



Technical Assistance Report

Project Number: 51240
October 2017

Republic of Uzbekistan: Second Tashkent Province Water Supply Development Project

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 27 October 2017)

Currency unit	–	som (Som)
Som1.00	=	\$0.0001239217
\$1.00	=	Som 8,069.610000

ABBREVIATIONS

ADB	–	Asian Development Bank
CSA	–	Agency ‘ <i>Kommunkhizmat</i> ’
EA	–	Executing Agency
MHCS	–	Ministry of Housing and Communal Services
O&M	–	operation and maintenance
TPS	–	Tashkent Provincial Suvokova
TRTA	–	transaction technical assistance
WSS	–	water supply and sanitation

NOTES

In this report, "\$" refers to US dollars.

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TRANSACTION TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 51240-002	
Project Name	Second Tashkent Province Water Supply Development Project	Department /Division	CWRD/CWUW
Nature of Activity	Project Preparation	Executing Agency	Agency "Kommunkhizmat" (CSA) formerly Uzbekistan Communal Services Agency "Uzkommunkhizmat"
Modality	Regular		
Country	Uzbekistan		
2. Sector		Subsector(s)	
✓ Water and other urban infrastructure and services	Urban water supply	ADB Financing (\$ million)	
			0.80
		Total	
		0.80	
3. Strategic Agenda		Subcomponents	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change Information	
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns	Climate Change impact on the Project	Medium
4. Drivers of Change		Components	
Governance and capacity development (GCD)	Organizational development	Gender Equity and Mainstreaming	
Knowledge solutions (KNS)	Knowledge sharing activities	Effective gender mainstreaming (EGM)	✓
Partnerships (PAR)	Civil society organizations Implementation Private Sector		
Private sector development (PSD)	Public sector goods and services essential for private sector development		
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Rural	Medium
Household Targeting	No	Urban	Medium
SDG Targeting	Yes		
SDG Goals	SDG6, SDG8, SDG11, SDG13		
6. Risk Categorization		Low	
7. Safeguard Categorization		Safeguard Policy Statement does not apply	
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.80	
Transaction technical assistance: Technical Assistance Special Fund		0.80	
Cofinancing		0.00	
None		0.00	
Counterpart		0.00	
None		0.00	
Total		0.80	

I. THE ENSUING PROJECT

A. Rationale

1. The government of the Republic of Uzbekistan has requested the Asian Development Bank (ADB) to provide support by lending for the proposed Second Tashkent Province Water Supply Development Project.¹

2. Uzbekistan is one of Central Asia's fastest growing economies. The nation's key economic driver is Tashkent Province, the nation's largest urban agglomeration and most economically advanced region.² Together with Tashkent City, the nation's capital, the province generates almost 30% of the nation's total gross domestic product (GDP). The province is experiencing rapid urban growth, notably along its southwestern urban corridor, however its potential is being constrained by a pervasive shortage of urban services, particularly in water supply and sanitation (WSS).

3. Currently, many of the province's consumers endure irregular, intermittent, and poor quality water. Much of the province's water supply infrastructure has deteriorated significantly, resulting in unreliable services, high water losses, and heightened pollution risks. In many districts, households and businesses are hampered by frequent water supply interruptions, forcing them to use alternative water supply sources. Historically, the WSS sector has endured fragmented and dysfunctional regulatory and institutional frameworks, limited sector planning capabilities, weak coordination and oversight, and unclear and ineffective regulatory compliance mechanisms. WSS service delivery institutions have historically performed poorly. Funding constraints have also been acute, exacerbated by low tariff levels and tariff collection efficiencies, limited public funding, and a virtually absent private sector. Significant inequalities also exist in WSS service provision, particularly between urban and rural areas, and stakeholder involvement in the sector has been limited.

4. The districts of Yangiyul and Chinaz, the two districts of Tashkent Province targeted by this project, also suffer from these challenges. Yangiyul district's groundwater-sourced water supply systems are severely dilapidated, with three of its five larger systems operating below 50% capacity, and an estimated 70% of the pumping equipment of its 20 smaller water supply systems requiring replacement.³ In Chinaz, only 8 of the 13 production wells of its 3 main wellfields are operational.⁴ Although some areas in Chinaz reportedly enjoy adequate water availability, other urban areas suffer from water rationing. These deficiencies severely undermine WSS service standards, resulting in deteriorating public health conditions, water access inequality, and constrained economic growth.

5. **Current Intervention.** The government, through the assistance of the Asian Development Bank (ADB),⁵ has responded to sector challenges by reorganizing and consolidating WSS sector institutions, and implementing sector-wide management, financial and cost recovery reforms.

¹ The project is included in the country operations business plan, 2018-2020, for Uzbekistan.

² Tashkent Province's population is estimated to be 5.253 million (www.citypopulation.de).

³ Coupled with this are water quality concerns, as available water quality data indicates that total dissolved solids in groundwater at one of its wellfields is close to the maximum allowable limit for drinking water.

⁴ In addition, about half of its transmission and distribution mains require immediate replacement, with many of its transmission main terminal branches being out of service for over 20-years.

⁵ The ADB and government have collaborated closely since 2000 with over \$500 million invested in the rehabilitation and expansion of WSS infrastructure. This assistance has benefitted over five million residents, providing them with safer and more reliable WSS services.

