerly known as Karotegin Province).

Tajikistan declared independence from the Soviet Union in 1991, followed by a civil war lasting from May 1992 to June 1997. Since the end of the war, Tajikistan has experienced rapid social and economic progress, with annual GDP growth averaging close to 7.1 percent.⁶ Strong growth, higher incomes, and remittances have contributed to a sharp decline in poverty. Between 2015 and 2022, the national poverty rate decreased from 25.7 percent to an estimated 13.4 percent. Despite this progress, Tajikistan remains the poorest economy in Europe and Central Asia.⁷

2.2 ABOUT KHUJAND

Khujand is the capital of Sughd Province and the second largest city in Tajikistan, with a population of 181,600 people.⁸ The city is situated along the Syr Darya River and at the entrance to the Fergana Valley. Khujand lies

³ World Bank, "Tajikistan - Water Supply and Sanitation Investment Project (English)," accessed March 11, 2024, <http://documents.worldbank.org/curated/en/932351655916461178/Tajikistan-Water-Supply-and-Sanitation-Investment-Project>

⁴ United Nations, "Water for Sustainable Development," accessed March 10, 2024, <https://www.un.org/en/chronicle/article/water-sustainable-development>.

⁵ World Population Review, "Tajikistan Population," accessed March 11, 2024, <https://www.worldometers.info/world-population/tajikistan-population/#:~:text=The%20current%20population%20of%20Tajikistan,of%20the%20total%20world%20population.>

⁶ World Bank, "Tajikistan MPO," accessed on March 12, 2024, <https://thedocs.worldbank.org/en/doc/d5f32ef28464d01f195827b7e020a3e8-0500022021/related/mpo-tjk.pdf>

⁷ World Bank, "Poverty and Equity Brief. Tajikistan. April 2023," accessed on March 8, 2024, https://databankfiles.worldbank.org/public/ddpext/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_TJK.pdf

⁸ Tajik Statistical Agency, 2019.

about 300 meters above sea level and has a temperate semi-arid climate with hot, dry summers and cold, snowy winters.⁹ Precipitation is more common during spring and winter.

Khujand's economy is primarily driven by light industry, food production, and machine building. The city manufactures a variety of products, including furniture, clothing, shoes, trade machines, elevators, stone tiles, canned goods, bakery items, meat products, beverages, and wine. Notable industrial enterprises in Khujand include the Khujand Canning Plant, La'l Glass Works, Nassochii Khujand, Khujand Slick Works, and the Saihun Distillery.¹⁰

2.3 WSS SECTOR OVERVIEW

Tajikistan's WSS sector is vital to the country's economy. It is essential for household consumption, agriculture, forestry, fishing, and electricity generation. However, the sector faces considerable challenges, such as high losses, limited access to drinking water, and underinvestment in infrastructure; all of which hinder private sector growth. This section presents an overview of Tajikistan's water sector challenges (Section 2.3.1), the institutional and legal framework for the sector (Section 2.3.2), and a description of Khujand's water sector (Section 2.3.3).

2.3.1 SECTOR CHALLENGES

Water distribution and wastewater collection systems in Tajikistan date back to the 1960s. WSS services were neglected following Tajikistan's independence, largely because of a lack of capacity and a shortage of available public funding. In many rural areas, safe drinking water and sanitation services are inaccessible. Approximately 55 percent of the population has access to safely managed water supply services, and only 36 percent of rural residents benefit from piped water supply services. Existing infrastructure frequently fails to accommodate population growth because of its age and capacity limitations.¹¹

Use of water for irrigation and hydropower is also critically important. Irrigation amounts to more than 85 percent of total water withdrawals.¹² Poor water management and decaying infrastructure result in losses of around 60 percent, meaning that only 40 percent of abstracted water reaches crops.¹³ Agriculture remains an essential pillar of the economy, contributing 21 percent of the national GDP. Its heavy dependence on

⁹ World Weather & Climate Information, "Khujand Climate by Month," accessed June 6, 2024, <https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine-Khujand,Tajikistan>

¹⁰ "Город Худжанд — культурный центр Таджикистана. Город Худжанд — культурный центр Таджикистана Г ленинабад таджикской сср," accessed July 10, 2024. <https://bravoplanner.ru/strany/gorod-hudzhand-kulturnyi-centr-tadzhikistana-gorod-hudzhand/>

¹¹ WHO-UNICEF. "Joint Monitoring Programme for WASH – Progress on household WASH 2000–2020," accessed March 11, 2024, <https://www.worldbank.org/en/news/feature/2023/03/22/expanding-access-to-safe-water-in-rural-tajikistan>.

¹² Burt, Charles M, "The Costs of Irrigation Inefficiency in Tajikistan," World Bank, accessed January 24, 2017, <https://documents1.worldbank.org/curated/en/116581486551262816/pdf/ACS21200-WP-P129682-PUBLIC-TheCostsofIrrigationInefficiencyinTajikistan.pdf>

¹³ EBRD, "Tajikistan Diagnostic Country 2020," accessed March 10, 2024, <https://www.ebrd.com/documents/strategy-and-policy-coordination/tajikistan-diagnostic.pdf>

hydropower makes Tajikistan susceptible to climate-induced water level variations, posing challenges to electricity supply, especially during winters.

Repairing and maintaining a highly depreciated and deteriorating system has proven to be fiscally impractical for the Government of Tajikistan (GoT).¹⁴ The country allocates a relatively small portion of its GDP to the WSS sector—around 0.2 percent—which falls well below the regional average of 1.5-2 percent. It has been estimated that the country will require approximately USD 800 million in investment to ensure universal access to safe drinking water by 2030.¹⁵

2.3.2 POLICY, LEGAL, AND INSTITUTIONAL FRAMEWORK

This section provides a brief overview of the governance of Tajikistan’s WSS sector, including its overall strategy and policy, legal and regulatory frameworks, and main institutions.

Strategy and Policy

Three documents currently guide policy and strategy in Tajikistan’s WSS sector. These are described in Table 2.1

Table 2.1: Tajikistan’s Strategy and Policy Documents for the WSS Sector

National Program and Improvement of Safe Drinking Water Supply for the Population of the Republic of Tajikistan 2007-2021 (the “National Program”) (2006)¹⁶	The National Program provides a comprehensive framework and guidelines for the WSS sector, including strategic sector priorities for the GoT. The National Program seeks to rehabilitate the existing water supply system; construct new small-scale and medium-scale water systems; integrate new technologies in drinking water supply; capacity building of drinking water specialists; and promoting better water resource use among the population. The planned investments for improving the provision of safe drinking water to the population of the GoT for 2007-2021 were about USD 294 million. GoT is currently working on the next phase of the National Program for 2030.
National Program for Reforming the Water Sector of the Republic of Tajikistan for 2016-2025 (2015)¹⁷	This program aims to decentralize the management system and share operational functions between ministries, agencies and non-governmental organizations, based on integrated water resources management principles. It sets out the key national principles for water resources management, including the segregation of policy and operational functions, alignment of water management with hydrological boundaries, and decentralization of service delivery functions. ¹⁸

¹⁴ Ibid.
¹⁵ Ibid.
¹⁶ Правительство Республики Таджикистан, “Программа улучшения обеспечения населения Республики Таджикистан чистой питьевой водой на 2007-2021 годы,” accessed on May 7, 2024, http://www.portali-huquqi.tj/publicadliya/view_qonunhovview.php?showdetail=&asosi_id=7244
¹⁷ Правительство Республики Таджикистан, “Постановление О Программе Реформы Водного Сектора Республики Таджикистан На 2016-2025 Годы,” accessed on July 26, 2024. <https://faolex.fao.org/docs/pdf/taj189751.pdf>
¹⁸ World Bank, “Project Appraisal Document. Tajikistan Water Supply and Sanitation Investment Project,” accessed May 2, 2024, <https://documents1.worldbank.org/curated/en/932351655916461178/pdf/Tajikistan-Water-Supply-and-Sanitation-Investment-Project.pdf>

National Development Strategy (NDS) 2016 to 2030 (2016)¹⁹

The NDS provides a roadmap for addressing critical development challenges in Tajikistan taking into consideration GoT commitments to the United Nations Sustainable Development Goals. The strategy prioritizes the development of human capital and social inclusion by enhancing access to high-quality education, health, and water supply. According to the NDS, regulatory and policy frameworks need to be strengthened, with a focus on the needs of marginalized groups, particularly women and girls. Investment projects in the water sector will be promoted to finance the construction and rehabilitation of water supply and sewerage systems, as well as expanding urban water networks and on-farm water supply systems. The NDS also foresees expanding international cooperation to improve national capacities, including technologies for water harvesting, desalination, and wastewater treatment. Tariff increases are also seen as a way of attracting investments and facilitating public-private partnerships, while ensuring financial sustainability and affordability of housing and public services for all.

Legal and Regulatory Framework

Table 2.2 summarizes Tajikistan’s main laws and regulations for the WSS sector.

Table 2.2: Tajikistan’s Laws and Regulations Governing the WSS Sector

Laws and Regulations	Description
Tajikistan’s Constitution (last amended in 2003)²⁰	Article 13 of Tajikistan’s Constitution states water is the exclusive property of the State, and the State guarantees its practical use and protection in the nation’s interests.
Water Code (the “Code”) (last amended in 2020)²¹	This is the primary legal document governing Tajikistan’s water resources. It contains regulations on sustainable water management, rational use of water to benefit the population and the national economy, protecting water bodies from pollution and depletion, and safeguarding the rights of water users. The Code outlines the responsibilities of state bodies involved in water resource management, including planning, regulation, and monitoring. In 2020, the Code underwent a revision introducing several new clauses to decentralize water systems management. Additionally, it includes mandates for local authorities and the promotion of public-private partnerships. ²²

¹⁹ Government of Tajikistan, “National Development Strategy of The Republic Of Tajikistan For The Period Up To 2030.” Accessed July 26, 2024. http://nafaka.tj/images/zakoni/new/strategiya_2030_en.pdf.
²⁰ Правительство Республики Таджикистан, “Конституция Республики Таджикистан,” accessed May 7 2024. <https://faolex.fao.org/docs/pdf/taj127450E.pdf>
²¹ Government of Tajikistan, “Water Code of the Republic of Tajikistan,” accessed May 6,2024. <https://faolex.fao.org/docs/pdf/taj200729E.pdf>
²² UNICEF, “The Development of Sustainable Water and Sanitation Systems in Rural Areas of the CAREC Region.Pdf, ” Accessed July 25, 2024.<https://www.unicef.cn/media/20411/file/The%20Development%20of%20Sustainable%20Water%20and%20Sanitation%20Systems%20in%20Rural%20Areas%20of%20the%20CAREC%20Region.pdf> .

Law on Drinking Water Supply and Sanitation (2010) ²³	The Law on Drinking Water Supply and Sanitation was adopted in 2010. It provides the fundamental human right principle to access safe drinking water and sanitation services. This law was replaced with the Law on Potable Water Supply and Sewerage (2019).
Law on Potable Water Supply and Sewerage (2019) ²⁴	The Law on Potable Water Supply and Sewerage provides legal guarantees for access to safe water and sanitation as a human right, promotes diverse forms of ownership and management, decentralization, and the strategic importance of water supply systems. Ownership of the water supply can belong to the state, individuals, or legal entities.
Law on Associations of Water Users (2020) ²⁵	The Law on Associations of Water Users establishes a regulatory framework aimed at promoting sustainable management practices through the collective efforts of water user associations. The law includes efficient use of reclamation systems, rational use of irrigation water, protection and improvement of land reclamation, knowledge enhancement of members, and maintenance of outdated dams, canals and pumping stations. ²⁶

Institutions

State entities involved with Tajikistan's WSS sector have specific responsibilities related to price setting, water resource management, environmental protection, infrastructure development, and monitoring compliance with technical standards. However, there is some overlap in the roles and responsibilities of some of these entities.²⁷ The most relevant organizations to the WSS sector are described below:

- The **Ministry of Energy and Water Resources (MEWR)** was formed from the restructuring of the Ministry of Land Reclamation and Water Management in 2013. MEWR is responsible for policy and regulation in the water sector, and is also in charge of national strategies and programs.

²³ Правительство Республики Таджикистан, "ЗАКОН РЕСПУБЛИКИ ТАДЖИКИСТАН О ПИТЬЕВОЙ ВОДЕ И ПИТЬЕВОМ ВОДОСНАБЖЕНИИ," accessed July 25, 2024, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC170868>

²⁴ Правительство Республики Таджикистан, " ЗАКОН РЕСПУБЛИКИ ТАДЖИКИСТАН О ПИТЬЕВОМ ВОДОСНАБЖЕНИИ И ВОДООТВЕДЕНИИ," accessed July 25, 2024, <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC189845>

²⁵ Правительство Республики Таджикистан, "ЗАКОН РЕСПУБЛИКИ ТАДЖИКИСТАН ОБ АССОЦИАЦИИ ВОДОПОЛЬЗОВАТЕЛЕЙ," accessed July 25, 2024, <https://faolex.fao.org/docs/pdf/taj201997.pdf>

²⁶ Ахбори Маджлиси Оли Республики Таджикистан, "ЗАКОН РЕСПУБЛИКИ ТАДЖИКИСТАН Об ассоциации водопользователей," accessed July 25, 2024 https://mewr.tj/wp-content/uploads/files/Zakon_o_AVP.pdf

²⁷ UNICEF, "The Development of Sustainable Water and Sanitation Systems in Rural Areas of the CAREC Region.Pdf," accessed July 25, 2024, <https://www.unicef.cn/media/20411/file/The%20Development%20of%20Sustainable%20Water%20and%20Sanitation%20Systems%20in%20Rural%20Areas%20of%20the%20CAREC%20Region.pdf> .

- The **State Unitary Enterprise (Khojagii Manziliyu-Kommunali—KMK)** was established in 2001 and serves as the national holding company responsible for delivering municipal services, including water supply and wastewater services. Operating as an administrative, executive, and regulatory agency, KMK holds responsibilities within the WSS sector spanning policymaking, regulation, sector planning, and performance monitoring. KMK oversees 34 subsidiaries known as “vodokanals” (municipal water utilities), each operating with financial autonomy. The vodokanals are tasked with managing WSS services across the country’s urban and rural areas.²⁸ The relationship between KMK and its subsidiaries are governed by agreements that stipulate vodokanals must contribute between 5 and 8 percent of their revenue to KMK. These earnings cover management expenses, technical assistance, and facilitate knowledge exchange and representation in state agencies.^{29,30}
- The **Committee for Environmental Protection** oversees the protection and sustainable use of water resources. It designs and implements measures aimed at restoring and replenishing water resources.
- The **Main Directorate for Geology under the GoT** carries out research on water resources and oversees the regulation of surface waters.
- The **Ministry of Health and Social Protection** establishes policies and guidelines to ensure the sanitary and epidemiological safety of the population. It coordinates efforts across various governmental bodies, organizations and enterprises to ensure compliance with health standards and regulations. Additionally, it raises awareness among the population and provides training on public health issues.
- The **Antimonopoly Agency** is the key entity responsible for setting tariffs in the WSS sector. It also verifies the application of tariffs and resolves tariff disputes.
- **District administrations (khukumats) and sub-district administrations (jamoats)** develop and implement local sectoral programs and actions for construction, maintenance, and development of drinking WSS systems.

2.3.3 WSS SECTOR IN KHUJAND

Khujand's water supply relies on four groundwater intake facilities with a total daily capacity of 238,000 cubic meters.³¹ These groundwater resources are replenished by infiltration from the Syr Darya River. Treated water from the Khoje Bakirgom Canal is also used in addition to groundwater resources. Water treatment primarily involves chlorination in bulk reservoirs. There are 40 booster pumps installed within the city to facilitate water transfer to higher elevations. Khujand also has a regional wastewater treatment plant, originally constructed in the 1970s.³²

Until 2004, a substantial portion of Khujand’s population had limited or no access to piped water. Where water supply was available, services were interrupted for long periods, posing serious risks to health and

²⁸ In Dushanbe and Khujand, the responsibility for the provision of the drinking water lies within the municipal government. Both cities have set up a State Unitary Enterprise to carry out this responsibility. The Dushanbe and Khujand Water Company operate autonomously from the local government (whereby the municipalities do act as guarantor).

²⁹ Corporate Development Programme of SUE KMK’s Subsidiary Water Supply and Sewerage Company of Towns and Districts of Region 1 of Sughd Region. Final Report. February 2017, pages 11-23.

³⁰ Corporate Development Programme of SUE KMK’s Subsidiary Water Supply and Sewerage Company of Towns and Districts of Region 1 of Sughd Region. Final Report. February 2017, pages 11-23.

³¹ World Bank, “Prefeasibility Report of KHUJAND City Vodokanal,” Bangalore: The Energy and Resources Institute (2023) 4.

³² World Bank, “Prefeasibility Report of KHUJAND City Vodokanal,” Bangalore: The Energy and Resources Institute. (2023) 3

hygiene. Physical losses were high due to leaking pipes, while an inefficient, outdated pumping system made it difficult to deliver water to high floors of multi-family apartment buildings.

SECTION 3 ASSESSMENT APPROACH

This section summarizes the assessment's scope and approach (Section 3.1) and the limitations of the study (Section 3.2). Appendix A includes a full description of our methodology for this assessment.