Initial reforms have focused on institutional consolidation and strengthening, and were supported by the ADB-financed Water Supply and Sanitation Services Investment Program in 2009–2018.⁶ In the second phase of the reforms, the government is overhauling the wider WSS institutional framework, notably through the creation of a new ministry, the Ministry of Housing and Communal Services (MHCS).⁷

6. These reforms are yielding substantial improvements in Tashkent Province through the operationalization and capacity strengthening of the Tashkent Provincial *Suvokova* (TPS), which is responsible for all WSS services throughout the province.⁸ The TPS is also being supported through the ADB-funded Tashkent Province Water Supply Development Project,⁹ which is (i) improving the financial, operational and system management of the TPS, and (ii) revitalizing the water supply systems of Kibray and Zangiota, two of the four districts of the Kadiyra regional water supply system that supplies water to an important economic growth corridor, extending from Tashkent City to the district of Chinaz at the southwest.

7. The proposed project, which is the second phase of the Tashkent Province Water Supply Development Project, will revitalize the water supply systems of the other two districts of the Kadiyra regional water supply system, namely Chinaz and Yangiyul.¹⁰ It will complement the first phase of the project to provide reliable and sustainable water supply services along the entire economic growth corridor, which has been prioritized for water supply improvements due to its economic importance, proximity to regional water sources, and poor WSS standards. In addition, the proposed project will provide supplemental capacity support to further increase the sustainability of the TPS. A separate knowledge and support technical assistance (KSTA), to be financed by the People's Republic of China (PRC) Fund, will also support the strengthening of overall policy and planning in the WSS sector.

B. The Proposed Project

8. The project accords with the ADB Water Operational Plan 2011-2020,¹¹ and is included in the country operations business plan, 2018-2020, for Uzbekistan. It is aligned with the following impact: improved health and living conditions in Tashkent Province. The expected outcome of the project is improved and expanded access to reliable and affordable water supply services in the Chinaz and Yangiyul districts. The outcome will be achieved through the following outputs: (i) water supply system rehabilitated and operational in the Chinaz and Yangiyul districts, and (ii) efficiency and sustainability of TPS and its Chinaz and Yangiyul district branches improved. The project will also strengthen the project management and implementation capacity of TPS.

⁶ Lessons learned from previous ADB experience include the need to (i) reduce project commencement delays due to lengthy government approval procedures, (ii) ensure project coordination unit staff salaries are competitive and include incentives, (iii) adopt least-cost design and implementation solutions, and (iv) provide training for project implementation personnel.

⁷ The MHCS manages government policy and interdepartmental coordination for housing and other communal services sectors, including WSS, designs and implements infrastructure programs, is instrumental in improving regulatory frameworks, and arranges and coordinates training and vocational development initiatives. Reporting directly to the MHCS is the Agency "*Kommunhizmat*" (CSA), which is responsible for the implementation of ADB and other externally funded projects

⁸ The TPS has progressed rapidly to implement key reforms: completing inventories of its district branches, expanding its consumer base, increasing tariffs and improving tariff collection efficiencies, absorbing smaller water supply systems, and recruiting key personnel.

⁹ ADB. 2016. Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Uzbekistan: Tashkent Province Water Supply Development Project. Manila.

¹⁰ Project water sources will include surface water extraction from the Chirchiq River, supplemented by groundwater extraction from nearby aquifers.

¹¹ Including its consistency with its results framework impact and outcomes.

C. Proposed Financing Plans and Modality

9. The total project cost is estimated to be \$173.0 million. The government has requested ADB for a loan of approximately \$143.0 million, with the exact amount to be confirmed following completion of project preparatory and feasibility activities. Co-financing opportunities will be discussed during the project preparation. The indicative financing plan is in Table 1.

Table 1: Indicative Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Ordinary capital resources (Concessional loan)	143.0	82.7
Government ^a	30.0	17.3
Total	173.0	100.0

^a Government contribution includes taxes and duties.

Source: Asian Development Bank estimates.

D. Proposed ADB Financing and Linkage with Country Business Operations Plan

10. The proposed project is included in the country operations business plan, 2018-2020, for Uzbekistan.

II. THE TECHNICAL ASSISTANCE

A. Justification

A transaction technical assistance (TRTA) will be required for feasibility assessment and project preparation. In accordance with ADB requirements, this will (i) design and implement field surveys and conduct analyses; (ii) complete institutional, financial, economic and procurement assessments; (iii) conduct safeguards due diligence; (iv) prepare a feasibility assessment report incorporating technical, institutional, financial, economic, gender, social, and environmental documentation,¹² and (v) facilitate initial project implementation.

B. Outputs and Activities

11. **Output 1: Water supply system rehabilitated and operational in the Chinaz and Yangiyul districts**, including the construction or rehabilitation of least cost water supply infrastructure incorporating water intakes, water mains, water distribution systems, consumer connections and other water supply infrastructure.

12. **Output 2: Efficiency and sustainability of TPS and its Chinaz and Yangiyul district branches improved**, by establishing benchmarking, improving strategic planning, exploring the potential to commercialize TPS, and introducing advanced IT technology in TPS operations and management.

13. Project management and implementation capacity will also be strengthened, including the engagement of international project management consultants, and provision of trainings.

14. Consultants will be recruited through output-based contracts to implement the TRTA. The major outputs and activities of the TRTA are summarized in Table 2.

¹² Environmental impacts will be considered, including the potential impacts of wastewater, which is to be addressed in subsequent investment phases.