3.1 SCOPE AND APPROACH

Scope

This main objective of this assignment was to conduct a post-delivery assessment of two water sector interventions in Tajikistan—the Khujand Water Project and the North Tajik Water Projects. The objectives of the assessment included the following:

- Confirmation of the tangible deliverables (investment outputs and outcomes) compared with those anticipated upon project signing and including validation of the Transition Impact (TI) qualities achieved against those expected.³³
- An independent assessment of the effectiveness of the post-signing technical assistance assignments of the two water sector projects implemented in Tajikistan over the last 10 years (Khujand Water Project and North Tajik Water Projects) including a review of the so called “Khujand Model” and an opinion on whether the expectations of capacity building at each project signing stage were realistic.³⁴
- Presentation of emerging evidence of the overall project impact in terms of the benefits realized and sustainability of the reforms that support infrastructure investments.
- Formulation of recommendations which may be applied in ongoing or future urban drinking water and sanitation projects.
- Determination of the lessons learned in implementing projects and make sound recommendations for future projects.
- Recommendations on the more systemic measures required to secure long-lasting transformation of utilities in Tajikistan.

To achieve these objectives, we assessed the Khujand Water Project against the OECD-DAC criteria of relevance, coherence, efficiency, effectiveness, impact, and sustainability.³⁵ In doing so, we used the evaluation questions proposed in our Inception Report and the Assessment Grid for project/program

³³ Transition impacts refer to the effects and changes projects or investments bring in transitioning economies toward open, market-oriented systems. The assessment involves evaluating how projects contribute to specific qualities that characterize a well-functioning market economy, such as competitiveness, good governance, environmental sustainability, inclusivity, resilience, and integration. The analysis involves scoring projects based on their contribution to transition qualities to ensure positive impacts across all aspects of the economy without generating adverse effects. The assessment considers intrinsic project value and contextual factors, such as country development levels and strategic priorities.

³⁴ Projects that combine infrastructure investments, corporate development and stakeholder participation programs.

³⁵ The OECD has developed standardized definitions for six evaluation criteria: relevance, coherence, effectiveness, efficiency, impact, and sustainability. These criteria are intended to ensure consistent, high-quality evaluations. They offer a normative framework for assessing the merit or worth of any intervention, be it a policy, strategy, program, project, or activity. These criteria form the foundation upon which evaluative judgements are conducted.

evaluations of SECO interventions. These evaluation questions structure our findings (see Section 4), and provide the basis for our conclusions (Section 5) and recommendations (Section 6).

Approach

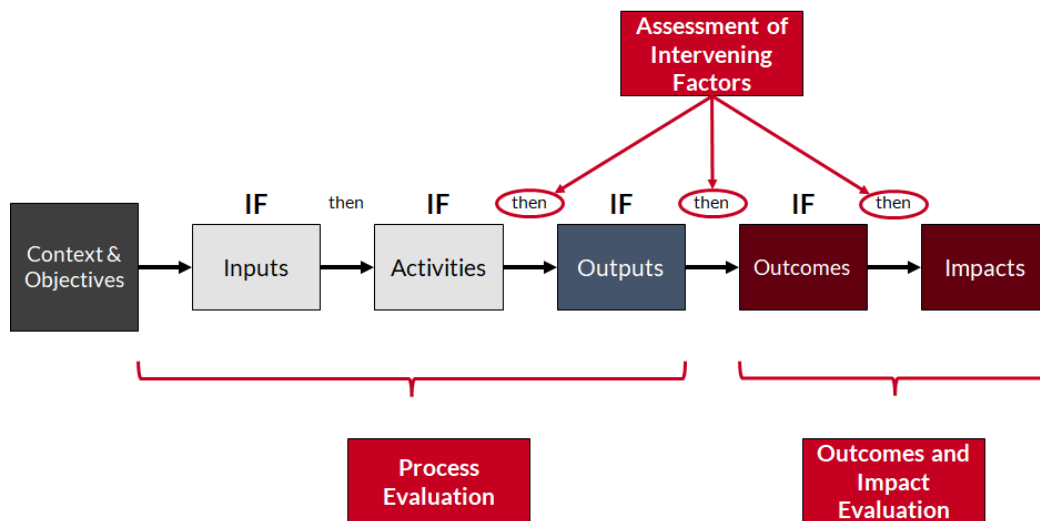
This assignment follows a formative assessment approach, so our objective was to identify lessons learned that contribute to better operational outcomes and impacts for EBRD's and SECO's future interventions in Tajikistan's WSS sector. Reaching this objective, however, required elements of other evaluation approaches, including:

- **Process evaluation** to assess whether the projects were implemented as intended and whether the intended outputs were delivered. The principal purpose of this evaluation component was to determine whether outputs were delivered fully or partially. For physical investments, this included an assessment of whether physical works were delivered as intended. We reviewed consultant reports and made site visits to the Khujand Water Company's (KWC) facilities. For technical assistance, it included an assessment of the consultant deliverables (whether they were delivered in line with consultant reports) and key informant interviews (KIIs) with KWC staff and directives. For this component of the evaluation, we also aimed to comment on the quality, accuracy, and comprehensiveness of the information used to monitor and evaluate the relevant EBRD's and SECO's projects. However, EBRD and SECO internal documentation was not available during this evaluation (see Section 3.2), so we were not able to assess internal monitoring and evaluation mechanisms.
- **An outcome and impact assessment** to identify the (shorter term) outcomes, (longer term) impacts, intended or unintended, primary or secondary, that EBRD's and SECO's projects contributed to. This evaluation component drew on the findings from the process evaluation described above, the theory of change (or *logframes*), and KWC's monitoring data. We then compared planned investment outputs, targets, and projected outcomes with actuals. Information sources included available documentation, site visits, and KIIs. This approach was used to assess EBRD's and SECO's activities against the OECD-DAC effectiveness and impact criteria. In evaluating outcomes, we used a combination of the following:
 - Data on outcome indicators. Where the nature of the activities and data availability permit, we used a simple "before and after" evaluation design to compare the values of indicators before and after the project.
 - Triangulation of data sources with other information, including KIIs with stakeholders and donor staff, beneficiaries, and accounts from EBRD's and SECO's documents or other third-party reports.
- **Assessment of intervening or contributing factors.** Whereas an assessment of intervening factors is not typically considered to be a standalone evaluation approach, such an assessment was critically important to understanding why certain internal or external factors may have caused the Khujand Water Project to be more or less effective, impactful, and sustainable. The distinction between internal and external factors we used is as follows:
 - Internal factors relate to how EBRD and SECO identified and implemented activities. These are factors over which they had considerable control. These included, for example: data availability, procurement processes, transparency and oversight, timely implementation, costs, or contractor quality and supervision.

- External factors are characteristics of the environments in which EBRD and SECO operate, and over which they had less or no control.

We used the results of the process evaluation, the evaluation of outcomes and impacts, and the intervening factors assessment to identify the broader lessons learned from EBRD's and SECO's projects. We assessed contribution using a standard logical framework (logframe) and results chain to analyze the causal links between inputs, activities, outputs, outcomes, and impacts. Figure 3.1 illustrates how the different types of assessments named above coincide with the generic logframe. The figure also shows the relationship between the focus of our process evaluation (inputs, activities, and outputs), our outcomes and impact assessment (more generally, results), and our assessment of intervening factors.

Figure 3.1: Generic Logframe and Analytical Methods Proposed



Appendix B contains the specific logframes we developed for the Khujand Water Project, based on logframe tables provided by EBRD. We did not receive logframes for the Khujand Project Phases I and II but developed suggested draft theories of change based on project documentation and our understanding of the project. We used these logframes to assess the contribution of EBRD's and SECO's interventions in Khujand to project outcomes and impacts.

3.2 LIMITATIONS

The main limitations of this evaluation were the availability of information and the ability to attribute any outcomes or impacts to EBRD's and SECO's interventions. These key limitations are detailed below.

The EBRD team clearly flagged, during the inception phase, the challenge of information availability related to the Khujand Water Project. This is likely because of the age of the project (for example, Phase I took place between 2004 and 2008), and because EBRD's monitoring and evaluation (M&E) frameworks have evolved over time. Our experience during the evaluation confirms that the availability of reports and data made it more difficult to answer some of the evaluation questions as robustly and accurately as we might have liked.

A key limitation to our work was the limited availability of internal EBRD and SECO project documentation. Internal reporting such as progress reports, post-delivery evaluation reports, review memorandums, and

Terms of Reference (ToR) for capacity building components are valuable in understanding planned outputs and outcomes, project implementation details, milestone achievements, initial assessments of effectiveness and efficiency, and reasons for project changes or delays. Table 3.1 summarizes the availability of documents listed the ToR as potentially available for this assessment. Appendix C lists the documents we received.

Table 3.1: Documentation Availability

Document	Availability
EBRD (internal) Final Review Memorandums	Not available
EBRD Post-Delivery Evaluation Reports	Not available
Semi-annual EBRD Progress Reports	Not available
Project Logframes	Not available for Khujand Water Project Phase I and II
Terms of Reference for the post-signing capacity building components	Not available
Interim and final reports (prepared by PIU and CDP consultants)	Available for most interventions, ³⁶ except for: • Khujand Water Project Phase I (FOPIP) • Khujand Water Project Phase II (PIU)

Another important limitation was the responsiveness of some WSS stakeholders during our mission to Tajikistan. We requested but were not able to arrange meetings with the Khujand Mayor's Office, Consumer Unions, Ministry of Energy and Water, and the Antimonopoly Agency. Appendix D includes a list of the stakeholders we met.

Information availability affects what evaluators call “attribution” or “contribution”, namely, the ability to draw plausible causal links between outputs, outcomes, and impacts.³⁷ Attribution was more difficult to assess for impacts than for outcomes and was particularly challenging when evaluating “softer” technical assistance work. Caveats on the plausible causal links identified or not are explicit in each of our Findings sections (see Section 4).

³⁶ Inconsistencies have been observed in the content of the consultant reports reviewed. For example, while we were generally able to identify specific budgets allocated to CDP and SPP activities, such information was not found in the documentation for Phase I of the Khujand Water Project.

³⁷ Attribution and contribution are sometimes used interchangeably, but in evaluator parlance “attribution” typically implies more direct causality between outputs, outcomes, and impacts than “contribution”.

SECTION 4 FINDINGS

This section presents our findings for each of the evaluation questions proposed in our Inception Report. We have grouped our evaluation questions by OECD-DAC criterion—relevance (Section 4.1), coherence (Section 4.2), effectiveness (Section 4.3), efficiency (Section 4.4), impact (Section 4.5), and sustainability (Section 4.6).

4.1 RELEVANCE

The OECD-DAC criterion of relevance refers to the extent to which the objectives of a development intervention are consistent with clients' requirements, country needs, global priorities, and donors' policies.³⁸ To assess the relevance of EBRD's and SECO's activities, we sought to understand whether the interventions' main design elements aligned with the needs and priorities of the target group and the GoT. In addition, we investigated the extent to which the interventions were flexible in responding to changes during their implementation.

4.1.1 TO WHAT EXTENT DO THE CORE DESIGN ELEMENTS³⁹ OF THE INTERVENTIONS RESPOND TO THE NEEDS AND PRIORITIES OF THE TARGET GROUP AND THE GOT?

The core design elements of the Khujand Water Project directly respond to the needs and priorities of KWC and the GoT under the National Program for Improvement of Access to Safe Drinking Water for the Population of the Republic of Tajikistan for 2007 to 2020 (the "National Program").

The 2006 National Program is one of the primary governing documents for Tajikistan's water sector. As outlined in Section 2.3.2, the National Program provides a comprehensive framework and guidelines for action, including strategic sector priorities such as rehabilitating the existing water supply system; constructing new small-scale and medium-scale water systems; integrating new technologies in drinking water supply (including water treatment); capacity building of drinking water specialists; and promoting a culture of water conservation and hygiene practices among the population.^{40,41} According to the National Program, an estimated USD 1 billion was required to enhance nationwide access to safe drinking water, with

³⁸ OECD, "OECD/DAC Network on Development Evaluation - Better Criteria for Better Evaluation: Revised Evaluation Criteria Definitions and Principles for Use," accessed November 23, 2023. <https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf>

³⁹ Including the interventions' objectives, theory of change, structure of the project components, choice of services, and intervention partners.

⁴⁰ SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html> 127; Government of Tajikistan, "Water Sector Reform Programme of the Republic of Tajikistan for the period 2016-2025, approved by the decree of the Government of the Republic of Tajikistan, as of 30 December 2015, #791," accessed May 2, 2024. http://www.portali-huquqi.tj/publicadliya/view_qonunhoview.php?showdetail=&asosi_id=7244

⁴¹ The National Program states there is need to improve the culture of water use and sanitation practices among the population, as well as to increase public participation to impact affordable tariff setting. Water Sector Reform Programme of the Republic of Tajikistan for the period 2016-2025, approved by the decree of the Government of the Republic of Tajikistan, as of 30 December 2015, #791. Accessed May 2, 2024. http://www.portali-huquqi.tj/publicadliya/view_qonunhoview.php?showdetail=&asosi_id=7244

70 percent of the funding intended to be sourced from foreign aid.⁴² The overall objective of EBRD's and SECO's Khujand Water Project was to assist KWC in improving the quality and reliability of the municipal water supply and wastewater infrastructure in Khujand, while also enhancing the financial and operational performance of the utility and fostering public participation in the water sector. Therefore, the objectives of the Khujand Water Project are directly aligned with the GoT's priorities outlined in the National Program.⁴³

At the time of project preparation, aging infrastructure, high water losses, and an inadequate wastewater management system, as described in Section 2.3.3, posed challenges for KWC. EBRD and SECO aimed to help KWC address these challenges through capital investments and management support to rehabilitate the existing water supply and wastewater infrastructure. A PIU was established to support implementation of the project.⁴⁴

A key priority for KWC was to improve its performance by overhauling its financial and operational practices, enabling the utility to make capital investments.⁴⁵ KWC's aging infrastructure and high water losses were contributing substantially to its operation and maintenance (O&M) costs. Increasing revenue collection was essential for KWC, yet poor service quality and reliability were undermining customers' willingness to pay.⁴⁶ Between 2006 and 2008, KWC implemented a 300 percent tariff increase, which, according to EBRD and SECO project consultants, disproportionately affected businesses.⁴⁷ The mayor of Khujand, as highlighted by EBRD and SECO project consultants for Phase I, expressed concerns about customer resistance to higher water and sewerage tariffs. He emphasized that customers would only accept higher charges once the utility could demonstrate efficient investment practices.^{48,49} Furthermore, low salaries at KWC exacerbated staff turnover. These challenges demonstrated the need for a comprehensive approach to addressing operational inefficiencies and ensuring financial sustainability at KWC.⁵⁰ EBRD's and SECO's technical assistance consequently aimed to improve KWC's operational and financial performance by improving creditworthiness,

⁴² The required funding refers to the timeframe of the National Program which is from 2007 to 2020. Extracted from the Financing Section found in the National Program decree. Accessed May 2, 2024. http://www.portali-huquqi.tj/publicadliya/view_qonunhoview.php?showdetail=&asosi_id=7244

⁴³ UNICEF, "The Development of Sustainable Water and Sanitation Systems in Rural Areas of the CAREC Region.Pdf," accessed July 25, 2024. <https://www.unicef.cn/media/20411/file/The%20Development%20of%20Sustainable%20Water%20and%20Sanitation%20Systems%20in%20Rural%20Areas%20of%20the%20CAREC%20Region.pdf>.

⁴⁴ Corporate Solutions, "Khujand Water: Project Preparation and Implementation Support Services and Stakeholder Participation Programme. Final Report," (February 2010), I.1.

⁴⁵ Information was provided by the EBRD/SECO project consultants for Phase I of FOPIP. Extracted from Corporate Solutions, "Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report," (June 2009), Annex A.

⁴⁶ Mentioned by EBRD/SECO project consultants for Phase II Corporate Development Program (CDP); Extracted from Corporate Solutions, "Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report," (June 2009), 16.

⁴⁷ Information was provided by the EBRD/SECO project consultants for Phase I of FOPIP. Extracted from Corporate Solutions, "Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report," (June 2009), Annex A3.

⁴⁸ Ibid.

⁴⁹ Corporate Solutions, "Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report," (June 2009) Annex A.

⁵⁰ Ibid.

reducing water losses, and increasing the utility's bill collection rates, but it also included a broader set of activities to improve on the regulatory framework and strengthen sector institutions.

The Khujand Water Project's technical assistance was implemented across three phases. Phase I introduced the FOPIP, while Phase II and III incorporated the CDP and City Support Program. Further support was also provided through the SPP across all three phases to address public awareness and affordability concerns.⁵¹

FOPIP under Phase I aimed to enhance efficiency and performance at KWC by developing Key Performance Indicators (KPIs) and integrating them into the utility's governance procedures. It also prepared a Performance Improvement Program for the years 2008-2018 to implement operational improvement measures with assistance from specialist consultants.⁵² The City Support Program for Khujand—part of the CDP—focused on tariff reform and aimed to achieve full cost recovery, as well as demand management through pricing, affordability, and transparent tariff design.

KWC's overarching objective was to transition from a Soviet-style municipal enterprise to a sustainable and commercially efficient entity independent of the Municipality of Khujand.⁵³ As part of the FOPIP, the PSA was established to define foundational principles for KWC's institutional framework and formalize relationships between the Municipality and KWC. The PSA delineated responsibilities and coordination mechanisms, emphasizing fiscal discipline, performance accountability, and public oversight.

As mentioned above, implementing a new tariff regime to improve revenue collection was a critical goal for KWC. EBRD's and SECO's SPP was designed to contribute to the development of this system by providing insights into affordability among different community groups.⁵⁴ The SPP aimed to foster public ownership by encouraging water conservation, increasing public participation in service provision, addressing poverty and social issues within tariff structures, and raising public awareness of project implementation and water use-related issues, as outlined in EBRD and SECO project consultant's ToR for the SPP.

4.1.2 TO WHAT EXTENT HAVE THE INTERVENTIONS BEEN FLEXIBLE IN RESPONDING TO CHANGES⁵⁵ OVER THE COURSE OF ITS IMPLEMENTATION?

KIIs with KWC and project consultants indicate that EBRD and SECO demonstrated a high degree of flexibility in responding to changes during the Khujand Water Project. According to PIU consultants, EBRD was accommodating toward adjustments as long as they contributed to project objectives. KWC management noted that several concerns and questions arose during the project's implementation, with EBRD positively responding to reasonable requests for changes. The Khujand Water Project focused on rehabilitating existing water supply and wastewater systems rather than constructing new ones. This focus reduced the need for

⁵¹ Corporate Solutions, "Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report," (June 2009) 1-6.

⁵² Corporate Solutions, "Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report," (June 2009), Annex A p.2.

⁵³ Information was provided by the EBRD/SECO project consultants, for Phase I of FOPIP. Extracted from Corporate Solutions, "Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report," (June 2009), Annex A p.4.

⁵⁴ Corporate Solutions, "Tadjikistan Khujand Water: Project Preparation and Implementation Support Services and Stakeholder Participation Programme" Khujand Phase I, Inception Report, (May 2005) II-10.

⁵⁵ For example, evolving policy and economic contexts, change of funding, outbreaks of conflict, pandemic, etc.

comprehensive alterations and allowed for a more adaptable approach to addressing issues as they emerged, ensuring that the project stayed on track while meeting its objectives.

4.2 COHERENCE

The OECD-DAC criterion of coherence is a measure of the compatibility of the intervention with other interventions in a country, sector, or institution, including both internal coherence (synergies and interlinkages between the intervention and other interventions carried out by the same institution/government) and external coherence (consistency of the intervention with other actors' interventions in the same context).⁵⁶ To assess the coherence of EBRD's and SECO's activities, we aimed to understand whether the interventions were compatible with other lending and technical assistance by EBRD and SECO in Tajikistan and the water sector. In addition, we assessed whether EBRD's and SECO's interventions were aligned with the activities of other international development partners working in Tajikistan's water sector.

4.2.1 TO WHAT EXTENT ARE THE INTERVENTIONS COMPATIBLE WITH OTHER INTERVENTIONS OF EBRD/SECO IN TAJIKISTAN'S WSS SECTOR?

The Khujand Water Project has been compatible with other interventions by EBRD and SECO in Tajikistan's WSS sector. This alignment is evident when reviewing the objectives and components of the interventions that EBRD and SECO have financed over the last two decades in Tajikistan. Since 2004, EBRD has been financing investment activities and providing technical assistance for WSS services in cities across Tajikistan, beyond the projects covered by this evaluation. The following are some of the projects that EBRD has executed in Tajikistan's water sector:^{57, 58,59}

- South Tajik Water Rehabilitation Project (2009 –2013)
- North Tajik Water Rehabilitation Project (2010 – 2022) and II (2013 – 2022)
- Central Tajik Water Rehabilitation Project (2011)
- Khatlon Water Rehabilitation Project (2012)
- Tajik Water II - Khorog GBAO Water Rehabilitation (2014)
- Khujand Wastewater Project (2014)
- Nurek Water and Wastewater Project (2016)
- Kulob Water and Wastewater Project (2020 – Ongoing)
- Fayzobod Water and Wastewater project (2021– Ongoing)

⁵⁶ OECD, "OECD/DAC Network on Development Evaluation - Better Criteria for Better Evaluation: Revised Evaluation Criteria Definitions and Principles for Use," Accessed November 23, 2023. <https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf>

⁵⁷ EBRD, "Project Summary Documents," accessed July 3, 2024. https://www.ebrd.com/work-with-us/project-finance/project-summary-documents.html?c36=on&s8=on&keywordSearch=&as_fid=AAAAAAWjENr9R_TSjMavRi89hp_SZHMhghJjxYyuqKIPQibDw1PqVglbSY-CyU2rgCr_DmdykyiyiqittQ_WorCfmmApnWwq-UerOOe4MPTzIXUJVJT9bcPaAE5RqYwsOBaadCCLeoJvpcDn7ASxOm2GJJzo8ii6qSYgeyvBu9-eCpDf7g%3D%3D&as_fid=c376587c55b70bc9506beea206518bee4353b434

⁵⁸ SECO cofinanced the Khujand Wastewater Project with a USD 5 million CAPEX grant.

⁵⁹ The projects with only one year in between parenthesis show the year of project approval by EBRD.

These interventions have aimed at rehabilitating water supply systems and improving wastewater assets, such as sewers, pumping stations, and wastewater treatment plants. In addition, most of these projects have included technical assistance such as project implementation support, corporate development programs, and stakeholder participation programs, similar to the technical assistance carried out for the Khujand Water Project.

4.2.2 TO WHAT EXTENT ARE THE INTERVENTIONS COMPATIBLE WITH INTERVENTIONS OF OTHER DEVELOPMENT INSTITUTIONS IN TAJIKISTAN'S WSS SECTOR?

The Khujand Water Project was aligned with interventions of other development institutions in Tajikistan's WSS sector. Also, evidence suggests that there is little or no overlap with the support of other international development partners.

In 2007, the Tajikistan Development Coordination Council (DCC) was established with the objective to strengthen aid effectiveness in Tajikistan. The DCC aims to facilitate information exchange and collaboration within the development institutions working in the country, as well as promote dialogue with the GoT on key development priorities.⁶⁰

EBRD, SECO, and 20 other development partners are part of DCC's Water and Disaster Risk Reduction Working Group (W&DRR WG), which is one of DCC's 14 working groups. The W&DRR WG's current objective is to *"ensure effectiveness of donors support to implementation of the Water Sector Reform Program 2016 – 2025 and Mid-Term National Development Strategy 2021-2025 of the Government of Tajikistan, mainly through improved coordination and support to policies and strategies aimed at development of a productive and financially-viable water sector in Tajikistan"*.⁶¹ The W&DRR WG meets at least every two months and met in nine occasions in 2023.⁶²

Under the DCC, interventions in the country's water sector have mainly been divided by geographical area and type of assistance. For example, the World Bank's assistance has primarily focused on improving the reliability of WSS services in Dushanbe, as well as improving the operational performance of Dushanbe's water utility. The Aga Khan Development Network supports rural water and sanitation projects, and the European Union assists in integrated water resource management projects at a national level.⁶³ EBRD and SECO, in turn, have focused their efforts on secondary cities such as Khujand and Khorog.

4.3 EFFECTIVENESS

The OECD-DAC criterion of effectiveness refers to the extent to which a development intervention's objectives and results were achieved, or are expected to be achieved, taking into account their relative

⁶⁰ ADB, "Development Coordination (Building Climate Resilience in the Pyanj River Basin—RRP TAJ 45354)," accessed on July 8, 2024, <https://www.adb.org/sites/default/files/linked-documents/45354-002-taj-dc.pdf>

⁶¹ DCC – Tajikistan. "Water and DRR Working Group," accessed on July 8, 2024, <https://untj.org/dcc/category/infrastructure-new/water-drr-wg-new/>

⁶² Ibid.

⁶³ SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html> 17/162

importance and any differential results across groups.⁶⁴ Effectiveness of EBRD's and SECO's activities in Tajikistan's WSS sector were evaluated based on progress made toward intended outputs and outcomes. In addition, we assessed the extent to which the mechanisms adopted for each intervention—that is, the integration of "hard" elements such as infrastructure investment with "soft" measures like corporate development and stakeholder participation—were helpful in achieving the expected outcomes.

4.3.1 TO WHAT EXTENT HAVE THE INTERVENTIONS ACHIEVED OR ARE EXPECTED TO ACHIEVE THE INTENDED OUTPUTS?

The physical outputs intended for delivery under Phases I to III of the Khujand Water Project were overwhelmingly delivered as planned, and to the specified quality.⁶⁵ Appendix E shows a list of the Khujand Water Project's planned physical and technical assistance outputs. The physical outputs delivered included:

1. Under Phase I:
 - a. 27,000 water meters procured, checked, calibrated, and installed
 - b. 54 km of distribution and transmission mains replaced with HDPE pipe
 - c. 22 deep wells rehabilitated
 - d. Sewage pumps and high-pressure water pumps procured and made operational
 - e. Maintenance and workshop equipment procured and made operational
2. Under Phase II:
 - a. 13,655 water meters procured, checked, calibrated, and installed
 - b. 40 km of distribution and transmission mains replaced with HDPE pipe
 - c. Deep wells rehabilitated and pumps replaced
 - d. Maintenance and workshop equipment procured and made operational
3. Under Phase III:
 - a. Bulk water meters procured, checked, calibrated, and installed
 - b. Disinfection system supplied and made operational
 - c. 12.5 km of distribution and transmission mains provided for Obsheron village
 - d. 8 km of sewerage main replaced
 - e. 14.5 km of interceptor sewage main installed and made operational
 - f. Preliminary and primary stages of the wastewater treatment plant constructed and made operational
 - g. Maintenance and workshop equipment procured and made operational
 - h. Laboratory equipment procured and made operational

The reconstruction of the Khujand Wastewater Treatment Plant under Phase III did not deliver all planned outputs. The output statements were: *"Rehabilitation of Wastewater Treatment Plant (is) complete"* and *"Wastewater is treated reliably and complies with effluent standards throughout the year. Improvement of all*

⁶⁴ OECD, "OECD/DAC Network on Development Evaluation - Better Criteria for Better Evaluation: Revised Evaluation Criteria Definitions and Principles for Use," accessed November 23, 2023. <https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf>

⁶⁵ Based on discussions with KWC and other key stakeholders, and on visual inspections of the assets intervened (where possible).

environmental factors due to Wastewater Treatment Plant rehabilitation.” Because of funding limitations, only the preliminary and primary stages of the WWTP were reconstructed. While this improves the quality of wastewater arriving at the biological treatment stage, the absence of any improvements to this stage, and to the subsequent tertiary stage of treatment, means that effluent discharge standards from the plant cannot be met (see Box 4.1).

Box 4.1: Reconstruction of Khujand Wastewater Treatment Plant under Phase III

Under Phase III, the preliminary and primary (primary clarification) treatment stages of the Khujand WWTP were reconstructed. The civil works and equipment appear to be of a high quality and on inspection, these components (screens, grit removal, primary clarification, and primary sludge removal) all appeared to be functioning well. There was no sign of sludge carry-over from the primary clarifiers. From the primary clarifiers, the effluent passes into the biological treatment stage, which in the case of the Khujand WWTP is a series of pre-existing “bioponds” (designed as anaerobic and facultative waste-stabilization ponds). If properly configured and maintained, these could be expected to provide efficient biological treatment, possibly achieving effluent standards for some parameters. However, the ponds are currently poorly configured and maintained, with not all in operation. Some are partly filled with sludge, and those in operation are being used in a combination of series and parallel arrangements. With a relatively small investment, overall treatment efficiency could be substantially improved by reconfiguring and rehabilitating the existing pond system to provide optimum levels of treatment.

It is recommended that that KWC prioritizes the completion of the Khujand WWTP reconstruction to achieve the anticipated outputs and improve the quality of the final effluent. While the biopond system will provide good performance in summer months, it does not function well under cold conditions. In order to provide the desired effluent quality throughout the year, consideration may need to be given to more energy intensive biological treatment processes, such as adoption of oxidation ditch technology or variations on the activated sludge process.

Most outputs planned for the project’s technical assistance component were also delivered.⁶⁶ The CDP consultants successfully implemented training programs on preparing financial statements and covenant reports following International Financial Reporting Standards (IFRS), developed financial tools and models to use as management tools for benchmarking KWC’s performance, assisted in preparing an environmental management plan, and helped to strengthen organizational structures. In addition, CDP consultants formulated a Business Development Plan up to 2030 (KWC’s Master Plan) and prepared a computerized budget template for KWC to prepare annual budget forecasts. Consultants also organized workshops on tariff calculation methodologies to assist KWC in tariff applications. Additionally, the SPP program executed awareness campaigns on the rational use of water, the cost of WSS services, and hygiene practices.

⁶⁶ See Appendix E for a description of planned technical assistance outputs for Khujand Water Project.

4.3.2 TO WHAT EXTENT HAVE THE INTERVENTIONS ACHIEVED AND ARE EXPECTED TO ACHIEVE THE INTENDED OUTCOMES?

This assessment found that most outcomes of the Khujand Water Project have been achieved, based on the review of project documentation, KIIs, and a site visit to KWC's facilities. Infrastructure and technical assistance investments aimed at providing uninterrupted and adequate access to water supply services have been highly effective.⁶⁷ However, the technical assistance aimed at improving KWC's management has not achieved all outcomes, and improvements in wastewater services only focused on preliminary and primary treatment processes.

The Khujand Water Project had three main project outcomes, as shown in the logframes in Appendix B. We proposed a set of KPIs to evaluate outcome achievement. These KPIs are based on a wide range of operational and financial indicators typically used for water and sanitation system, the indicators used in project consultants' logframes, and data availability.⁶⁸ Table 4.1 presents the intended outcomes, the corresponding KPIs, and results before and after project implementation.

Table 4.1: Khujand Water Project Intended Outcomes and Performance Indicators

Outcome	KPI	Before project implementation (2003)	After project implementation (May 2024)
Customers of KWC get 24-hour, uninterrupted, and adequate access to water and wastewater services at good quality and affordable cost	Water Consumption per Person (liters/day) ⁶⁹	Approx. 500	102 ⁷⁰
	Access to Water Supply ⁷¹	75%	100%
	Access to Wastewater Services	60%	80%
	Continuity of Water Supply (hours/day)	4-6 hours/day 8-10 hours/day ⁷²	24 hours/day 22.5 hours/day
	Reliability of Uninterrupted Water Supply throughout the System	60%	95%
	Continuous Water Quality Monitoring	No	Yes

⁶⁷ With the exception of the Khujand wastewater treatment plant outputs – see comments above.

⁶⁸ Appendix F includes the list of possible KPIs we drew from.

⁶⁹ Data based on KII with KWC

⁷⁰ This is an average for customers with meter connections.

⁷¹ Khujand Water Utility. "Khujand City Water Supply Improvement Program, Phase 3," (2024).

⁷² The data for this KPI varies. During the KIIs, KWC stated that the water supply before project implementation was four to six hours per day, and after project implementation, it increased to 24 hours per day. However, the data that KWC sent following interviews indicates that the water supply before project implementation was, on average, eight to ten hours per day, and after project implementation, it increased to 22.5 hours/day.

	Number of Accidents on Water Supply Networks per Day	20	3
	Number of Accidents on Sewer Networks per Day	50	20
KWC's capacities in managing the water and wastewater infrastructure system has further improved in financial and operational terms	Non-Revenue Water (NRW) (%) ⁷³	71.0%	27.5%
	Implemented Water Tariff Reforms	No	Yes
	Collection Rate	70%	99%
	Increased Public Participation Result in Tariff Reform and Water Service Delivery Ensuring Addressed Poverty Concerns (WUC-influenced Price Adjustments)	No	Yes
	Enhanced Corporate Governance and Transparency	No	Yes
Investments into the city of Khujand's water and wastewater infrastructure are continuing and done in a coordinated way, and facilitate further growth in the city	Investments follow the overall Master Plan	No	Yes
	Regular coordination meetings with other public utilities and municipal service departments	No	N/A

Outcome 1: Customers of the KWC get 24-hour, uninterrupted, and adequate access to water and wastewater services at good quality and affordable cost

Access to Water and Wastewater Services

EBRD's and SECO's support to achieve uninterrupted and adequate access to WSS services was highly effective. KWC's customers have received continuous access to water since the completion of the three phases of the Khujand Water Project, according to KIIs and data provided by KWC.⁷⁴ The continuity of water supply has increased from eight to ten hours per day before project implementation to an average of 22.5 hours per day as of May 2024. According to project consultants, 100 percent of households are now connected to the water supply network, and most receive service around the clock. However, some rural

⁷³ Data provided by KWC.

⁷⁴ Based on KIIs with utility staff and data provided by KWC.

areas have lower continuity levels because of expanding populations in those areas. The number of accidents on water supply networks has decreased from 20 accidents per day to three accidents per day.

Access to wastewater services has also increased from 60 percent to 80 percent, and the number of accidents decreased by half from 50 per day. However, the outcome achievement in wastewater services is limited because the access to the sewerage system is not universal; some sections of the sewer system present frequent blockages, breakages, and leakages; and the partial reconstruction of the WWTP prevents KWC from meeting effluent discharge standards.

Water Quality

Water in Khujand is safe to drink according to project documentation and KIIs with local stakeholders. Before the implementation of Phase III, project consultants took water samples in Khujand and tested them in the Tashkent Central Laboratory for Water and Environment, concluding that KWC's water was safe.⁷⁵ Based on KIIs with utility directives, KWC currently has robust mechanisms to monitor water quality. KWC's bacteriological and chemical departments test water from reservoirs in 92 points across the city on a weekly basis. Additionally, the national Sanitary Epidemiological Control Services (SES) conducts water and wastewater sampling, ensuring a comprehensive and independent verification of water quality.