Table 2: Summary of Major Outputs and Activities

Major Outputs	Delivery Dates	Key Activities with Milestones
1. Inception report	February 2018	1.1 Review of existing project and policies 1.2 Submission of workplan and activity timeline
2. Interim report	March 2018	2.1 Field assessments, surveys, analyses 2.2 Submission of due diligence reports including technical, institutional, financial, economic, procurement, environmental, social, gender and involuntary resettlement
3. Draft final report	April 2018	3.1 Submission of revised due diligence reports and draft RRP linked documents
4. Final report	October 2018	4.1 Completion of RRP linked documents 4.2 Support to enhance project readiness and implementation

RRP = Report and Recommendation of the President to the Board of Directors

Source: Asian Development Bank.

C. Cost and Financing

15. The TRTA is estimated to cost \$1.0 million equivalent, of which \$0.8 million will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-VI). The key expenditure items are listed in Annexure 1. The TRTA proceeds shall be disbursed in accordance with the ADB TA Disbursement Handbook (May 2010, as amended from time to time). The government will provide counterpart support in the form of counterpart staff and other in-kind contributions. The government was informed that approval of the TRTA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

16. The ADB will administer the TRTA. The Urban Development and Water Division of the Central and West Asia Department will select, supervise and evaluate the consultants. The TRTA implementation period will be from November 2017 to September 2019. The CSA will be the lead counterpart agency for the TRTA. The consultants will report to the ADB and the CSA, and will liaise closely with other government agencies as required. The CSA will: (i) appoint a project director/coordinator and counterpart staff, who will work closely with the consultants and support them as required, and (ii) provide project-related data, information and technical support as required.

17. ADB will engage the individual consultants in accordance with ADB Procurement Policy (2017, as amended from time to time) and the associated Project Administration Instructions/TA Staff Instructions. Any equipment purchased under the TRTA project will be turned over to the CSA at the completion of the TRTA. ADB will be the executing agency. It will administer the TRTA (including the engagement of individual consultants) in coordination with the CSA, which will be the implementing agency.

18. The proposed TRTA processing and implementation schedule is listed in Table 3.

Table 3: Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	November 2017 – September 2019		
Executing agency	ADB		
Implementing agencies	CSA		
Consultants	To be selected and engaged and managed by ADB		
	Individual	38 person-months	\$0.430 million
	International (Individual)	18 person-months	\$0.360 million
	National (Individual)	20 person-months	\$0.070 million
Procurement	To be procured by consultants, and ADB		
	Shopping	1	\$0.025 million
Advance contracting and retroactive financing	Not applicable		
Disbursement	The TRTA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).		
Asset turnover or disposal arrangement upon TRTA completion	Equipment and goods purchased through the TRTA will be handed over to the executing agency in accordance with ADB's Administrative Order Number 4.02.		

ADB = Asian Development Bank; CSA = Agency "Kommunhizmat"; TRTA = transaction technical assistance
Source: Asian Development Bank estimates.

19. **Consulting services.** It is expected that 18 person-months of international and 20 person-months of national consultants are required. In view of the business environment and following previous project practices, all consultants will be recruited individually to prepare documents for technical feasibility, financial and economic viability, safeguards and capacity assessment and strengthening.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
A. Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	360.0
ii. National consultants	70.0
b. Out-of-pocket expenditures	
i. International and local travel	93.0
ii. Reports and communications	15.0
2. Equipment ^b	45.0
3. Surveys	130.0
4. Training, seminars, and conferences	45.0
5. Miscellaneous administration, office accommodation & support costs ^c	28.0
6. Contingencies	14.0
Total	800.0

Note: The technical assistance (TA) is estimated to cost \$0.800 million, of which contributions from the Asian Development Bank are presented in the table above.

The government will provide counterpart support in the form of counterpart staff and other in-kind contributions.

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-VI).

Source: Asian Development Bank estimates.

^b Desktop and laptop computers with software, Multifunction printer (printer, copy, fax and scanner), Lab Testing Equipment, Office furniture and fixtures.

^c This will cover office rental and office supplies and stationary.

**OUTLINE TERMS OF REFERENCE
SECOND TASHKENT PROVINCE WATER SUPPLY DEVELOPMENT PROJECT**

1. The TRTA team will consist of 11 international and 8 national consultants. Due to the complexity of the project and the tight processing timeline, these consultants will be recruited on an individual basis. The total input will be 18.5 international person-months and 20 national person-months. ADB will recruit individual consultants in accordance with ADB's Procurement Policy (2017, as amended from time to time) and the associated Project Administration Instructions/TA Staff Instructions.

Summary of Consulting Services Requirement

No.	Expertise	Inputs (PM)
International		
1	Team Leader and Water Supply Engineer	4
2	Institutional Specialist (2 positions)	3
3	Project Financial Specialist	2
4	Project Economist	1
5	Environment Specialist	2
6	Social Safeguard (Resettlement) Specialist	1.5
7	Social Development and Gender Specialist	1
8	Climate Change Specialist	1
9	Project Management Specialist (2 positions)	3
Subtotal		18.5
National		
1	Municipal Civil Engineer (Technical reviewer)	2
2	Water Supply Engineer (2 positions)	6
3	Hydraulic Engineer (system simulation expert)	1
4	Project Financial and Economy Specialist	3
5	Procurement Specialist	3
6	Social Development and Gender Specialist	3
7	Resettlement Specialist	2
Subtotal		20

Source: ADB staff estimates.