Affordability

KWC's tariffs appear to be generally affordable for most customers.⁷⁶ Global standards set by the World Bank and the Asian Development Bank recommend expenditure on WSS services to be between three to five percent of household income.⁷⁷ In 2023, Khujand residents spent on average 2.5 percent of their income on WSS services. According to utility staff, consumer surveys show that about 80 percent of customers are satisfied with the current tariff levels, while KWC has seen a decrease in the number of written complaints on tariffs in recent years.

KWC is responsible for setting water tariffs in the city of Khujand. However, all tariff adjustments must be approved by the Antimonopoly Agency. This process is governed by the Law on Natural Monopolies, which involves the Ministry of Finance, the Ministry of Economic Affairs, and the Antimonopoly Agency.⁷⁸

In Phase I of the Khujand Water Project, EBRD requested an initial tariff increase of 250 percent, followed by annual adjustments based on inflation.⁷⁹ In the subsequent phase, EBRD recommended KWC to adopt a

⁷⁵ SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html> 135.

⁷⁶ See Table 4.3 for drinking water and wastewater tariffs by year.

⁷⁷ Stoler et al., "Cash Water Expenditures Are Associated with Household Water Insecurity, Food Insecurity, and Perceived Stress in Study Sites across 20 Low- and Middle-Income Countries," accessed July 25, 2024, <https://doi.org/10.1016/j.scitotenv.2019.135881>.

⁷⁸ SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html> 134.

⁷⁹ Project agreement between Khujand Water Company and EBRD for Khujand Water Supply Improvement Program (July 2004); SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html> 139.

revised tariff methodology based on metered billing by the end of 2008.⁸⁰ According to KWC data and KIs, tariffs were adjusted several times throughout the project implementation. However, adjustments were not always made annually as planned. Adjusting water tariffs became a challenge for KWC because the Antimonopoly Agency often did not allow increases to minimize the economic impact on low-income households. Tariffs were sometimes increased twice a year, while there were no adjustments in other years.

Installation of water meters had a significant important impact on personal water user habits, reducing in-house water waste, encouraging efficiency in personal water use, and reducing the overall cost of water services. In total, 63,877 water meters were installed, accounting for about 90 percent of KWC's customers (see Table 4.2). Water consumption per person decreased from about 500 liters per person before project implementation to 102 liters per person in 2023, partly due to more accurate readings.

Table 4.2: Number of KWC Customers by Type and Meter Availability⁸¹

Type of Customer	Before project implementation (2003)	After project implementation (May 2024)
Residential customers	39,448	68,898
Government customers	202	278
Commercial customers	1,200	1,785
Total customers	40,850	70,961
Residential customers with water meters	-	62,008
Government customers with water meters	-	268
Commercial customers with water meters	120	1,601
Total customers with water meters	-	63,877

Outcome 2: KWC's capacities in managing the water and wastewater infrastructure system has further improved in financial and operational terms

The effectiveness of the technical assistance to KWC for operational and financial improvement of the water utility has been modest. All stakeholders interviewed regarded CDP and SPP programs as important interventions. According to SECO's 2015 Evaluation Report, KWC's General Director noted that no progress

⁸⁰ Loan Agreement between the Khujand Water Company and EBRD (May 2008). SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html>

⁸¹ Data provided by KWC.

would have been made without these programs.⁸² KIIs with KWC and project consultants indicate that KWC has seen financial and operational improvements over the past 20 years, including the implementation of an accounting system that aligns with international standards. This system has helped to modernize the company and reduced corruption between billing collectors and customers. Standard management protocols were also established for better financial reporting, while training on water loss management, revenue protection, and energy efficiency were conducted to reduce water losses and improve energy efficiency. The PSA was also signed, allowing Khujand's municipal government to monitor KWC's performance based on agreed KPIs. As a result of the interventions, KWC has improved its collection rates from 70 percent to 98 percent, reduced its NRW from 70 percent to 26 percent, and created conditions for further NRW reduction.⁸³

However, KWC has faced frequent changes in leadership, with six general directors in ten years. This has led to challenges in implementing and maintaining new practices, as each new director had different priorities. For instance, while one director supported moving away from cash collections, the next one did not. Therefore, KWC sometimes struggled to move away from old practices, such as door-to-door cash collections and estimating water consumption instead of using meters. Capacity building was also challenging, as new directors often brought in their own specialist teams.⁸⁴

Public Awareness

The second technical assistance component, SPP, raised awareness among the population about the need to rationalize water use and pay for water consumption. Initially, KWC's General Director was skeptical about the value of the program. However, after the successful implementation during Phase I, he became a strong advocate for the continuation of SPP in the subsequent phase.

From discussions with CDP project consultants and KWC, customers are willing to pay more for water services if they are confident that the additional revenue is being used effectively and expect to see improvements in quality, access, and service. Good progress has been achieved through meetings, training sessions, public awareness campaigns, and monitoring activities. Customers appreciate the installation of water meters, which provide transparency and clarity in their bills. Controllers also find that water meters help monitor charges through payment receipts.

Tariff Setting Reforms

EBRD's and SECO's support for tariff reforms has had mixed results. While the GoT approved tariff adjustments, these adjustments were not based on systematic annual processes or an analysis of costs.⁸⁵ Table 4.3 shows the annual adjustments and the percent change in water tariffs approved by the GoT since project implementation. EBRD's and SECO's activities helped KWC prepare tariff reforms, introduce a tariff

⁸² SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html> 139

⁸³ According to KWC KIIs and project documentation. Data extracted from Corporate Solutions, "Khujand Wastewater Project (Phase III) Corporate Development and City Support Program. Final Report," (January 2020), 23.

⁸⁴ Corporate Solutions, "Khujand Wastewater Project (Phase III) Corporate Development and City Support Program. Final Report," (January 2020), 23.

⁸⁵ Corporate Solutions, "Khujand Wastewater Project (Phase III) Corporate Development and City Support Program. Inception Report," (September 2017), 13.

methodology to calculate annual price adjustments, and provided training to the water utility on how to apply for tariff increases.

Table 4.3: Drinking Water Tariffs⁸⁶

Year	Residential (TJS per m ³)	% Change	Public (TJS per m ³)	% Change	Private Enterprise (TJS per m ³)	% Change
2003	0.080		0.10		0.25	
2004	0.080	0%	0.10	0%	0.25	0%
2005	0.098	23%	0.16	60%	0.50	100%
2006	0.098	0%	0.16	0%	0.50	0%
2007*	0.141	44%	0.25	56%	0.80	60%
2008*	0.217	54%	0.39	56%	1.24	55%
2009*	0.360	66%	0.55	41%	1.80	45%
2010	0.500	39%	0.80	46%	2.50	39%
2011	0.500	0%	0.80	0%	2.50	0%
2012	0.600	20%	0.98	23%	3.00	20%
2013	0.700	17%	1.20	23%	4.20	40%
2014	0.700	0%	1.20	0%	4.20	0%
2015	0.850	21%	1.45	21%	5.00	19%
2016	0.850	0%	1.45	0%	5.00	0%
2017	1.000	18%	1.70	17%	6.00	20%
2018	1.000	0%	1.70	0%	6.00	0%
2019	1.200	20%	2.04	20%	6.00	0%
2020	1.2	0%	2.04	0%	6	0%
2021	1.2	0%	2.04	0%	6	0%
2022	1.2	0%	2.04	0%	6	0%
2023	1.44	20%	2.45	20%	7.2	20%

⁸⁶ If the year had multiple changes, we show the final tariff and calculated the overall change for that year.

Tariff increases are essential for KWC to recover costs associated with providing water and wastewater services, and to repay EBRD's loan. However, difficult economic and social conditions in Tajikistan often led the GoT to approve smaller and less frequent tariff increases. For example, in 2016, the Tajikistani Somoni significantly depreciated sharply against other currencies (from 6.5 TJS/USD in November 2015 to 7.8 TJS/USD in April 2016), leading KWC to allocate more Somoni to pay back EBRD loans, which are denominated in foreign currency. To address this challenge, KWC requested a 30 percent increase in tariffs, but the Antimonopoly Agency only granted a 20 percent increase. The last tariff change was in 2023, and KWC has recently requested an additional tariff adjustment to cover higher energy costs.

Outcome 3: Investments into the city of Khujand's water and wastewater infrastructure are continuing and done in a coordinated way, and facilitate further growth in the city

According to project documentation from 2021 and KIIs with KWC staff, the investments outlined in Phase III of the Khujand Water Project align with the long-term investments in the Master Plan developed by project consultants. KWC confirmed that these investments are consistent with the Master Plan. However, access to the sewerage system is about 80 percent and many sewer sections are prone to breakages. It is not clear whether KWC and the city of Khujand have access to the resources needed to (i) increase coverage of the sewerage system, (ii) rehabilitate older sections of the sewer network, and (iii) develop the WWTP's biological and tertiary treatment stages to meet national effluent discharge standards.

4.3.3 TO WHAT EXTENT WERE THE MECHANISMS ADOPTED FOR EACH INTERVENTION EFFECTIVE IN ACHIEVING THE INTENDED OUTCOMES?⁸⁷

The mechanisms adopted for each intervention in Khujand were moderately effective in achieving the intended outcomes. Moreover, we identified some challenges in the synergies between physical investments and technical assistance components. Discussions with water utility directors and local project consultants suggest coordination between PIU and CDP consultants was good. However, there is some evidence—from SECO's 2015 Evaluation Report—that delays in physical investments undermined the effectiveness of CDP training and activities for KWC's staff. In addition, KWC management would have preferred instead that the physical investments and technical assistance were delivered in parallel.⁸⁸

Despite the challenges, completing infrastructure upgrades alongside programs such as SPP effectively demonstrated the benefits of the Khujand Water Project to customers. For instance, an information campaign implemented as part of the SPP explained the benefits of installing water meters, despite the inconvenience of roadworks and pipe restoration. Physical investments also helped to improve water pressure in multi-family apartment buildings, while CDP consultants held workshops and training sessions with the community to explain that while water is free, the services are not, and customers need to pay for good quality, reliable

⁸⁷ This evaluation question will focus on the combination of "hard" (infrastructure investment) with "soft" technical assistance measures (corporate development and stakeholder participation), as well as the sequencing and coordination of the different activity streams.

⁸⁸ SECO, "Independent Evaluation. SECO's Corporate Development of Public Utilities," accessed July 25, 2024. <https://www.seco-cooperation.admin.ch/secocoop/en/home/documentation/reports/independent-evaluations.html> 134.

service. The physical service improvements, coupled with the softer CDP activities, helped bill collectors overcome the historical reluctance of customers in such buildings to pay.

4.4 EFFICIENCY

The efficiency criterion of the OECD-DAC evaluates the degree to which an intervention is capable of achieving, or is anticipated to achieve, results in a timely and economically efficient manner.⁸⁹ We sought to understand whether the interventions were conducted in a timely and cost-effective manner. In addition, we aimed to assess whether EBRD's and SECO's management and monitoring mechanisms have supported the efficient implementation of interventions. However, these objectives were not achieved because of a lack of internal documentation (see sections below for more details on the missing information).

4.4.1 TO WHAT EXTENT HAVE THE INTERVENTIONS, INCLUDING THEIR INTERNAL MANAGEMENT AND MONITORING MECHANISMS, DELIVERED OUTPUTS AND OUTCOMES IN A COST-EFFECTIVE MANNER?

The available information was not sufficient to answer this evaluation question. Specifically, we lacked access to internal EBRD documentation that detailed disbursements against original budgets.

4.4.2 TO WHAT EXTENT HAVE THE INTERVENTIONS, INCLUDING THEIR INTERNAL MANAGEMENT AND MONITORING MECHANISMS, DELIVERED OUTPUTS AND OUTCOMES IN A TIMELY MANNER?

The available information was not sufficient to answer this evaluation question. We lacked internal EBRD documentation showing actual disbursement schedules against planned timelines. Anecdotal evidence suggests that some activities of the Khujand Water Project had execution delays.

4.5 IMPACT

The OECD-DAC criterion of impact measures the extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects.⁹⁰ To evaluate the impact of EBRD's and SECO's interventions, we aimed to identify the plausible contribution of the interventions to economic, social, and environmental changes in the regions supported. We also evaluated whether the expected TI qualities for each intervention were achieved.

4.5.1 TO WHAT EXTENT HAVE THE INTERVENTIONS GENERATED OR ARE EXPECTED TO GENERATE 'HIGHER-LEVEL EFFECTS'?

It is highly likely that EBRD's and SECO's interventions in Khujand contributed to improvements in access and quality levels of WSS services. There were no other large WSS investment projects in Khujand during the period, and improvements are directly attributable to measures undertaken by the projects. As mentioned

⁸⁹ OECD, "OECD/DAC Network on Development Evaluation - Better Criteria for Better Evaluation: Revised Evaluation Criteria Definitions and Principles for Use," accessed November 23, 2023, <https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf>.

⁹⁰ OECD, "OECD/DAC Network on Development Evaluation - Better Criteria for Better Evaluation: Revised Evaluation Criteria Definitions and Principles for Use," accessed November 23, 2023, <https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf>.

in Section 4.3.2, access to water supply increased from 75 percent in 2003 (before the interventions) to 100 percent in 2024.⁹¹ Continuity of water supply also increased, from about eight hours per day to 24 hours per day during the same period. Water quality is now regularly monitored to ensure that the water supplied is safe to drink. No water-borne diseases have been reported in the city in recent years, according to KWC.

Although it is not possible for this evaluation to determine the exact extent to which higher access and quality of water supply can be attributed to EBRD's and SECO's support to KWC, there is no reason to believe that the interventions did not substantially contribute to the higher-level effects mentioned above.⁹² Water supply systems in Khujand were neglected following Tajikistan's independence, primarily due to a lack of capacity and a shortage of public funding. EBRD's and SECO's water projects in the city appear to have spurred positive changes in physical systems, as well as in the management and performance of KWC, leading to higher access to water supply and safe drinking water for most customers.

The interventions' impact on the quality of wastewater services seems to have been more modest. Improvements were made to sewage pumps during Phase I of the Khujand Water Project, but only the preliminary and primary stages of Khujand's WWTP were reconstructed during Phase III. As noted in Section 4.3.1, this has improved the quality of the wastewater that arrives at the biological treatment stage. However, the lack of tertiary treatment means that national effluent discharge standards are not being met. This negatively impacts the environmental conditions of the Syr Darya River downstream from the effluent discharge point. However, we acknowledge that improvements from such investments are challenging for water utilities such as KWC. While critically important from a health and environmental perspective, these investments' benefits are not usually directly noticed by customers. However, they impose large costs that customers would ultimately need to bear through tariffs.

4.5.2 IS THERE ANY EMERGING EVIDENCE THAT THE INTERVENTIONS CONTRIBUTE TO LOCAL ECONOMIC DEVELOPMENT, INCLUDING GENDER-SENSITIVE INCOME GENERATION?

The evaluation team could not source sufficient quantitative information to answer this evaluation question. Local team members contacted the Agency on Statistics under the President of the Republic of Tajikistan, but only received sparse economic information for the overall Sughd region between 2020 and 2023. This is not sufficient to assess the possible impact of the Khujand Water Project on Khujand's local economic development.

However, anecdotal evidence from KIIs with KWC suggests EBRD's and SECO's interventions contributed to local economic development. KWC directives indicated that small businesses have been able to increase working hours thanks to the continuous and more reliable water supply. According to KWC, other sectors such as transport, energy, and agriculture have also benefited.

⁹¹ Khujand Water Company. "Khujand City Water Supply Improvement Program, Phase 3," provided during KII with KWC.

⁹² According to the OECD-DAC, higher level effects refer to "social, environmental and economic effects of the intervention that are longer term or broader in scope than those already captured under the effectiveness criterion".

4.5.3 HAVE THE INTERVENTION'S OUTCOMES CONTRIBUTED OR ARE EXPECTED TO CONTRIBUTE TO THE 'WELL GOVERNED' AND 'COMPETITIVE' TRANSITION QUALITIES?

It is highly likely that the Khujand Water Project has contributed to the 'Competitive' and 'Well governed' TI qualities. In terms of the 'Competitive' TI quality, the only aspect evaluated by EBRD relevant to the Khujand Water Project seems to have been '*subsidies to the private sector, public corporations, and other sectors (as a share of GDP)*'.⁹³ As mentioned in Section 4.3.2, EBRD's and SECO's interventions helped KWC prepare tariff adjustments, introduced a tariff methodology for setting annual price adjustments, and trained utility staff on how to apply for tariff increases. These actions helped KWC request and obtain tariff increases since the start of the Khujand Water Project, reducing the need for government transfers to KWC and likely contributing to the 'Competitive' TI quality.

In terms of the 'Well governed' TI quality, the aspects evaluated by EBRD relevant to this project seem to have been '*quality of institutions*' and '*transparency and disclosure*'.⁹⁴ Both measures have likely improved following the implementation of EBRD's and SECO's interventions in KWC. The PSA was signed to outline the core principles of KWC's institutional structure and to formalize the relationship between KWC and the Municipality. The PSA specified duties and coordination methods, emphasizing fiscal discipline, performance accountability, and public oversight. Therefore, we find that these activities have generated positive impacts on the utility's institutional strength and transparency.

4.6 SUSTAINABILITY

The OECD-DAC criterion of sustainability is a measure of the extent to which the benefits of the intervention are likely to continue.⁹⁵ To assess the sustainability of EBRD's and SECO's interventions, we evaluated whether the benefits of the efforts undertaken in Tajikistan's WSS sector have lasted or are likely to last financially, economically, and socially.