A. INTERNATIONAL CONSULTANTS

2. **Team Leader/Water Supply Engineer** (4 person-months) - Under the FS, the team leader and will carry out the following tasks:

- (i) coordinate, manage, and supervise the overall project activities of the consulting team;
- (ii) liaise with Communal Services Agency, Tashkent Province *Suvokova* Public Water Supply Company, other ministries and other relevant government agencies, ADB as well as other project stakeholders; keep representatives of both the executing agency (EA) and implementing agency (IA) well informed on alternative development options, perspectives and of any other potential difficulties that could arise at any time during the preparation of the FS;

- (iii) prepare activity flow charts and revised personal assignment schedules; ensure the quality and timely delivery of the required deliverables, workshops, and other outputs as set in the activity charts;
- (iv) ensure that standards and procedures adopted in FS are conform with national norms and international standards as required;
- (v) provide support to and advise ADB missions, lead and participate in meetings, carry out field visits, and draft or revise sector-related reports as required;
- (vi) review the progress of work of the national team of water supply engineers and surveyors and ensure timely delivery of the results of the surveys, the preparation of layouts and cost estimates;
- (vii) provide inputs in formulating and assessing alternative development schemes, carrying out cost-comparison analysis and selecting the alternatives;
- (viii) review water demand projections and the hydraulic calculations carried out by the national team engineers and make sure that pipelines, reservoirs and pumping stations are dimensioned in order to satisfy the projected average and maximum day and hour water demand;
- (ix) ensure permanent and efficient interactions between the water supply engineers, the safeguard and environment specialists, and the financial and economy specialists;
- (x) interact with the institutional specialists and participate in the review of the legal, regulatory, and financial framework for the sector, and determine areas for improvement in urban water supply and sanitation;
- (xi) work closely with the water treatment expert and evaluate technical options for water treatment that are cost-effective and sustainable;
- (xii) work closely with the hydrogeologist and review the intermediate results of the hydrogeological surveys; examine alternative solutions for groundwater development and approve final hydrogeological reports;
- (xiii) provide suggestions and inputs to institutional experts in order to identify specific needs and to tailor suitable capacity building programs targeting particularly; (a) financial sustainability, (b) tariff setting, (c) system management, and (d) utility management;
- (xiv) provide inputs to the institutional and financial experts to tailor a program for strengthening institutional structure and implementation capacity with respect to financial sustainability and tariff setting, governance, utility performance, and private sector participation;
- (xv) provide guidance and technical support in preparing a comprehensive FS feasibility study including preliminary conceptual technical engineering layouts of the planned infrastructure in support of the investment program;
- (xvi) provide support and guidance to the national Procurement expert for the: assessment of the procurement capacity of both EA and IA, preparation of contract packaging, arrangements for project implementation, project implementation schedule, scope of work for Consultants;
- (xvii) lead workshops and/or seminars about the project addressed the EA, IA, ADB and other project stakeholders;
- (xviii) coordinate and provide inputs to the preparation of intermediate and final reports on the FS; and
- (xix) coordinate water resources studies that demonstrate long term availability of the water resources for domestic water supply and studies on competitive use of water.

3. **Institutional Specialists** (2 positions, 1.5 person-months each) - The Institutional Specialists will carry out the following main tasks:

- (i) review the recent regulatory framework in the Water Supply sector with particular concern to recent Decrees of Cabinet of Ministers (DCM) in the sector (particularly examine changes/proposals in the Legal agreements and Fiduciary control as per DCM No. 306, to improve structure and management of WSS enterprises, and No. and 334 to improve mechanisms of finance from international donors) and assess the adequacy of the recent reform for the water supply sector;
- (ii) carry out dedicated interviews and evaluate the management and operational capability of the current water utility management;
- (iii) identify weaknesses within the management, administration, planning and maintenance groups and propose measures and means to improve the institutional and capacity in areas identified as insufficient or weak with the purpose to ensure effective and sustainable implementation of the investment program;
- (iv) propose mechanisms aimed to foster improved coordination among various organizations and stakeholders involved in the water supply and sanitation sector;
- (v) assess the O&M capacity of the lower tier of the water supply management, particularly at WDCs and HH connections;
- (vi) identify and propose capacity building programs addressed to both: a) the management, and b) the operational staff of the provincial *suvokova* taking also into account needs for improving operation and maintenance capacity of the personnel assigned to the districts' *suvokovas* branches;
- (vii) work in coordination with the team leader and the FS engineering staff to identify specific needs for technical capacity building that will be provided to the *suvokovas* personnel in charge of operation and maintenance through on-the-job training during construction or specifically tailored training inland or abroad, in order to secure sustainable operation and management of the assess in the long term;
- (viii) prepare outlines of the capacity building programs proposed to be implemented during the construction phase and further, as required, as well as matrix-type summaries and cost estimates of such capacity building programs with relevant schedule of implementation;
- (ix) identify the needs for consulting specialists, both national and international, required to be assigned under the detailed design and construction supervision program of the Project to ensure the proper implementation of the Capacity Building Program, which will be finalized under the detailed design and further implemented under the construction phase of the project, and prepare a descriptive scope of work for said experts;
- (x) propose institutional / structural arrangements to be applied for the construction of the water supply facilities being financed under the ADB Loan; and
- (xi) provide inputs to periodic and final reports as well as to workshops, as needed.