4.6.1 TO WHAT EXTENT HAVE CLIMATE CHANGE EXTERNALITIES BEEN ADEQUATELY CONSIDERED?

Insufficient information was available to answer this evaluation question. The evaluation team did not have access to internal EBRD or SECO documentation, where it is likely that climate change externalities may have been assessed. Climate change and environmental risks are not discussed in the PIU documents we had access to.

KWC directives mentioned that they were not aware of any follow-up on climate change externalities during the implementation of the Khujand Water Project. They indicated that assessing those externalities was a requirement for internal EBRD and SECO project approval, but it was not considered during the implementation.

⁹³ Skakovaand, D and Livny, E. (EBRD), "*Tajikistan Diagnostic*," (2020).

⁹⁴ Ibid.

⁹⁵ OECD. 2019. "OECD/DAC Network on Development Evaluation - Better Criteria for Better Evaluation: Revised Evaluation Criteria Definitions and Principles for Use". Accessed January 31, 2023. <https://www.oecd.org/dac/evaluation/revised-evaluation-criteria-dec-2019.pdf>

4.6.2 TO WHAT EXTENT ARE BENEFICIARIES CAPABLE AND MOTIVATED (TECHNICAL CAPACITY, OWNERSHIP) AND HAVE THE FINANCIAL RESOURCES TO CONTINUE ACTIVITIES THAT CONTRIBUTE TO SUSTAINING BENEFITS?

KWC has the technical capacity to sustain operation of the assets created under the three phases of the project and of the overall water supply and wastewater management system. This assessment is based on (i) KIIs with officials and technical staff of KWC on management practices; (ii) available information on past and current financial and operational performance; and (iii) observation of visible operational elements of the water and wastewater systems. Evidence on system performance indicates that KWC has adopted operation and maintenance practices that ensure consistent and reliable delivery of water supply and wastewater services. These practices are likely to help sustain the achieved outcomes.

The financial performance of KWC appears satisfactory, with revenues able to cover all recurrent operational costs, expenses related to periodic maintenance and repair, and repayment of existing loans. While revenues are currently inadequate to enable KWC to build savings to provide for future capital replacement, savings will be generated once loan repayments decline and/or GoT allows for further tariff increases. Furthermore, KWC is keen to continue with new projects and there is no reason to believe management is not acting in good faith in this regard.

If we expand the concept of beneficiaries to include KWC customers, the main factors relate to behavioral change and willingness to pay. Under the project, Water User Associations in 16 neighborhoods were established. These groups, together with mahalla (district) heads, were reported to be active during the project implementation and critical to its success. However, their involvement has waned with the end of Phase III. The focus on water conservation, introducing the concept of consumption-based billing through metering, and awareness raising is likely to be maintained. Stakeholder feedback suggests that customers are likely to continue supporting KWC's operations.

Capacity and motivation to continue providing benefits will depend on a combination of resources and good management of those resources. Key determining factors include KWC's management capability; institutional knowledge; staff motivation (largely linked to salary levels); and maintaining the grid through repairs, replacing aging equipment, and infrastructure upgrades. Achieving sufficiently high bill collection rates will ensure commercial viability. Timely loan repayment helps the utility maintain credibility and confidence that future investments will be paid back. Management continuity and institutional memory are also critical, as they ensure commitment to goals, efficiency, and motivation.

We found that the main corporate risks to sustaining benefits relate to the replacement of the Director or upper management (which occurs periodically, about every five years) with less committed personnel. We assess these risks as moderate. A new investment project would likely mitigate this risk if it brings renewed attention to corporate development and promotes efficient management systems. In addition, substantial future investment is required in wastewater infrastructure. This will require further increases in the wastewater tariff, which will be unpopular with consumers who have already seen considerable increases in water supply tariffs. To reduce the risk of public resistance to such increases, any further capital investment in wastewater infrastructure should be accompanied by a public awareness campaign. This campaign should focus on the value of effectively managing and treating wastewater, as well as maintaining the environmental quality of receiving water bodies.

4.6.3 TO WHAT EXTENT ARE CONTEXTUAL FACTORS⁹⁶ CONDUCTIVE TO CONTINUING ACTIVITIES THAT CONTRIBUTE TO SUSTAINING BENEFITS?

Contextual factors in Khujand and the country appear to be conducive to sustained benefits. This evaluation found that KWC's management, economic conditions, cost recovery, efficient use of water, and downstream wastewater treatment are critical to maintaining the interventions' benefits.

KWC's management shows commitment to maintaining WSS systems and servicing loans. For example, it has replaced pumps with funds from its revenues, indicating a recognition of the importance of capital expenditure to the long-term operational efficiency of the utility. Despite some challenges in previous years, partly linked to the disruptions of the COVID-19 pandemic, KWC continues to make loan repayments. Phases I and II have been fully repaid and KWC is repaying Phase III, with approximately USD 1.7 million out of USD 3.5 million paid off at the time of the evaluation.

Customer attitudes toward water usage and payments are a key factor in KWC's commercial viability and ability to invest in regular maintenance. The groundwork laid during the previous investment phases in changing customer behavior with respect to water consumption and switching to meters should help maintain investment outcomes. According to KWC, customer satisfaction is high (80 percent), while per capita water consumption has decreased substantially. KWC noted that it will increase tariffs to take into account for the rise in electricity costs; KWC is currently preparing a request to the Antimonopoly Agency for such increase. The previous tariff increase was in 2023, and KWC does not expect resistance from customers.

Economic conditions in Tajikistan are also currently conducive to sustaining project benefits. Tajikistan's economy experienced considerable growth during the period of project implementation, and the poverty rate has fallen by half since 2007, according to the World Bank. In 2023, the economy grew by 8.3 percent, fueled in part by high remittances, although the World Bank projects growth to soften to 4.5 percent annually by 2026.⁹⁷ A strong economy is positive for the utility as it suggests that affordability and willingness to pay will become more modest challenges, making it easier to charge cost-recovery tariffs. Key risk factors, however, include geopolitical events that could negatively affect the Russian economy, where many Tajiks work, or changes in policies that could lead to considerable reductions in Tajik nationals working in Russia.

⁹⁶ For example, legislation, policies, and economic contexts.

⁹⁷ World Bank, "Tajikistan-Water-Supply-and-Sanitation-Investment-Project.Pdf," accessed July 26, 2024. <https://documents1.worldbank.org/curated/en/932351655916461178/pdf/Tajikistan-Water-Supply-and-Sanitation-Investment-Project.pdf>.

SECTION 5 CONCLUSIONS AND LESSONS LEARNED

This section presents the conclusions and lessons learned from the findings presented in Section 4 by OECD-DAC criterion. At the end of this section, Table 5.1 presents SECO's Assessment Grid for the Khujand Water Project.

Relevance

The Khujand Water Project had a strong rationale. In seeking to improve the clean drinking water supply, the project supported government policy in the sector and targeted a basic need critical to human health and well-being, as well as promoting economic development. The focus on water was in line with the GoT's Water Sector Development Strategy, which includes: (i) rehabilitation of existing water infrastructure with its production base; (ii) ensuring full reimbursement of water supply costs; (iii) introduction of new cost-effective technologies; (iv) implementation of an effective water-saving program; and (v) gradual resolution of environmental problems related to WSS, including water pollution.

Mindful that not all WSS management issues experienced in Khujand can be addressed simultaneously, the initial focus was optimal. That is, improving the quality and reliability of potable water supply, in turn enabling more efficient water use and thus substantially improving the financial standing of KWC.

Coherence

The support provided by EBRD and SECO through the Khujand Water Project was consistent with the approach used for improvements in urban water supply and wastewater management in other areas of the country. No other water supply and wastewater management investment projects were active in Khujand during the period of implementation of the three phases of the project. The evaluation team found no duplication as other WSS improvement initiatives in the district were targeted at rural areas.

Effectiveness

Applying a combined approach of 'hard' and 'soft' measures—integrating capital investments with technical assistance targeting management and governance—has proven effective in delivering intended outcomes and should be continued. Of particular value was the concurrent provision of technical support in project implementation, capacity building, and corporate development (including financial management) working in tandem with infrastructure investments. This approach maximizes the opportunity for KWC staff to 'learn by doing.' Furthermore, by incorporating demand-side issues through meter installation and encouraging behavioral changes, the interventions substantially improved water use efficiency by reducing consumption.

However, the effectiveness of support in wastewater management was compromised by the relatively low level of investment compared to the resources required to meet national discharge standards. A staged approach is understandable, given the substantial resources needed for a complete solution and its implications for tariff levels and affordability. Nevertheless, more consideration could be given to maximizing environmental benefits with the limited resources available within the framework of a staged investment approach.

Efficiency

This criterion was not assessed because of the lack of information. Evidence suggests that the project was completed with some delays.

Impact

We attribute the following 'higher-level effects' to the Khujand Water Project:⁹⁸

- Substantial improvements in access to potable water supply
- Improvements in the efficiency of water use (in terms of reduction in NRW)
- Behavioral changes that contribute to water conservation
- Strengthened management and financial performance of KWC.

In addition, access to drinking water became more equitable—availability expanded in terms of service delivery in hours per day and number of households receiving piped water. The project's technical assistance also contributed to improving KWC's governance, internal systems, asset management, and financial performance.

We cannot quantify the social benefits or economic impact derived from the investment without additional data. However, there is a strong probability that the rate of return is positive. Broader impacts in terms of health outcomes and local economic development could not be measured either, although KWC confirmed that there has been no reports of water-borne diseases attributed to water supply. Moreover, businesses have indicated better operating conditions as a result of a more reliable water supply.

Sustainability

We find that the outcomes from successive project phases are being sustained. Risks to sustainability could arise from economic shocks or mismanagement by KWC, leading to a deterioration in customer payments and services, but we assess these risks as low in the medium term. The improved financial performance of KWC means that once the loans taken out for the Khujand Water Project are repaid, KWC should be able to replace aging assets in a timely manner, maintaining service levels, and expanding the water supply system. As Khujand is expanding rapidly and is at the center of contiguous urban areas with separate water supply and wastewater management arrangements, it would be advisable to develop a metropolitan approach to WSS management in the longer term to ensure sustainability.

Lessons Learned

- The combination of infrastructure investments and technical assistance to management was effective. Both areas needed improvement, and they complement each other. However, infrastructure investments were relatively more effective than technical assistance components.
- Simultaneous tackling of supply and demand sides—improvements of water supply infrastructure and demand management through community engagement and installation of water meters—has also been effective.

⁹⁸ According to the OECD-DAC, 'higher level effects' refer to "social, environmental and economic effects of the intervention that are longer term or broader in scope than those already captured under the effectiveness criterion".

- Assessing the operating cost implications of any CAPEX is crucial when making investments in WSS infrastructure (for example, the five-stage pumping of Kanibadam's water supply system (see Report on the North Tajik Water Projects), as these can work against cost recovery and yet show limited benefits to customers.
- Assessing economic and social impacts is difficult without baseline data. In the future, data should be collected before project implementation. Even basic data on key indicators would be useful.
- Combining loans and grants is a good approach, as it makes repayment more feasible than if projects are only financed via loans. This strategy seems to have paid off, as loan repayments have generally been made. This is particularly important if future investments are made in wastewater systems, given the high cost and smaller perceptible impact for end-users.
- Engaging with community groups and representatives during implementation appears to have been critical to both improving efficient water use, and greater acceptance of tariff increases, when they came.
- The Antimonopoly Agency was often reluctant to approve tariff increases, which is an issue for the utilities in terms of long-term sustainability. However, we understand that the Antimonopoly Agency must weigh utility demands against affordability concerns.

Table 5.1: Assessment Grid for the Khujand Water Project

Key aspects based on DAC criteria	Score	Justification
Relevance		
1. The extent to which the objectives of the intervention respond to the needs and priorities of the target group.	1	The objectives and core design elements of the Khujand Water Project directly respond to the needs and priorities of KWC (target beneficiary) and the GoT under the National Program for Improvement of Access to Safe Drinking Water for the Population of the Republic of Tajikistan for 2007 to 2020 (see Section 4.1.1 for a detailed justification).
2. The extent to which the objectives of the intervention respond to the needs and priorities of indirectly affected stakeholders (not included in target group, e.g. government, civil society, etc.) in the country of the intervention.	1	
3. The extent to which core design elements of the intervention (such as the theory of change, structure of the project components, choice of services and intervention partners) adequately reflect the needs and priorities of the target group.	1	
4. Adapting over time: the extent to which the intervention has meaningfully adapted to changes over the course of its lifespan (e.g. evolving policy and economic contexts, change of funding, outbreaks of conflict, pandemic, etc.)	1	EBRD and SECO showed a high degree of flexibility in responding to changes during the Khujand Water Project (see Section 4.1.2).
Coherence		
4. Internal coherence: the extent to which the intervention is compatible with other interventions of Swiss development cooperation in the same country and thematic field (consistency, complementarity and synergies).	1	The Khujand Water Project have been compatible with other interventions by EBRD and SECO in Tajikistan's water sector (see Section 4.2.1).
5. External coherence: the extent to which the intervention is compatible with interventions of other actors in the country and thematic field (complementarity and synergies).	1	The Khujand Water Project was aligned with interventions of other development institutions in Tajikistan's water sector. Also, evidence suggests that there is little or no overlap with the support of other international development partners (see Section 4.2.2).
Effectiveness		
6. The extent to which approaches/strategies during implementation are adequate to achieve the intended results.	1	The mechanisms adopted for each intervention in Khujand were highly effective in achieving the intended outcomes, as seen in the improvement of KWC's financial and operational performance, as well as its management practices (see Section 4.3.3).
7. The extent to which the intervention achieved or is expected to achieve its intended objectives (outputs and outcomes).	2	Most of the project's physical investments ('hard' measures) and technical assistance ('soft' measures) outputs were completed. In addition, most outcomes of both project components were achieved (see Sections 4.3.1 and 4.3.2).

8. The extent to which the intervention achieved or is expected to achieve its intended results related to transversal themes.	0	Our evaluation did not specifically address issues of gender equality and social inclusion since these were not key objectives of the interventions. Notably, all informants from KWC were male. The evaluation team could not validate whether the capacity building and CDP interventions under the soft components addressed these aspects. It appears the project did not impact the gender balance within KWC. However, since women generally bear the brunt of social deprivation caused by water shortages, it can be argued that they disproportionately benefit from the increase to a 24/7 water supply.
Efficiency		
9. The extent to which the intervention delivers the results (outputs, outcomes) cost-effectively.	0	Information available was insufficient to evaluate the project's cost-effectiveness.
10. The extent to which the intervention delivers the results (outputs, outcome) in a timely manner (within the intended timeframe or reasonably adjusted timeframe).	0	Information available was insufficient to evaluate the project's cost-effectiveness. However, outputs and outcomes appear to have been achieved with some delays (see Section 4.4.2).
11. The extent to which management, monitoring and steering mechanisms support efficient implementation.	2	Evidence suggests that the overall project arrangements and the concurrent introduction of "soft" measures (capacity building, corporate development, and stakeholder participation efforts) have contributed to efficient project delivery.
Impact		
12. The extent to which the intervention generated or is expected to generate 'higher-level effects' as defined in the design document of the intervention. Note: when assessing this criterion, the primary focus is the intended 'higher-level effects'. In the event that <i>significant</i> unintended negative or positive effects can be discerned, they must be specified in the justification column, especially if they influence the score.	1	It is highly likely that EBRD's and SECO's interventions in Khujand contributed to improvements in access and quality levels of WSS services (see Section 4.5.1).
Sustainability		
13. The extent to which partners are capable and motivated (technical capacity, ownership) to continue activities contributing to achieving the outcomes.	1	KWC has the technical capacity to sustain operation of the assets created under the three phases of the project and of the overall water supply and wastewater management system (see Section 4.6.2).

14. The extent to which partners have the financial resources to continue activities contributing to achieving the outcomes.	2	The financial performance of KWC appears satisfactory with revenues able to cover operational costs and loan service. While revenues are currently insufficient for KWC to build savings for future capital replacement, savings can be made once loan repayments decline (see Section 4.6.2).
15. The extent to which contextual factors (e.g. legislation, politics, economic situation, social demands) is conducive to continuing activities leading to outcomes.	1	Contextual factors in Khujand and the country appear to be conducive to sustained benefits (see Section 4.6.3).

Note: this Assessment Grid is used for evaluations of SECO financed projects and programs (hereinafter jointly referred to as an 'intervention'). It is based on the OECD-DAC evaluation criteria. The following scoring applies for the "score" column: 0 (not assessed), 1 (highly satisfactory), 2 (satisfactory), 3 (unsatisfactory), and 4 (highly unsatisfactory).

SECTION 6 RECOMMENDATIONS

This section presents the recommendations drawn from the assessment of the Khujand Water Project and North Tajik Water Projects. It includes recommendations on the programmatic approach of EBRD's and SECO's support in Khujand, technical assistance components, sequencing future assistance for water utilities in the country, and M&E internal processes.

Programmatic Approach for Tajikistan's WSS Sector

An initial focus on improving water supply is justified as it provides a tangible benefit to consumers, generating socioeconomic returns and increasing their willingness to pay for the service. However, without parallel investment in wastewater management, this approach can exacerbate the wastewater management problem. Building the financial viability of KWC is a priority, and this requires a staged process that prioritizes improvements in the water supply. Nonetheless, it is crucial that this staged approach also acknowledges the need for subsequent investment in wastewater treatment. This process should be outlined in a resourced action plan, detailing intermediate activities and targets to ensure that KWC can sustainably operate both water supply and wastewater management systems.