4. **Project Financial Specialist** (2 person-months) - Under the FS, the International Project Finance Specialist will:

- (i) update existing financial management capacity assessment of the EA and the IA for the project in accordance with ADB's Technical Guidance Note (TGN) for Financial Management Assessment (2015), TGN for project financial reporting (2015), and the TGN for preparation of cost estimates (2014); use FMA questionnaires as a tool and hold meetings and discussions to assist with the FMA; identify risks to financial management, and develop risk mitigation measures and FM action plan; determine financial reporting and auditing arrangement for the Agencies;

- (ii) prepare the financial evaluation (estimating Financial Internal Rates of Return) of the proposed investment components according to ADB's Technical Guidance Note for Financial Management Assessment (2015), and the Financial Due Diligence Methodology Note (2005); assess demand and tariff assumptions, check tariff setting mechanism, review cost structure as well as billing and collection system; prepare forecasts of cash flows and revenue and cost projections that will ensure financial viability; carry out sensitivity analysis for the financial evaluation;
- (iii) review and analyze the financial performance using the financial statements of the past 3 years of related districts (on pro forma basis); review the business plan and financial performance of the country and ADB project related districts under DCM 306; prepare and develop financial projections for the company assuming ADB project based on the corporate restructuring reform; evaluate cost recovery and debt repayment capacity, external public and private financing sources, and recommend financial covenants if required;
- (iv) review the fiscal arrangement and fiscal capacity of the country to sustain the investment program and review the financial performance of service delivery and capacity of implementing agencies regarding cost recovery, borrowing capacity, collection of fees and taxes, accounts receivable, and subsidies, as appropriate.
- (v) design the funds flow and disbursement mechanisms based on the FMA of both EA and IA; propose on-lending arrangement of ADB loan proceeds;
- (vi) review past and potential government subsidy programs;
- (vii) Work with the social development specialist to develop a willingness to pay survey for water; conduct tariff affordability analysis;
- (viii) work with sector specialist and prepare tables of detailed cost estimates, a summary cost estimates table, a financing plan in accordance with ADB's Technical Guidance Note for Financial Management Assessment (2015), TGN for project financial reporting (2015), and the TGN for preparation of cost estimates (2014);
- (ix) interact with the Institutional specialist and recommend strategies to ensure the financial sustainability of the proposed investment and provide inputs for identifying any further capacity building particularly with concern to financial management) that will be necessary to insure a smooth and effective implementation the Project;
- (x) develop and test tariff setting and if needed, identify and quantify subsidy needed to achieve financial sustainability and make recommendations on transparent, equitable and efficient mechanisms for services tariffs setting;
- (xi) propose a draft project financial performance system and relevant indicators for monitoring financial performance of the reconstructed company, considering the proposed financial structure and tariff setting methodology;
- (xii) make recommendations regarding an effective and appropriate regulatory mechanism to ensure service quality and affordable fees.
- (xiii) propose institutional and financial improvement arrangements for the water utility management by identifying reform measures and indicative target dates;
- (xiv) provide inputs for the preparation of a capacity building program in Financial Management Systems being addressed to the IA, EA, and other representatives of stakeholders; and
- (xv) assist in drafting the relevant sections of RRP and linked documents and provide relevant reports as needed.

5. **Project Economist** (1 person-month) - Under the FS, the Project Economy Specialist will carry out the following tasks:

- (i) prepare overall project and subproject economic analysis in accordance with all ADB relevant guidelines which include the following: (i) Guidelines for the Economic Analysis of Projects (2017), Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects (2001), Handbook Guidelines for the Economic Analysis of Water Supply Projects (1999), Handbook for Integrating Risk Analysis in the Economic Analysis of Projects (2002), and ADB's Criteria for Subsidies;
- (ii) provide survey questions to the social survey team regarding affordability and people's willingness to pay;
- (iii) prepare the project economic analyses following the 10 Key Areas of Economic Analysis in accordance with the guidelines including review of macroeconomic setting, economic justification, demand forecast, least economic cost analysis, economic cost and benefits analysis, economic internal rates of return and average incremental economic costs, sensitivity analysis and benefit distributional analysis; and
- (iv) with the Institutional and Finance Specialist, review the tariff policy, tariff determination guidelines and other policies, and standards in the urban and water supply sectors. Assess the performance of past WSS tariffs and subsidies to identify improvements.

6. Environment Specialist (2 person-months) - The Environment Specialist will carry out the following tasks:

- (i) prepare and finalize rapid environmental assessment checklist to determine environment category;
- (ii) interacting with the civil engineering and social safeguard specialists for the information and data requirements available in the feasibility study and technical design reports. Identifying the gaps in information that still need to be included and obtaining the necessary information for the IEE;
- (iii) estimating cost for EMP implementation and interacting with the economic and financial consultants to include the EMP costs into the project budget and bidding documents. The EMP costs consist of mitigation measures, environmental monitoring measurements, and environmental supervision, reporting and capacity building for PCU and contractors;
- (iv) assist in conducting a meaningful public consultation by presenting draft IEE at meeting with relevant government agencies, local authorities, other stakeholders, local communities and potential affected people in the project sites. Incorporating their comments and feedback in the revision of the IEE;
- (v) incorporating comments from CSA, ADB, and subsequently assisting CSA in obtaining necessary approval to the IEE from ADB and relevant Government ministries;
- (vi) assess the impact of wastewater and propose possible solutions;
- (vii) work closely with the design engineer to ensure that the wastewater generated from the project, especially industrial effluents if any, will not have significant and adverse environmental impacts;
- (viii) prepare IEE in compliance with ADB's SPS and national environmental requirements. The IEE should also include the assessment of existing transmission and distribution networks and the recommended disposal methods of pipes in the EMP; and
- (ix) work closely with the Climate Change Specialist to reflect in the IEE the impacts of climate change.