Further efficiencies could be achieved by adopting a more metropolitan approach to water supply and wastewater management planning for Khujand, which is at the center of a cluster of smaller neighboring municipalities. It would be beneficial to begin considering this in terms of system planning—both in terms of infrastructure and institutional arrangements—even if implementation is only feasible in the medium or long term.

Technical Assistance

It is important to seize opportunities to build capacity during the execution of physical works to promote “learning by doing.” Considering the points made above regarding long-term strategic planning, future assistance to KWC should focus on developing strategic long-term system planning. Some methods for long-term system planning that KWC may use include the balanced score card method (including the development of a strategic map), or the Utilities of the Future framework spearheaded by the World Bank.

Moreover, it is important for KWC's long-term sustainability to have power over salaries and incentives. As Khujand grows and particularly if KWC develops into an institution capable of serving the metropolitan area, the utility will need to manage large infrastructure projects. Inability to pay market rates for technical staff can lead to high turnover, loss of capability, and a resulting deterioration in services, potentially causing a downward spiral in service quality and a subsequent reluctance to pay.

Sequencing of Future Assistance for Water Utilities

A strategic plan may be developed to sequence investments and cost recovery projections, ensuring a progressive improvement in service while maintaining financial viability. This plan should start with water supply improvements and progress toward a comprehensive WSS management system. It should also include building an institution capable of operating, maintaining, and sustaining the system, as well as managing future growth and securing additional loans if necessary.

Coordination of Infrastructure Investments and Technical Assistance Components

Although infrastructure investments were relatively more effective than the technical assistance component, the combination of both proved effective in achieving the projects' overall objectives. Therefore, in future engagements, EBRD and SECO may consider focusing on enhancing corporate development components and ensuring effective coordination between infrastructure investments and technical assistance. Careful planning during the initial project stages can help ensure parallel implementation—or at least well-timed sequencing—of 'hard' and 'soft' measures. Additionally, greater local stakeholder engagement in the planning of corporate development components can increase ownership of activities by local beneficiaries.

M&E Internal Processes

Lack of project information and EBRD and SECO internal documentation prevented some objectives of this assessment from being achieved. To improve its M&E processes, EBRD and SECO may establish a centralized digital repository for all project-related documents and implement a standardized schedule for progress reporting. The adoption of automated tracking systems and project management software could also streamline monitoring efforts and provide real-time data on project progress. Engaging regularly with local stakeholders to gather feedback and staffing local M&E specialists in each project may also lead to more successful project assessments.

Additionally, we consider that EBRD and SECO can commission independent assessments more often than is currently done. Investigating on some older project activities was substantially more challenging because of lack of data and the impossibility of finding local stakeholders that could answer interview questions.

APPENDIX A METHODOLOGY

Our methodology was guided by the comprehensive and detailed evaluation framework SECO provided for assessing the water projects in Tajikistan. The framework includes a tabulated approach using the six OECD-DAC evaluation criteria (relevance, coherence, effectiveness, efficiency, impact and sustainability) and a scoring scale ranging from 0 to 4: 1 - Highly satisfactory (HS); 2 - Satisfactory (S); 3 - Unsatisfactory (U); 4 - Highly satisfactory (HU), 0 - not assessed (n/a).⁹⁹ SECO's evaluation framework incorporates key elements such as data collection and analysis, which focus on collecting information from various sources, including the interim and final reports from the PIU and CDP consultants, KIIs, and consultation with EBRD's operation leaders. Specific questions concern the project's effectiveness in assisting the government, implementation mechanisms, contribution to local economic development, consideration of climate change, quality and sustainability of technical solutions, and stakeholder engagement.

The remainder of this appendix presents the evaluation questions we used during the assessment of EBRD's and SECO's interventions in Tajikistan's water sector. These evaluation questions were guided by the ToR and are linked to each OECD-DAC criterion—relevance, coherence, effectiveness, efficiency, impact, and sustainability. The questions aimed to examine the process and performance of EBRD's and SECO's projects, and provide insights that are useful for the management and adaptation of the interventions. This section also presents the data sources originally planned to be used, as well as the proposed data analysis method for each evaluation question.

A.1 RELEVANCE

Our assessment of the relevance of EBRD's and SECO's activities in Tajikistan's water sector was structured around two proposed evaluation questions. Appendix Table A lists the evaluation questions we asked to assess relevance and our proposed approach to answering them.

⁹⁹ See Annex 2 of ToR.

Appendix Table A: Evaluation Questions for the Relevance Criterion

Evaluation Question	Information Required	Information Source	Data Analysis Method
To what extent do the core design elements ¹⁰⁰ of the interventions respond to the needs and priorities of the target group and the GoT?	- Understanding of the core design elements of the interventions carried out by EBRD/SECO - Utility strategies and objectives in the regions supported by EBRD/SECO - GoT strategies, policies, and plans in the water sector, both historical and current - Information on challenges and needs of the water sector in the regions supported by EBRD/SECO	- EBRD/SECO project documentation (e.g., ToRs, Final Review Memorandums, post-delivery Evaluation Reports) - Reports (EBRD/SECO or third parties) on main challenges and needs of the water sector - GoT strategies, policies, and plans in the water sector, both historical and current - Semi-structured KIIs with EBRD/SECO staff, project beneficiaries, and other stakeholders	- Review EBRD/SECO documents to understand the intervention's core design elements, as well as the nature and need for the intervention - Review GoT policies, strategies and plans to understand priorities and needs - Review utility policies, strategies and plans to understand priorities and needs - Assess whether and how target group priorities and needs matched the intervention's core design elements - Assess whether and how GoT priorities matched EBRD/SECO support
To what extent have the interventions been flexible in responding to changes ¹⁰¹ over the course of its implementation?	- Understanding of whether and how needs and priorities changed since EBRD/SECO support began - Understanding of whether and how EBRD/SECO interventions changed since support began	- GoT sector strategy/policy/planning documents - EBRD/SECO strategy and evaluation documents - Reports (EBRD/SECO or third parties) on main external factors affecting the execution of the interventions - Semi-structured KIIs with EBRD/SECO staff, project beneficiaries, and other stakeholders	- Identify areas where GoT or target group priorities, needs, and policies in the water sector may have changed - Identify external factors affecting the execution of the interventions - Assess the extent to which EBRD/SECO interventions have adapted to new priorities, needs, or external factors

A.2 COHERENCE

The evaluation of the coherence of EBRD's and SECO's interventions in Tajikistan's water sector was based on two proposed evaluation questions, reflecting internal and external coherence. Appendix Table B presents the evaluation questions we asked to assess coherence and our approach to answering them.

Appendix Table B: Evaluation Questions for the Coherence Criterion

Evaluation Question	Information Required	Information Source	Data Analysis Method
To what extent are the interventions compatible with other interventions of EBRD/SECO in Tajikistan and the water sector?	- Understanding of the history of EBRD/SECO lending and TA in Tajikistan - Understanding of the history of EBRD/SECO lending and TA in the water sector	- EBRD/SECO country or regional strategy documents - Semi-structured KIIs with EBRD/SECO staff	- Use information on historical TA and lending activities to understand context at the time of designing EBRD/SECO interventions - Identify examples where EBRD/SECO projects were designed to align with past or ongoing interventions

¹⁰⁰ Including the interventions' objectives, theory of change, structure of the project components, choice of services, and intervention partners.

¹⁰¹ For example, evolving policy and economic contexts, change of funding, outbreaks of conflict, pandemic, etc.

			Assess whether and how EBRD/SECO interventions have shown to complement other lending and TA in Tajikistan and the water sector
To what extent are the interventions compatible with interventions of other development institutions in Tajikistan and the water sector?	- Understanding of other projects and activities previously carried out or underway by other development institutions - Understanding of how EBRD and SECO teams specifically designed their interventions to complement the interventions implemented by other development institutions	- Third party documents on other development institution's activities, such as country partnership strategies and national water sector plans strategies - Semi-structured KIIs with EBRD/SECO staff and staff from other development institutions	- Identify other activities carried out by other development institutions in Tajikistan's water sector - Assess whether and how coordination of country and cross-sector interventions took place

A.3 EFFECTIVENESS

Our assessment of the effectiveness of EBRD's and SECO's projects in Tajikistan's water sector was structured around three proposed evaluation questions. Appendix Table C shows the evaluation questions we asked to assess effectiveness and our proposed approach to answering them.

Appendix Table C: Evaluation Questions for the Effectiveness Criterion

Evaluation Question	Information Required	Information Source	Data Analysis Method
To what extent have the interventions achieved or are expected to achieve the intended outputs?	- Understanding of mechanisms used in each intervention - Information on outputs achieved or likely to be achieved - Understanding of general barriers and challenges to improvement in water sector outcomes in Tajikistan - Understanding of specific barriers and challenges encountered through EBRD/SECO interventions	- EBRD/SECO project documentation (e.g., Final Review Memorandums, post-delivery Evaluation Reports) - Semi-structured KIIs with EBRD/SECO staff, project beneficiaries, and other stakeholders	- Identify progress toward intended outputs - Identify external factors that may have hindered the achievement of outputs - Analyze examples of progress where the mechanism for each intervention is known (i.e. acknowledged by stakeholders) or can be shown (through use of counterfactuals) to have contributed to the intended outputs - Assess whether and how the mechanism adopted for each intervention has been effective
To what extent have the interventions achieved or are expected to achieve the intended outcomes?	- Understanding of intended outputs and outcomes - Information on outcomes achieved or likely to be achieved - GoT strategies, policies, and plans in the water sector, both historical and current - Understanding of general barriers and challenges to improvement in water sector outcomes in Tajikistan - Understanding of specific barriers and challenges	- EBRD/SECO project documentation (e.g., ToR, Final Review Memorandums, post-delivery Evaluation Reports) - Third party documents (e.g. GoT reports, utility reports) on water sector reform - Semi-structured KIIs with EBRD/SECO staff, project beneficiaries, and other stakeholders	- Identify progress toward intended outcomes - Identify external factors that may have hindered the achievement of outputs and outcomes - Analyze examples of progress where EBRD/SECO's role is known (i.e. acknowledged by stakeholders) or can be shown (through use of counterfactuals) to have contributed to the intended outcomes - Assess whether and how the interventions have been effective

	encountered through EBRD/SECO interventions		in achieving the intended outcomes
To what extent were the mechanisms adopted for each intervention effective in achieving the intended outcomes? ¹⁰²	• Understanding of mechanisms used in each intervention • Information on results achieved or likely to be achieved • Understanding of general barriers and challenges to improvement in water sector outcomes in Tajikistan • Understanding of specific barriers and challenges encountered through EBRD/SECO interventions	• EBRD/SECO project documentation (e.g., Final Review Memorandums, post-delivery Evaluation Reports) • Semi-structured KIIs with EBRD/SECO staff, project beneficiaries, and other stakeholders	• Identify progress toward intended outcomes • Identify external factors that may have hindered the achievement of outcomes • Analyze examples of progress where the mechanism for each intervention is known (i.e. acknowledged by stakeholders) or can be shown (through use of counterfactuals) to have contributed to the intended outcomes • Assess whether and how the mechanism adopted for each intervention has been effective

A.4 EFFICIENCY

In assessing the efficiency of EBRD's and SECO's water projects in Tajikistan, we focused on two evaluation questions. Appendix Table D lists these questions and presents a the intended approach to answering them.

Appendix Table D: Evaluation Questions for the Efficiency Criterion

Evaluation Question	Information Required	Information Source	Data Analysis Method
To what extent have the intervention, including its internal management and monitoring mechanisms, delivered outputs and outcomes in a cost-effective manner?	• Information on the disbursement of project funding • Information on the financial execution of project funding • Information on outputs and outcomes achieved or likely to be achieved • Understanding of EBRD/SECO internal management and monitoring mechanisms	• EBRD/SECO project documentation (e.g., ToR, Final Review Memorandums, post-delivery Evaluation Reports) or other internal documents with project funding information • Semi-structured KIIs with EBRD/SECO staff	• Analyze financial execution against output and outcome achievements • Identify external factors that may have increased the cost of interventions • Assess whether outputs and outcomes were achieved within budget • Assess whether and how EBRD/SECO internal management and monitoring mechanisms have supported cost-effectiveness
To what extent have the intervention, including its internal management and monitoring mechanisms, delivered outputs and outcomes in a timely manner?	• Information on milestone achievement • Information on outputs and outcomes achieved or likely to be achieved • Understanding of EBRD/SECO internal management and monitoring mechanisms	• EBRD/SECO project documentation (e.g., ToR, Final Review Memorandums, post-delivery Evaluation Reports) • Semi-structured KIIs with EBRD/SECO staff	• Determine dates in which output and outcome were completed or achieved against planned timelines • Identify external factors that may have delayed interventions • Assess whether outputs and outcomes were achieved within planned timelines • Assess whether and how EBRD/SECO internal management and monitoring mechanisms have supported hitting project timelines

¹⁰² This evaluation question will focus on the combination of “hard” (infrastructure investment) with “soft” technical assistance measures (corporate development and stakeholder participation), as well as the sequencing and coordination of the different activity streams.

A.5 IMPACT

Our assessment of the impact of EBRD's and SECO's interventions was structured around three proposed evaluation questions. Appendix Table E presents the evaluation questions we used to assess impact and our approach to answering them.

Appendix Table E: Evaluation Questions for the Impact Criterion

Evaluation Question	Information Required	Information Source	Data Analysis Method
To what extent have the interventions generated or are expected to generate 'higher-level effects'?	- Understanding of changes in access levels, quality, and resilience of WSS services since the initial EBRD/SECO intervention - Understanding of outcomes achieved through EBRD/SECO interventions	- EBRD/SECO project documentation (e.g., Final Review Memorandums, post-delivery Evaluation Reports) - Third party information (e.g., GoT sector reports, utility reports) - Semi-structured KIIs with EBRD/SECO staff, beneficiaries, and other stakeholders	- Analyze changes in access and quality levels of WSS services in the regions supported by EBRD/SECO - Identify improvements in the resilience of water and sanitation infrastructure - Assess the extent to which higher access, quality, and improved resilience levels can be attributed to EBRD/SECO interventions
Is there any emerging evidence that the interventions contribute to local economic development, including gender-sensitive income generation?	- Understanding of changes in economic development, particularly income levels - Historical information on income levels differentiated by gender - Understanding of outcomes achieved through EBRD/SECO interventions	- EBRD/SECO project documentation (e.g., Final Review Memorandums, post-delivery Evaluation Reports) - Third party information (e.g., GoT sector reports, utility reports) - Semi-structured KIIs with EBRD/SECO staff, beneficiaries, and other stakeholders	- Analyze changes in income levels and other relevant economic data - Assess the extent to which changes in income levels can be attributed to changes generated by EBRD/SECO interventions
Have the expected TI qualities been achieved or are likely to be achieved?	- Understanding of the expected TI per intervention - Information on the TI qualities achieved or likely to be achieved	- EBRD/SECO project documentation (e.g., ToR, Final Review Memorandums, post-delivery Evaluation Reports) - Semi-structured KIIs with EBRD/SECO staff	- Identify the TI qualities expected for each intervention - Identify progress toward achievement of TI qualities - Assess whether and how the interventions have contributed to the achievement of TI qualities

A.6 SUSTAINABILITY

The evaluation of the sustainability of EBRD's and SECO's water sector projects was based on three proposed evaluation questions. Appendix Table F lists the evaluation questions we ask to assess sustainability and our approach to answering them.

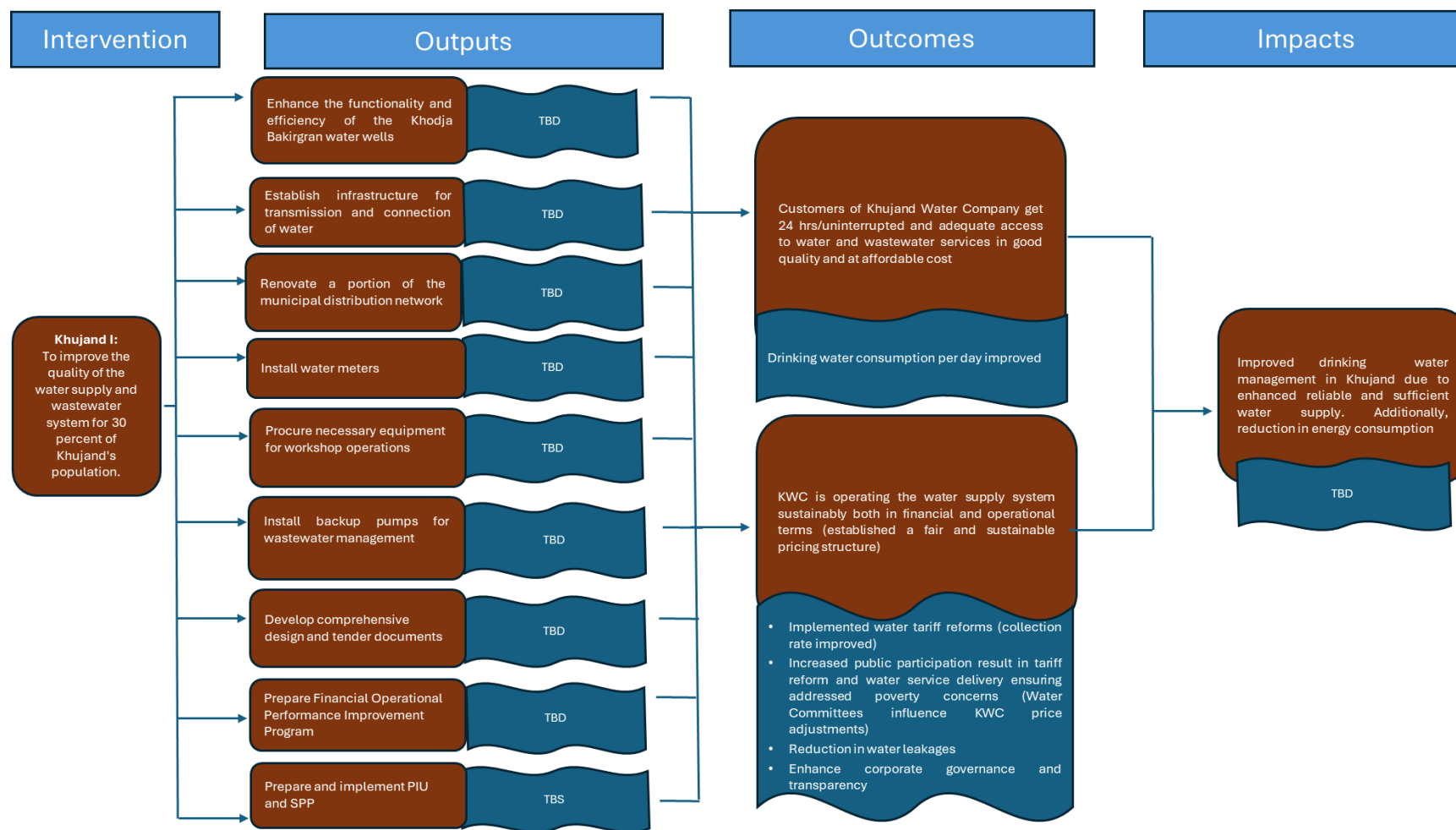
Appendix Table F: Evaluation Questions for the Sustainability Criterion

Evaluation Question	Information Required	Information Source	Data Analysis Method
To what extent have climate change externalities been adequately considered?	- Information on climate change mitigation and adaptation considerations in project design and implementation - Data on possible climate change impacts on Tajikistan's water sector	- EBRD/SECO project documentation (e.g., ToR, Final Review Memorandums, post-delivery Evaluation Reports) - Third party reports on climate change effects in Tajikistan - Semi-structured KIIs with EBRD/SECO staff, beneficiaries, and other stakeholders	- Identify likely impacts of climate change on Tajikistan's water sector - Identify climate change considerations in EBRD/SECO interventions - Assess whether and how climate change externalities have been incorporated into projects' design and implementation
To what extent are local beneficiaries capable and motivated (technical capacity, ownership) and have the financial resources to continue activities that contribute to sustaining benefits?	- Understanding of local beneficiaries' ownership of the activities needed after interventions - Information on local beneficiaries' organizational structures and capacity - Information on earmarked resources for activities related to EBRD/SECO interventions	- Third party reports (utility reports, GoT reports, local government reports) - Semi-structured KIIs with EBRD/SECO staff, beneficiaries, and other stakeholders	- Analyze local beneficiaries' ownership of the activities that contribute to sustained benefits - Identify financial resources earmarked by local beneficiaries, GoT, or local governments for activities that contribute to sustained benefits - Identify laws, policies, strategies that may contribute to sustaining benefits - Analyze capacity, organizational structures, and of the local beneficiaries in continuing activities that contribute to sustained benefits - Assess whether and how benefits of EBRD/SECO interventions have been sustained or are likely to be sustained
To what extent are contextual factors ¹⁰³ conducive to continuing activities that contribute to sustaining benefits?	Understanding of legislation, policies, or strategies of the water sector (at a national and/or local level)		

¹⁰³ For example, legislation, policies, and economic contexts.

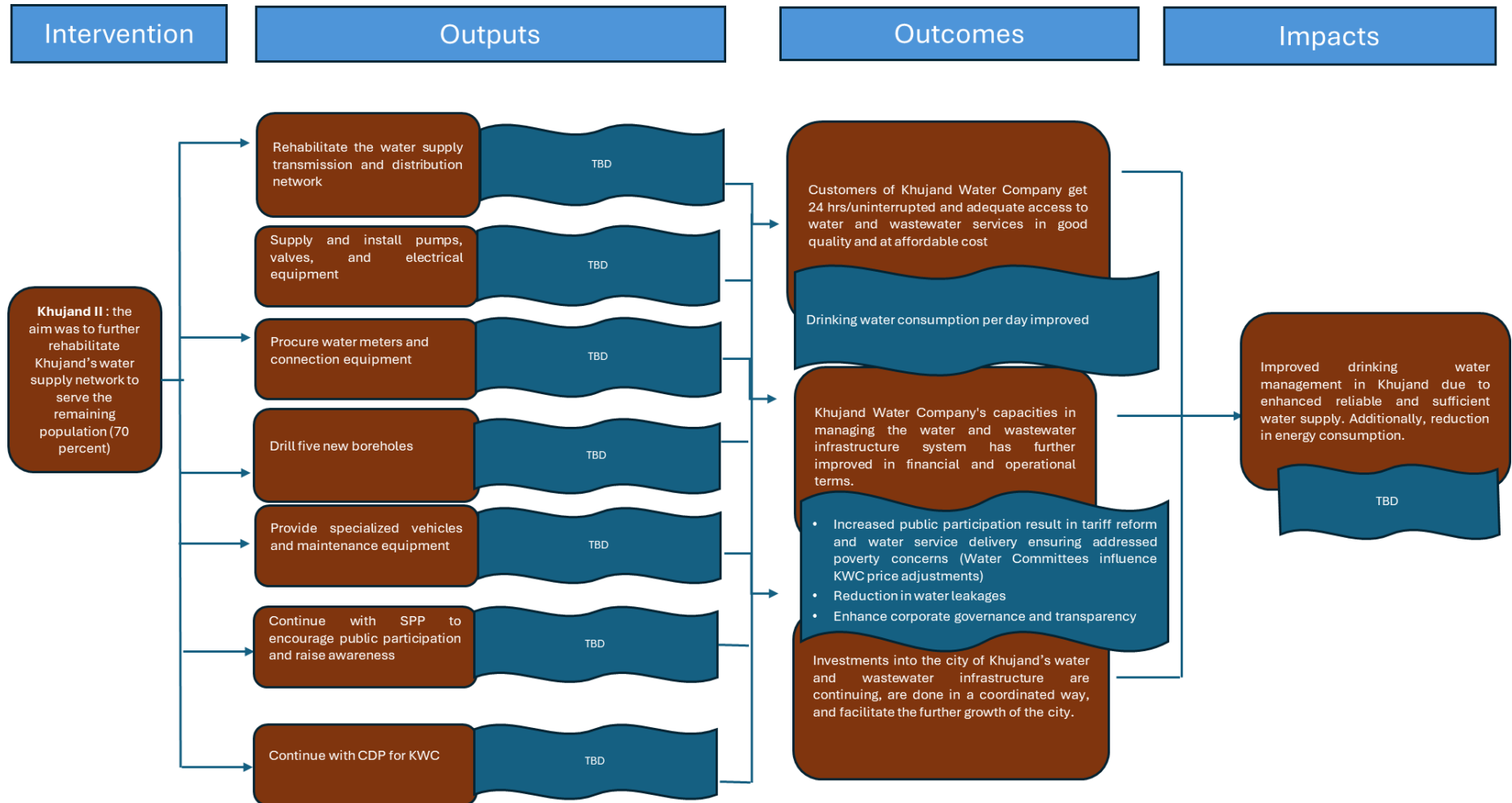
APPENDIX B PROJECT LOGFRAMES

Logframe for Khujand I¹⁰⁴



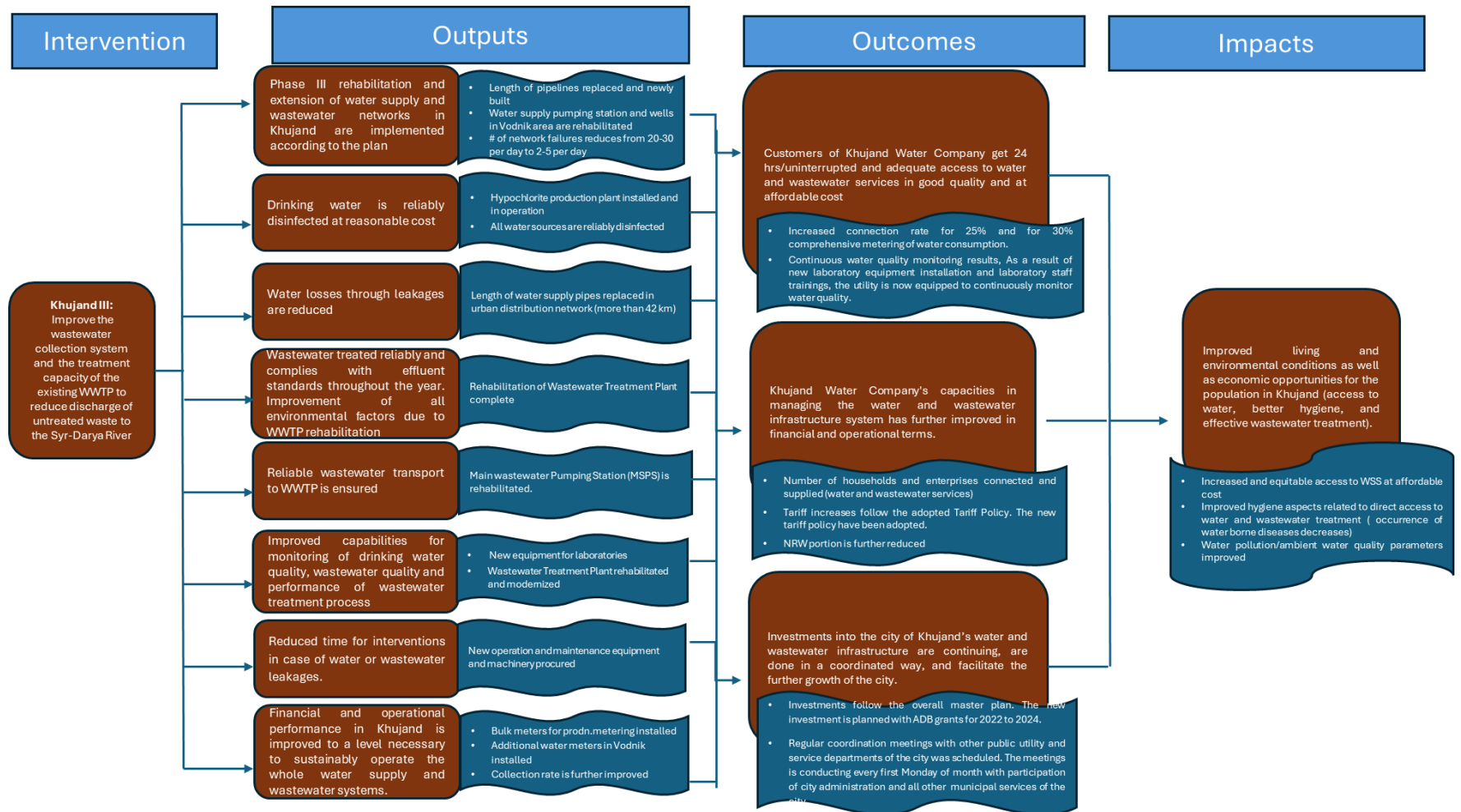
¹⁰⁴ Developed by DHInfrastructure

Logframe for Khujand II¹⁰⁵



¹⁰⁵ Developed by DHInfrastructure.

Logframe for Khujand III¹⁰⁶



¹⁰⁶ Based on tables provided by EBRD.

APPENDIX C DOCUMENTS RECEIVED FROM EBRD AND SECO

No	Title of the Document	Report Name	Date Of Production	Organization/Author
1	Khujand Water Phase I Water Supply Project PIU IR.pdf	Tajikistan, Khujand Water: Project Preparation and Implementation support services and stakeholder participation programme. Inception Report	May 2005	Corporate Solutions
2	Khujand Water Phase I Water Supply Project PIU FR.pdf	Tajikistan, Khujand Water: Project Preparation and Implementation support services and stakeholder participation programme Final Report	February 2010	Corporate Solutions
3	Khujand Water Phase II CDP IR.pdf	Inception Report. Khujand Water II - Corporate Development and City Support Programme for the City of Khujand and its water company. June 2009	June 2009	Corporate Solutions
4	Khujand Water Phase II CDP 5th QR.pdf	Progress Report (Oct. 2010 - March 2011)	April 2011	
5	Khujand Water Phase III Wastewater Project PIU IR. Pdf	Khujand Water Supply Improvement Programme (Phase III) Project Implementation Support. Inception Report (Final) Sep. 2016	Sept. 2016	Hollinger International Consultants
6	Khujand Water Phase III Wastewater Project PIU FR.pdf	Khujand Water Supply Improvement Programme (Phase III) Project	December 2021	Hollinger International Consultants

		Implementation Support. Final Report. Dec. 2021		
7	Khujand Water Phase III Wastewater Project CDP IR.pdf	Khujand Wastewater Project (Phase III) - Corporate Development and City Support Program. Inception Report, Sept. 2017	September 2017	Corporate Solutions
8	Khujand Water Phase III Wastewater Project CDP FR.pdf	Khujand Wastewater Project (Phase III) - Corporate Development and City Support Program. Draft Final Report, Jan. 2020	January 2020	Corporate Solutions
9	Khujand Water Phase III Wastewater Project FS Final Report.pdf	Khujand Wastewater rehabilitation project (phase III) Final report. July 2014	July 2014	Hollinger International Consultants
10	NTWRP PIU IR EBP extended	North Tajik Water Rehabilitation Project PIU Support. Extended Inception Report	Dec. 2011	Ernst Basler + Partner AG
11	NTWRP PIU FR EBP	North Tajik Water Rehabilitation Project PIU Support	June 2017	Ernst Basler + Partner AG
12	NTWRP PIU Interim IR	North Tajikistan Water Supply Rehabilitation Project -1. (Quarterly Report 1)	Oct. 2020	IC Infrastructure Consulting GmbH
13	North 1 RWC CDP FR	Project for water sector rehabilitation of Khatlon region and northern Tajikistan, Phase II : Tajik Water	Feb. 2017	Consulting Engineering Control Techniques LLC

		Sector Reform. Corporate Development Programme of Sue KMK's subsidiary water supply and sewerage company (SRWC-1) of towns and districts of region one of Sughd Province		
14	NTWRP II PIU IR	North Tajik Water II Rehabilitation Project (ID 43255) Water Supply and Wastewater systems in Istaravshan, Shakhriston, Zafarabad and Panjakent. PIU Support for project implementation. Inception Report	May 2014	Hollinger IC
15	NTWRP II PIU FR	North Tajik Water II Rehabilitation Project (ID 43255) Water Supply and Wastewater systems in Istaravshan, Shakhriston, Zafarabad and Panjakent. PIU Support for project implementation. Final Report	July 2022	Hollinger IC
16	Khatlon & North II CDP FR	Khatlon Water and North Tajik Water II Rehabilitation Projects: Tajik Water Sector Reform. Final/Project Completion Report	July 2017	CECT Infrastructure Consultancy Ltd
17	Khatlon & North II SPP IR	Water Rehabilitation Projects - Khatlon and North II	Dec. 2014	Sachsen Wasser/ CAIC Consulting

		Stakeholder Participation Program. Inception Report		
18	Khatlon & North II SPP FR	Water Rehabilitation Projects - Khatlon and North II Stakeholder Participation Program. Final Report	Oct.2016	Sachsen Wasser/ CAIC Consulting

APPENDIX D LIST OF STAKEHOLDERS INTERVIEWED

No	Entity	Interviewee (s)	Title/ Role	Date
1	Khujand Water Company	Bobaev Kh.	General Director	May 29 th , 2024
		Burkhanov Rakhmat Sayfullaevich	Deputy Director	
	EBRD	Jamshed Kholov	Task Team Leader	June 3, 2024
		Rafikjon Akilov	Analyst	
2	Corporate Solutions	Ebby Adhami	CDP Consultant (International)	June 24, 2024
4	Hollinger IC	Fayzali Hasanov	PIU Consultant (Local)	June 24, 2024
3	Fardis Consulting Co. Ltd.	Firdavs Akilov	CDP Consultant (Local)	June 25, 2024

APPENDIX E KHUJAND WATER PROJECT'S PLANNED OUTPUTS

The Khujand Water Project consisted of three phases, with each phase having three main components, including the infrastructure investment component implemented by the PIU, Corporate Development Program (CDP), and SPP. Total external financing for infrastructure rehabilitation investments and TA combined a loan from EBRD of approximately USD 6.34 million with a USD 12.36 million grant from SECO. In addition, the TAs were also co-funded by a USD 350,000 grant from Norway and USD 1.78 million from other international donor sources.¹⁰⁷

PHASE I (2004 – 2008)

EBRD and SECO began operations in Tajikistan in 2004 by co-financing the first phase of the Khujand Water Project. Phase I aimed to improve the reliability and quality of the water supply and wastewater system for 30 percent of Khujand's population. Infrastructure investments included replacing outdated equipment, such as pipes and pumps, and installing consumer water meters. Additionally, two TA components were financed to support the implementation of the first phase and enhance the financial and operational performance of the KWC. Phase I was completed in early 2008.¹⁰⁸

Infrastructure Investment

Phase I of the Khujand Water Project consisted of the following intended outputs, aiming to improve Khujand's WSS infrastructure assets, including:

- Enhancing the functionality and efficiency of the Khodja Bakirgan water wells
- Establishing infrastructure for the transmission and connection of water
- Renovating the municipal distribution network
- Implementing a system for metering water consumption
- Procuring necessary equipment for workshop operations
- Installing backup pumps for wastewater management
- Developing comprehensive design and documentation for the project.¹⁰⁹

TA Components

Phase I was supported by the implementation of two TA components. The first TA component commenced its activities in February 2005 with the primary objectives of assisting KWC in establishing a PIU and implementing a SPP.^{110,111} PIU's role was to guide KWC in developing and executing the investment program to improve the city's water supply infrastructure. The tasks of the TA consultants involved:

- Training KWC to establish the PIU and make it operational

¹⁰⁷ Figures subject to confirmation by EBRD and SECO.