7. **Social Safeguard (Resettlement) Specialist** (1.5 person-months) - Following SPS 2009, the Social Safeguard (Resettlement) Specialist will:

- (i) provide guidance on socioeconomic survey, census survey and social impact assessment;
- (ii) conduct stakeholders consultation and analysis;
- (iii) prepare analysis of survey results;
- (iv) provide inputs on social dimension and safeguard component on all project documents;
- (v) prepare and finalize the resettlement plan, summary of poverty reduction and social strategy, indigenous peoples impact categorization, and involuntary resettlement impact categorization;
- (vi) prepare involuntary resettlement categorization checklist;
- (vii) prepare due diligence report on land acquisition and resettlement;
- (viii) for subprojects involving land acquisition and resettlement, prepare a land acquisition and resettlement plan, disclosure and grievance procedures;
- (ix) coordinate with project team to ensure that mitigation measures are integrated into the project design features;
- (x) ensure that resettlement-related information are well considered and included in the program communication plan;
- (xi) assess the capacity of executing agency to screen impacts, prepare and implement resettlement plans; and
- (xii) recommend appropriate capacity development activities to develop or enhance safeguards knowledge and skills of executing agency.

8. **Social Development and Gender Specialist** (1 person-month)- The Specialist should:

- (i) collect sex-disaggregated baseline data to set appropriate gender targets;
- (ii) develop a gender action plan (GAP);
- (iii) support improvement of the collection of sex-disaggregated data and information for the qualitative elements of the GAP matrix and DMF;
- (iv) conduct a gender analysis and identify potential gender design features;
- (v) collect the qualitative benefits from the provision of water supply and sanitation, and solid waste management;
- (vi) prepare a poverty, social and gender assessment (PSGA) of the project's target beneficiary communities;
- (vii) draft the Summary Poverty Reduction and Social Strategy (SPRSS) based on the findings of the PSGA. Specifically, the Specialist will (a) work with the social survey team to ensure that household data and other demographic data that will be collected are sex-disaggregated; and (b) lead the collection of qualitative information that may not be included in the survey, such as, women's perspectives on the potential benefits of the project, gender division of labor in the communities and household and see if the project will help ease women's housework, potential income-generating opportunities during and after the project, and other gender-relevant information; and
- (viii) consult with women's groups, female beneficiaries, and female staff to identify potential gender design features and lessons learned from previous projects.

9. **Climate Change Specialist** (1 person-month) The Climate Change Specialist will identify expected climate change hazards relevant to the project. He/she will work with the Team Leader to:

- (i) identify and assess impacts and risks to the project structure, operation, maintenance and longevity;

- (ii) assess and recommend appropriate climate adaptation measures to incorporate into project design;
- (iii) estimate the incremental cost of the adaptation options; and
- (iv) conduct the climate change review on the project due to its location and link to the snow melt streams.

10. **Project Management Specialist** (2 positions, 1.5 person-months each) - The Project Management Specialist will:

- (i) assist the ADB, Government, TRTA team leader and other relevant team members to identify and evaluate potential national individual consultants and survey personnel/organizations capable of completing the technical, social, resettlement and environmental due diligence tasks for the Project. Provide daily progress reports by e-mail summarizing the status of the procurement process.
- (ii) assist the ADB, Government, TRTA team leader and other relevant team members to discuss and negotiate with candidate national individual consultants and survey personnel/organizations in order to complete the procurement process at the soonest possible time.
- (iii) in coordination with the TRTA team leader and other relevant team members, refine the detailed terms of reference, implementation schedule and anticipated outputs for each of the individual consultants and survey personnel/organizations of the technical, social, resettlement and environmental teams. Ensure that selected team members fully understand these requirements.
- (iv) liaise closely with Government to ensure that any specific procedures and protocols regarding the assignment of, implementation of and payments to these national personnel/entities fully accord with Government protocol, procedures and requirements.
- (v) assist the TRTA team leader and other relevant team members to coordinate and manage the implementation of national consultants and survey personnel/organizations throughout Project implementation, ensuring that they implement and complete their inputs in accordance with the terms of reference and implementation schedule.
- (vi) assist to coordinate fieldwork and survey activities, ensuring that appropriate local procedures, requirements and protocols are followed. Report any emerging issues immediately, and where possible, recommend mitigation measures.
- (vii) provide weekly summary progress reports for circulation to ADB, Government, the TRTA team leader and other relevant team members outlining the activities performed, outputs developed, any emerging issues and where possible, the recommended mitigation measures. Be available at reasonable times to discuss these issues, as necessary.
- (viii) in conjunction with the TRTA team leader and relevant team members, coordinate the development and submission of Project reports and other outputs as required throughout the Project duration. Assist where necessary in ADB Missions and in other meetings relating to the Project.
- (ix) at the completion of the assignment, prepare and submit a summary report outlining the national individual consultants and survey individuals/organizations, any issues encountered and mitigation measures implemented.

B. NATIONAL CONSULTANTS

11. **Municipal Civil Engineer** (2.0 person-months) - The national municipal civil engineer will work closely with the TL and is the TL's technical coordinator and reviewer who will check the work and inputs of national engineers, particularly:

- (i) review the population projections and water demand within the project area;
- (ii) review layouts and conceptual designs of the water supply network, including transmission main, pumping stations and reservoirs, distribution mains and secondary distribution;
- (iii) review field surveys; inspect all existing water supply facilities within the project area; carry out interviews with technical personnel of various provincial *suvokova* and District "branches" and obtain from them information about the real conditions of the existing water supply networks components including the electromechanical infrastructure including pumps, chlorinators, controls and transformers;
- (iv) review the assessment of the existing water supply network within the planned distribution area;
- (v) review the hydraulic analysis of the transmission main and of the pipeworks to make sure that pumps and pipelines are sufficiently dimensioned to respond to the increasing service water demand up to the Project horizon;
- (vi) review the evaluation of treatment options;
- (vii) review the quantitative assessments of groundwater availability in the long term prepared by the Hydrogeologist and assess the quantities of works such as drilling of new or rehabilitation of existing wells, replacement of submersible pumps, and other appurtenances within each potential wellfield within the project perimeter;
- (viii) review the evaluation of alternative source of water;
- (ix) review project technical data and records;
- (x) review the proposed water supply schemes and other feasible alternatives for recommendation;
- (xi) review the cost estimates of project outputs;
- (xii) review all drawings, quantities and measures are conform with National standard norms as well as with international requirements as needed; and
- (xiii) provide the PCU with the required technical assistance throughout the period required for the submission of the FS documents to the State Expertise.

12. **Water Supply and Sanitation Engineers** (2 positions, 3.0 person-months each) - The national Water Supply Engineers will work closely with the TL and undertake the following tasks under the FS:

- (i) review the population projections and water demand within the project area for each village and water distribution center;
- (ii) establish layouts of the water supply network, including transmission main, pumping stations and reservoirs, distribution mains and secondary distribution;
- (iii) carry out field surveys; inspect all existing water supply facilities within the project area; carry out interviews with technical personnel of various provincial *suvokova* and District "branches" and obtain from them information about the real conditions of the existing water supply networks components including the electromechanical infrastructure including pumps, chlorinators, controls and transformers;
- (iv) based on the field surveys make an accurate assessment of the existing water supply network within the planned distribution area; assess the condition of pipelines and electromechanical equipment and determine these components which need to be replaced;

- (v) prepare layouts of the water supply systems down to the secondary and street distribution system, including all other system appurtenances such as pumping stations, disinfection devices, ancillary buildings, etc.;
- (vi) for each pumping station provide layouts of the appurtenances such as reservoirs, pump houses, chlorinators, transformers as well as a description of all equipment including an assessment of the conditions of such equipment;
- (vii) carry out hydraulic analysis of the transmission main and of the pipeworks from each pumping – distribution center down to the service areas; make sure that pumps and pipelines are sufficiently dimensioned to respond to the increasing service water demand up to the Project horizon;
- (viii) provide pertinent inputs to the water treatment specialist for the preparation of evaluation of treatment options;
- (ix) work closely with and provide pertinent inputs when requested by the municipal civil engineer;
- (x) review the quantitative assessments of groundwater availability in the long term prepared by the Hydrogeologist and assess the quantities of works such as drilling of new or rehabilitation of existing wells, replacement of submersible pumps, and other appurtenances within each potential wellfield within the project perimeter;
- (xi) develop an alternative including groundwater as an alternative or complementary source of water;
- (xii) obtain long term flow records of irrigation canals in the project area and assess minimum available flow for abstraction during the critical summer months;
- (xiii) develop optional water supply schemes that can be sustainable and technically feasible alternatives for recommendation;
- (xiv) carry out a detailed assessment of the existing water supply infrastructures in the project area; evaluate the opportunity of rehabilitating the water facilities for future needs as well as alternative options;
- (xv) prepare cost estimates for all project outputs;
- (xvi) in close collaboration with the TL carry out cost-benefits comparison analysis in order to select the most appropriate, cost effective and sustainable alternative for development;
- (xvii) provide inputs to the TL for the preparation of an implementation plan of the Project;
- (xviii) provide inputs to the Procurement Specialist, the Financial Expert and the TL for the preparation of a procurement Plan;
- (xix) provide the involuntary resettlement team with information, data and layouts, regarding rights of way for pipelines, location and surface of any infrastructure included in the Project requiring permanent or temporary occupation of land;
- (xx) prepare drawings and layouts as needed;
- (xxi) make sure that all drawings, quantities and measures are conform with National standard norms as well as with international requirements as needed; and
- (xxii) provide the PCU with the required technical assistance throughout the period required for the submission of the FS documents to the State Expertise.

13. **Hydraulic Engineer** (1 person-month) - During his/her assignment under the TA, the Hydraulic Engineer will:

- (i) carry out all required the hydraulic calculations for the optimization of each water supply system as proposed in the FS;
- (ii) establish hydraulic profiles along existing and planned transmission and distribution mains in each subproject;

- (iii) verify the adequacy of the existing water distribution pipework to convey the quantities of water to and within each service area taking into account the planned water demand at the Project horizon;
- (iv) optimize the size of pipelines within the service area commanded from each pump station or each water distribution center, taking into account average and peak hour demand as well as fire requirements at the project horizon;
- (v) based on the water demand of service areas, optimize the needed total pumping and lifting capacity at each relevant pumping station as well as the number and the specific capacity of each pump, taking into account maximum-day, peak-hour water demand, and stand-by capacity;
- (vi) optimize the size of the primary, secondary and service distribution lines within each distribution area considering standard requirements relative to maximum flow velocity in pipelines and maximum day water demand at the project horizon;
- (vii) provide inputs as needed for the selection and dimensioning of pumps and pumping equipment;
- (viii) carry out calculations for the optimization of reservoirs and elevated tanks;
- (ix) prepare layouts of network systems; and
- (x) provide inputs to reports as needed.