¹⁰⁸ Khujand Wastewater Project (Phase III) Corporate Development and City Support Program. Inception Report, September 2017 (Corporate Solutions), page 5.

¹⁰⁹ EBRD, "Khujand Water Supply Improvement Project," accessed on November 22, 2023, <https://www.ebrd.com/work-with-us/projects/psd/khujand-water-supply-improvement-project.html>

¹¹⁰ The TA component was supported by consultants IBG Switzerland and Corporate Solutions UK.

¹¹¹ Khujand Water: Project Preparation and Implementation Support Services and Stakeholder Participation Programme. Inception Report, May 2005 (Corporate Solutions), page 5.

- Preparing designs and tender documents
- Delivering guidance in the procurement process
- Implementing reporting procedures
- Supervising construction and installation works.

The PIU was also responsible for executing the SPP component. The SPP aimed to facilitate dialogue between customers and KWC on the provision of water and wastewater services and to raise consumer awareness on implementing the Khujand Water Project I and water use issues. The scope of the SPP activities therefore focused on establishing regular communication channels and cooperation between KWC, local authorities, and customers. It resulted in establishing and supporting Water User Committees (WUCs) at the level of each micro-region, where members of city administration and local committees (Mahallas) ensured the interests of different groups were considered in the decision-making process. The SPP strategy also provided training sessions to promote KWC transparency in decision-making and raised consumer awareness through education campaigns. The SPP work concluded in December 2006.¹¹²

FOPIP was the second TA component of Phase I.^{113,114} Activities involved identifying possible improvements to KWC's operational and financial performance, implementing an accounting system compliant with IFRS, developing a comprehensive tariff reform plan, and introducing the commercialization of KWC's operations. The consultants also prepared a PSA that established a formal agreement between the municipality and KWC. According to the PSA, the municipality would be responsible for effectively planning and managing financial and other resources to ensure timely payment for water supply and wastewater services provided by the KWC. It would also regulate the policy for social protection of those unable to pay for services. In return, KWC would ensure continuous and considerable improvements in service level and quality.¹¹⁵

Financing Overview

The financing of Phase I consisted of an EBRD sovereign guaranteed loan with the Governments of Switzerland and Norway providing grant co-funding for the infrastructure rehabilitation program and TA components. The total cost of Phase I was USD 4.7 million.¹¹⁶ The external financing for the infrastructure rehabilitation and TA included a USD 3.15 million grant from SECO, a USD 1.2 million loan from EBRD, and a USD 350,000 grant from Norway for the FOPIP implementation. EBRD's loan was backed by a sovereign

¹¹² Khujand Water: Project Preparation and Implementation Support Services and Stakeholder Participation Programme. Final Report, February 2010 (Corporate Solutions), page I.1.

¹¹³ This TA was executed by AS Talinna Vesi Estonia.

¹¹⁴ At the time of writing the inception report we do not have access to the TA reports executed by the AS Talinna Vesi Estonia *Financial and Operations Performance Improvement Program (FOPIP)*.

¹¹⁵ Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report, June 2009 (Corporate Solutions), page 5.

¹¹⁶ Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report, June 2009 (Corporate Solutions), page 2.

guarantee from Tajikistan.¹¹⁷ Appendix Table G shows an overview of the infrastructure investment allocations based on the initial procurement plan provided by EBRD.¹¹⁸

Appendix Table G: Phase I Procurement Plan for Infrastructure Investment ¹¹⁹

No	Description	EBRD Loan (USD 000)	SECO Grant (USD 000)	Total (USD 000)
A	Workshop and communication equipment	200		200
B1	Pipes, fitting, valves for transmission pipelines	Unknown	Unknown	1,330
B2	Supply and install water supply pumps	200		200
C2	Civil works and installations for distribution network		200	200
C3	Water meters and connection equipment		1,000	1000
C4	Installation of water meters		73	73
D	Emergency wastewater pump supply and repairs		300	300
	Total	400	1,573	3,303

Source: Consultants obtained the data from Phase I PIU Inception Report

¹¹⁷ EBRD, “Khujand Water Supply Improvement Project,” accessed on November 22, 2023, <https://www.ebrd.com/work-with-us/projects/psd/khujand-water-supply-improvement-project.html>

¹¹⁸ Khujand Water: Project Preparation and Implementation Support Services and Stakeholder Participation Programme. Inception Report, May 2005 (Corporate Solutions), page I.1.

¹¹⁹ We request the EBRD team to provide financial information for the infrastructure and TA components, including the source of funding, provided at the beginning of the Khujand Water Project I to fill in the missing gaps.

PHASE II (2008 – 2014)

EBRD launched Phase II in 2008, building on the progress made during Phase I. The aim was to further rehabilitate Khujand's water supply network to serve the remaining population. The infrastructure rehabilitation investments were supported by separate TA components. Phase II was completed in 2014.¹²⁰

Infrastructure Investments

In the second phase of the Khujand Water Project, it is our understanding that the main investment components included:

- Rehabilitation of water supply transmission and distribution network
- Supply and installation of pumps, valves, and electrical equipment
- Procurement of water meters and connection equipment
- Drilling five new boreholes
- Provision of specialized vehicles and maintenance equipment.^{121,122}

TA Components

TA in Phase II aimed to build on the progress made in the previous phase in the area of corporate development focusing specifically on the sustainability of the results.¹²³ TA activities began in April 2009. Consultants had three key priorities: the CDP for KWC that focused on further enhancing KWC's commercialization efforts by improving tariff and planning processes, SPP, and City Support Program for the City of Khujand to implement the PSA. The following tasks were agreed during Phase II:

- Implementing a robust business planning procedure to create a ten-year business plan
- Enhancing accounting and financial reporting protocols and systems based on the weaknesses highlighted by the KWC's auditors
- Establishing KPIs to improve the management reporting process
- Suggesting operational improvements to reduce water losses and improve revenue collection
- Preparing the implementation of PSA between the municipality and KWC.

CDP consultants were also responsible for implementing the SPP objectives in the areas of the cities that were not implemented in the first TA.¹²⁴ During Phase I, eight WUCs were created. The consultants continued to expand the number of WUCs, facilitated meetings with the local stakeholders, Advisory Committees, and KWC to gather input, build consensus and strengthen partnerships to be able to provide a transparent and effective decision-making process on service delivery and water pricing. The consultants also continued with the implementation of SPP information campaigns on the Khujand Water Projects and adverse impact of poor water services.¹²⁵

¹²⁰ Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report, June 2009 (Corporate Solutions), page 3.

¹²¹ Khujand Water Phase II CDP IR

¹²² Waiting from EBRD team to provide Phase II Project Implementation Unit Inception and Final Reports.

¹²³ The TA component was supported by Corporate Solutions UK to implement the CDP.

¹²⁴ Khujand Water Phase II CDP IR.

¹²⁵ Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Progress Report 5 (Corporate Solutions), page 6.

Financing Overview

Financing for the continued infrastructure rehabilitation and TAs for Phase II included a EUR 1.5 million loan from EBRD and a EUR 3.48 million grant from SECO. The total cost of Phase II was EUR 4.98 million.¹²⁶ Appendix Table H presents the infrastructure investments of Phase II. The investments were also supported under a separate TA component on a grant basis of EURO 1.10 million. Appendix Table I shows the grant funding for the TA components.^{127 128}

Appendix Table H: Phase II Infrastructure Investment

No	Description	Total (EURO 000)
1	Rehabilitation of water supply transmission and distribution network	1.370
2	Supply and installation of pumps, valves, and electrical equipment	1.030
3	Installation of water meters and connection equipment	660
4	Drilling five new boreholes	240
5	Procure specialized vehicles and maintenance equipment	230
	Total	3,530

Source: Consultants obtained the data from Phase II CDP Inception Report

Appendix Table I: Phase II TA Funding Allocation

No	Description	Total (EURO 000)
1	Corporate Development, Corporate Development and City Support Program	500
2	Implementation Support to the PIU	600
	Total	1,100

Source: Consultants obtained the data from Phase II CDP Inception Report

PHASE III (2016 – 2019)

The final phase of the Khujand Water Project focused on improving the wastewater collection system and to improve the treatment capacity of the existing wastewater treatment plant (WWTP) to reduce the discharge

¹²⁶ Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report, June 2009 (Corporate Solutions), page 2.

¹²⁷ Khujand Water II. Corporate Development and City Support Programme for the City of Khujand and its Water Company. Inception Report, June 2009 (Corporate Solutions), page 3.

¹²⁸ We request the EBRD team to provide source of funding information for the infrastructure and TA components provided at the beginning of the Khujand Water Project II.

of untreated waste to the Syr Darya River.¹²⁹ Improvements to the water supply network were also continued as per previous phases. Phase III commenced with the signing of the loan agreement by EBRD and KWC in October 2014 and was completed in 2019.

Infrastructure Investments

In the third phase of the Khujand Water Project, according to the EBRD and KWC loan agreement, the main investment components included the following:

- Rehabilitation and modernization of the existing WWTP and the main wastewater pumping station
- Replacement of sewerage collectors and pipes
- Rehabilitation of the water supply network
- Installation of bulk meters for district water management
- Supply and installation of hypochlorite production plant
- Procurement of operation and maintenance equipment and machinery
- Refurbishment of laboratories.

TA Components

PIU support began in July 2016, continuing its assistance to KWC to manage all procurement as well as construction and installation of the investments.¹³⁰ At this stage, PIU had been operational for eight years with local staff expertise being drawn in according to the project implementation needs. The TA consultants had only a supporting and advisory role.

The CDP and City Support Program TA component continued during Phase III in line with capital investments.¹³¹ The TA agreement was signed in June 2017. During the TA inception phase, consultants emphasized that the priority must be to understand the reasons for weak financial performance of KWC and to agree on a strategy that can address them, reestablish previously installed measures to increase transparency and accountability, continue to help the administration to introduce tariff policies that will allow KWC earn a reasonable return, and to address the lack of reliable economic data on KWC activities. The TA also continued—as in Phase I—to raise awareness of water conservation and public participation topics, and worked with the municipality's administration to ensure tariff regulation, affordability, and timely bill payments following the guidance developed under the FOIP.¹³²

Financing Overview

The financing for Phase III included grants from the EBRD-SECO's North Tajik Water Projects and the Khujand Water Project accounts. The total financing for Phase III was administered by EBRD and executed

¹²⁹ Khujand Water Supply Improvement Programme (Phase III) Project Implementation Support. Inception Report, September 2016, page 7.

¹³⁰ The PIU component was supported by HOLINGER International Consultants and its subcontractors Sugdshahrofar Design Institute.

¹³¹ TA component was supported by Corporate Solutions UK.

¹³² Khujand Water Supply Improvement Programme (Phase III) Project Implementation Support. Inception Report, September 2016, page 7.

by KWC.¹³³ Phase III's priority investments were financed by a USD 3.5 million loan from EBRD and a USD 5.4 million grant from SECO.¹³⁴ Appendix Table J shows the capital investments according to the loan agreement signed between EBRD and KWC, and Appendix Table K breaks down the TA fund allocation.¹³⁵

Appendix Table J: Capital Investments according to the 2014 Loan Agreement

No	Description	Loan (USD 000)	Grant (USD 000)	Total (USD 000)
1	Rehabilitation of WWTP	715	2,265	2,980
2	Rehabilitation of Wastewater Pumping Station	350	350	700
3	Replacement of Wastewater Collectors	500	1,405	1,905
4	Rehabilitation of water supply networks (slice and package)	500	1,330	1,830
5	Bulk meters for district water management	600		600
6	Hypochlorite production plant	250		250
7	Operation and maintenance equipment and machinery	400		400
8	Refurbishment of laboratories	150		150
9	Front end fee	35		35
	Total	3,500	5,350	8,850

Source: Based on the PIU Report for Khujand Phase III

¹³³ Khujand Water Supply Improvement Programme (Phase III) Project Implementation Support. Inception Report, September 2016, page 7

¹³⁴ Inception Report, Sept. 2016.

¹³⁵ We request the EBRD team to provide source of funding information for the TA components provided at the beginning of the Khujand Water Project III.

Appendix Table K: Phase III TA Funding Allocation

No	Description	Total (USD 000)
1	Corporate Development, Corporate Development and City Support Program	Unknown
2	Implementation Support to the PIU	552
	Total	

Source: Based on the EBRD Project Summary Description

APPENDIX F WATER AND SANITATION SECTOR KPIS

We will consider using, as possible outcome and impact indicators, a wide range of operational and financial indicators typically used for water and sanitation system. The categories of indicators, and examples of some of the most common, are described below. We know that data for many of these indicators may not be available in Khujand and the North Tajik service areas. We list them here only to show the range of possible indicators we will consider in measuring outcomes and impacts, beyond those already included in the Project logframes.

SERVICE QUALITY INDICATORS

What is listed below are, broadly defined, service quality indicators. Some of them could be broken down into more specific indicators. For example, for unplanned interruptions to water supply, one could look at the *frequency* and also the *duration* of the interruptions.

Examples of such indicators in the water sector include:

- Population in service area with direct connections to the water network
- Population in service area within a certain distance from a standpipe (and without direct connection)
- Average waiting time to receive a new connection
- Water quality standards
- Hours per day of water availability
- Adherence to pre-announced schedule of availability
- Water pressure
- Restrictions on water usage – e.g. due to hosepipe bans because of drought conditions
- Unplanned interruptions to water supply
- Advance notice of planned interruptions
- Time taken for service provider to respond to a burst or leak
- Time taken for service provider to fully repair a burst or leak.

Examples of such indicators in the wastewater sector include:

- Population in service area connected to the sewerage network
- Population with access to septic tank pumping service
- Wastewater effluent standards
- Flooding from sewers
- Time taken for service provider to respond to blockage or overflows
- Time taken for service provider to fully repair blockage or flooding.

There is then a cross-cutting set of customer service indicators which apply to both water and sanitation services. These include:

- Service provider response to billing enquires
- Service provider response to written complaints
- Service provider response to complaints presented in other ways (on the phone or in person)
- Percentage of population with working metered connections

- Frequency of meter reading and billing for metered customers
- Time taken for service provider to answer telephone calls.

INDICATORS ON ASSET CONDITION AND RELIABILITY

Indicators related to asset condition and reliability take one step back from service quality indicators and look at the system's physical infrastructure. In water and wastewater systems, the main concern is with the condition of the networks. Some of the indicators in this category include:

- Available production capacity
- Condition of the pipes in the network (e.g. proportion of the network in different well-defined grades of asset condition)
- Water main burst rate per km of main
- Sewer blockages, overflows, or spills.

EFFICIENCY INDICATORS

The idea underlying efficiency indicators is the relation between outputs and inputs: greater efficiency means more output (in some sense) for a given level of inputs or the same output for a lower level of inputs. Some of the indicators get at this directly (e.g. electricity used for pumping); others more indirectly (e.g. high levels of infiltration into or out of the wastewater network mean that more operating or capital inputs will be needed in the wastewater treatment system). Some of the indicators in this category include:

- kWh of electricity used for each cubic meter of water pumped
- O&M cost per cubic meter of water sold (disaggregated by type of cost)
- Number of service provider staff per 1000 customers
- NRW
- Total cash collected as a proportion of total revenue billed (collection efficiency)
- Infiltration into and out of the sewerage system.

FINANCIAL INDICATORS

What distinguishes financial indicators is that they depend to a large degree on the *prices* of inputs and water sold and they all try to assess, in one way or another, the current or future financial health of the service provider. Some of the indicators in this category include:

- Liquidity – total current assets divided by total current liabilities (current ratio)
- Cost recovery – total revenue billed to customers divided by the costs in question (e.g. if the denominator is O&M costs, the ratio indicates the degree to which O&M costs are covered by tariffs)
- Debt service cover ratio (an indicator of solvency) – total “free cash flow” divided by total debt service payments (lenders will often use cover ratio values in loan covenants – the regulator should be concerned if it is likely that a service provider will default on its loans)
- Accounting rate of return – annual profit divided by capital employed (debt plus equity) or, as an alternative measure, divided by assets.

OTHER ASPECTS OF SERVICE PROVIDER MANAGEMENT

This category is a catch-all for indicators that reveal things about the management practices of the service provider – beyond efficiency in the sense described in the section above. Some examples include:

- Maintenance costs as a percentage of total O&M costs
- Total planned maintenance costs as a proportion of total maintenance costs (on an annual basis)
- Annual rate of water pipe or sewer pipe replacement (%)
- Total cost of services contracted out to the private sector as a proportion of total O&M costs.