14. **Project Finance and Economy Specialist** (3 person-months) - In the FS, the national Project Finance and Economy Specialist will primarily be the following:

- (i) assist the international Project finance specialist to assess financial performance and update the existing financial management assessment of the EA and IA;
- (ii) assist the EA and if applicable, the IA, in the process of approval of the Project by the MOF and other national commissions ad hoc by providing, as needed, competent answers to any clarification to enquiries set by the MOF;
- (iii) provide assistance to the international finance specialist to carry out analysis of financial components based on ADB's Guidelines for the Economic Analysis of Projects and assess their economic viability;
- (iv) carry out sensitivity analyses;
- (v) provide inputs to organize and further review the outputs of the socio-economic survey with regard to ability-to-pay;
- (vi) in consultation with the Social Development Specialist incorporate poverty reduction impacts in accordance with ADB's Handbook on Integrating Poverty Impact Assessment in the Economic Analysis of Projects;
- (vii) provide assistance to undertake analysis of tariff, affordability, and sustainability;
- (viii) collaborate/coordinate with the international project economy analyst to ensure consistent use of approach and assumptions in financial and economic analyses;
- (ix) provide inputs to develop economic indicators relevant to the water supply sector roadmap;
- (x) assist for the preparation economic cost-benefit assessments and economic analysis of the proposed Projects;
- (xi) estimate the economic internal rate of and net present value, with sensitivity analysis and quantitative risk analysis;
- (xii) provide inputs for the evaluation of the project's economic risks and propose mitigation measures;
- (xiii) assist for the preparation of economic justification of the project based on the overall program development of the Republic of Uzbekistan; and
- (xiv) provide inputs to periodic and final reports as needed.

15. **Procurement Specialist** (3 person-months) - Under the FS the Procurement Specialist will undertake the following tasks:

- (i) carry out a Project Procurement Risk Assessment in accordance with the ADB requirements and procedures; identify gaps, and recommend appropriate undertakings;
- (ii) carry out interviews based on Project Procurement Risk Assessment Questionnaire and prepare a Project Procurement Risk Assessment;
- (iii) provide advices to TL and other consultant team members on suitable procedures for procurement of services, works and goods and for project and subproject packaging;
- (iv) suggest and if opportune revise procedures and methods for the procurement of goods, works and services following national and international bidding as appropriate;
- (v) coordinate and take the lead in the preparation of the procurement plan;
- (vi) provide comments on quantities of works and goods, cost estimates and proposed Project implementation organization as appropriate;
- (vii) ensure that methods of procurement requiring international bidding are in accordance with ADB procurement procedures and documents;
- (viii) ensure that methods of Procurement requiring National bidding are in accordance with national procurement procedures in force in Uzbekistan but also consistent with ADB requirements for national bidding;
- (ix) provide inputs for the preparation of arrangements for Project implementation;
- (x) provide inputs for the preparation of terms of reference for consultants being selected for project implementation;
- (xi) prepare draft scope of works for international and national consultants required for Project implementation;
- (xii) provide suggestions and inputs relative to needs for capacity building in procurement and relevant training programs;
- (xiii) provide inputs to interim and final reports as required;
- (xiv) conduct a market risk assessment using available data on similar procurement and contracts in the sector as well as the qualification and performance of local contractors and suppliers as necessary; and
- (xv) justify the specific procurement arrangements and packaging based on the project procurement and market risks assessed.

16. **Social Development and Gender Specialist** (3 person-months) - The national expert will assist the international Social Development and Gender Specialist to:

- (i) collect sex-disaggregated baseline data to set appropriate gender targets;
- (ii) develop a gender action plan (GAP);
- (iii) support improvement of the collection of sex-disaggregated data and information for the qualitative elements of the GAP matrix and DMF;
- (iv) conduct a gender analysis and identify potential gender design features;
- (v) collect the qualitative benefits from the provision of water supply and sanitation, and solid waste management;
- (vi) prepare a poverty, social and gender assessment (PSGA) of the project's target beneficiary communities;
- (vii) draft the Summary Poverty Reduction and Social Strategy (SPRSS) based on the findings of the PSGA;
- (viii) work with the social survey team to ensure that household data and other demographic data that will be collected are sex-disaggregated;

- (ix) lead the collection of qualitative information that may not be included in the survey, such as, women's perspectives on the potential benefits of the project, gender division of labor in the communities and household and see if the project will help ease women's housework, potential income-generating opportunities during and after the project, and other gender-relevant information; and
- (x) consult with women's groups, female beneficiaries, and female staff to identify potential gender design features and lessons learned from previous projects.

17. **Resettlement Specialist** (2 person-months) - The national resettlement specialist will assist the International Social Safeguards (Resettlement) Specialist to:

- (i) provide guidance on socioeconomic survey, census survey and social impact assessment;
- (ii) conduct stakeholders consultation and analysis;
- (iii) prepare analysis of survey results;
- (iv) provide inputs on social dimension and safeguard component on all project documents;
- (v) prepare and finalize the resettlement plan, summary of poverty reduction and social strategy, indigenous peoples impact categorization, and involuntary resettlement impact categorization
- (vi) prepare involuntary resettlement categorization checklist;
- (vii) prepare due diligence report on land acquisition and resettlement;
- (viii) for subprojects involving land acquisition and resettlement, prepare a land acquisition and resettlement plan, disclosure and grievance procedures;
- (ix) coordinate with project team to ensure that mitigation measures are integrated into the project design features;
- (x) ensure that resettlement-related information are well considered and included in the program communication plan;
- (xi) assess the capacity of executing agency to screen impacts, prepare and implement resettlement plans; and
- (xii) recommend appropriate capacity development activities to develop or enhance safeguards knowledge and skills of executing agency.